# An Investigation of the Ethnography of Knowledge through an Organisational Ethnography of ActewAGL

By

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This work has not been previously submitted for a degree or diploma in any University. To the best of my knowledge and belief, this thesis contains no material previously published or written by any other person except where due reference is made in the thesis itself.

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Tracey Leanne Dalitz

May 2005 / May 2006

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# Abstract

This thesis develops and empirically tests the method of the Ethnography of Knowledge in the context of an ethnographic study of the Logistics Branch of ActewAGL, an Australian multi-utility company.

The study is based on fieldwork undertaken over an eight and a half month period of participant observation and uses a grounded style of analysis.

In trying to understand the knowledge underpinning the social construction of a particular aspect of the field site I have used a confessional ethnographic approach. After analysing and coding the data I then assign knowledge taxonomies to the ethnographic account to understand the knowledge underpinning the social situation. I have called this method the Ethnography of Knowledge. The Ethnography of Knowledge does not follow a piece of knowledge through an organisation or attempt to understand the organisation's knowledge but uses knowledge as a tool to understand the social construction of the setting, not as the focus itself. The thesis then explores where, when and how the Ethnography of Knowledge is useful in relation to four significant themes from the data; routines, in/formal, change and power.

The contributions of the thesis are primarily methodological (the Ethnography of Knowledge), secondarily locational (Australia and ActewAGL) with some incidental theoretical contributions related to the data chapters. The thesis also contributes and assessment of the applicability of viewing various theoretical constructs as knowledge-based. Methodologically, my main contribution is to use participant observation and then in the analysis phase to assign knowledge taxonomies to the ethnographic account in order to gain a greater understanding of the socially constructed knowledge underpinning the actions in the social setting. I then empirically test how useful the application of this method is in relation to the various themes that form the basis of my data chapters. Through testing the method, this study confirms that whilst knowledge is a useful methodological tool in enhancing understanding of the certain aspect of the organisational social setting, it is not equally in all situations. When aspects of the social setting are knowledge-based or locally observable, such as routines and in/formal, the Ethnography of Knowledge is very useful in enhancing an understanding. However as one moves to a more macro view of the organisation, away from the initiation of actions, such as in organisational change or power, the Ethnography of Knowledge is less useful.

Locationally I contribute a new site and add to the sparse Australian organisational ethnographic literature. In each chapter I provide incidental theoretical contributions in an ethnographic and empirical study of each particular construct. Most significantly, I am the first to test routines theory as a full participant in organisational routines, adding problem-solving as a characteristic. I also develop and use a model for understanding and analysing how the formal and informal aspects of organisations act and interact in getting things done. Implications of this research are discussed further.



# Key Words

methodology, knowledge, ethnography, informal, formal, routines, change, power, organisations / organizations, ActewAGL, utilities,

# Contents Page

An Investigation of the Ethnography of Knowledge through an Organisational Ethnography of ActewAGL ..... i
Acknowledgements ..... iii
Abstract ..... iv
Key Words ..... iv
Contents Page ..... v
List of Tables and Figures ..... x
Declarations ..... xi
Originality ..... xi
Anonymity ..... xi
Language ..... xi
List of Abbreviations ..... xii
1 Chapter 1 – Introduction ..... 1
1.1 Introduction to the Research ..... 4
1.2 Thesis Structure ..... 7
1.3 Integration of the Literature ..... 13
1.4 The Purpose and Priorities of the Study ..... 15
1.4.1 Research Issues / Questions ..... 15
1.4.2 Aims of the Study ..... 15
1.5 Participant Observation: A Most Magnificent Methodology ..... 17
1.6 Importance of the Study ..... 18
1.7 Limitations ..... 22
2 Chapter 2 – Methodology ..... 25
2.1 Introduction ..... 25
2.1.1 How Does a Girl Like Me End Up Doing a Job Like This? ..... 25
2.2 Organisational Ethnography – a Small but Growing Field ..... 26
2.2.1 Organisational Ethnography - Historical Beginnings ..... 28
2.2.2 Organisational Ethnography – Recent Developments ..... 28
2.2.3 Observational Techniques in the Study of Cultures ..... 31
2.2.4 Organisational Ethnographies and the Wider Socio-economic Environment ..... 32
2.2.5 Flexibility: The Hallmark of Ethnography ..... 33
2.2.6 Present and Future Potential for Organisational Ethnographies ..... 33
2.3 The Ethnography of Knowledge and How I Test It ..... 35
Research Setting ..... 38
2.3.1 Selecting the Field Site ..... 38
2.3.2 The Field Site ..... 40
2.3.3 Researcher's Role in the Field Site ..... 41
2.3.4 Timeframe ..... 42
2.3.5 Acceptance in the Field Site – "She is a sideshow freak!" ..... 43
2.3.6 Ethics ..... 45
2.4 Methodology ..... 47
2.4.1 First Encounters – Placing the Organisation in its Socio-historical Context 52
2.4.2 Participant Observation / Ethnography: An Introduction ..... 53
2.4.2.1 Confessional Ethnography ..... 54
2.4.2.2 Participant Observation as a Methodology ..... 56
2.4.3 Interviews ..... 61
2.4.4 Social Network Analysis ..... 63

2.4.4.1 Social Network Analysis – Methodology ..... 66
2.4.4.2 Social Network Analysis – Validity Issues ..... 67
2.4.4.3 Social Network Analysis – Data Considerations and Biases ..... 68
2.4.5 Organisational Chart & Document Analysis ..... 69
2.4.6 Discrepancy Analysis ..... 70
2.4.7 Complexity Analysis ..... 71
2.5 Validity Issues ..... 72
2.6 Problems / Issues with the Methodology ..... 75
2.6.1 Neutrality is an Illusion - Rolling Out a Role ..... 75
2.6.2 Ethnography is Hard Work ..... 77
2.6.3 You Can Only See What You Can See ..... 77
2.6.4 Clandestine Research and Gaining Access ..... 79
2.6.5 Fitting In: Babes and Boars, Nobody Goes Pig Hunting in a Bikini! ..... 80
2.7 Conclusion ..... 82
3 Chapter 3 – Knowledge ..... 84
3.1 Introduction ..... 84
3.2 The Ethnography of Knowledge ..... 87
3.3 Social Construction of Knowledge ..... 87
3.4 Knowledge Taxonomies ..... 90
3.4.1 Tacit, Explicit and Codified ..... 92
3.4.2 Data, Information, Knowledge ..... 96
3.4.3 Individual Knowledge, Collective / Communal Knowledge & Organisational Knowledge ..... 98
3.4.4 Organisational Memory ..... 101
3.4.5 Procedural and Declarative Knowledge ..... 103
3.4.6 Know-what, Know-how, Know-who and Know-why ..... 105
3.4.7 Expert Knowledge / Product Knowledge ..... 110
3.4.8 Embodied, (Disembodied) and Embedded Knowledge ..... 112
3.4.9 Distributed Knowledge ..... 114
3.4.10 Information Processing View of Knowledge and the Cognitive View of Knowledge ..... 115
3.5 Conclusion ..... 117
4 Chapter 4 – ActewAGL ..... 119
4.1 Introduction ..... 119
4.2 Role of Utilities in Australia ..... 120
4.3 Functions of ActewAGL ..... 120
4.4 History of ActewAGL and its Predecessors ..... 122
4.4.1 Early Days ..... 123
4.4.2 Moving Towards Relative Independence ..... 127
4.4.3 Joint Venture ..... 129
4.5 Ownership ..... 131
4.6 Organisational Structure ..... 133
4.7 People and Places ..... 136
4.8 Organisational Characteristics ..... 137
4.8.1 Adaptability in a Crisis ..... 138
4.8.2 Good Corporate Citizen ..... 139
4.8.3 ActewAGL is a Good Place to Work ..... 140
4.9 Logistics Branch ..... 142
4.9.1 Location and Locale ..... 142
4.9.2 Logistics Functions and Structure ..... 143
4.9.3 Characteristics of Logistics ..... 145
4.10 Conclusion ..... 145

5 Chapter 5 – Routines ..... 147
5.1 Introduction ..... 147
5.2 Where Routines Came From ..... 150
5.3 Definitions and Governing Characteristics of Routines ..... 151
5.4 A Brief Overview of the Literature on Routines ..... 152
5.5 Contributions of This Study to the Study of Routines ..... 153
5.6 Routines are Best Viewed Ethnographically ..... 155
5.7 Routines at ActewAGL ..... 156
5.7.1 Learning the Routines: Training in Procurement ..... 157
5.7.2 Effortful Roles and Tasks in Procurement ..... 159
5.7.3 Routines in Procurement over Time ..... 160
5.7.4 Path Dependency, Strategy and the Amalgamation of Functions ..... 162
5.7.4.1 REMAP and Strategic Direction in ActewAGL ..... 162
5.7.4.2 Co-Location of Accounting Functions in Logistics ..... 163
5.7.4.3 Historical Path Dependency: Functional Amalgamation in ActewAGL 163
5.7.5 Collective Sense-making in Procurement ..... 166
5.7.6 Structures Facilitating Routines in Procurement ..... 168
5.7.7 Knowledge in Routines and People in Procurement ..... 170
5.7.8 Inertia, Passivity and Performance in Procurement ..... 171
5.7.9 Stability and Change in ActewAGL Routines ..... 173
5.7.10 Changes to Routines in Procurement ..... 174
5.7.11 Adapting Routines to Deal with External Issues ..... 178
5.7.12 Problem-Solving in Procurement ..... 181
5.7.13 Historical Influences on Routines in the Warehouse ..... 184
5.7.14 Complexity and Conscious Thought: Warehouse Roles and Tasks ..... 187
5.7.15 Co-Ordination in the Warehouse: Checklists and Procedures ..... 189
5.7.16 Knowledge and the Information-Processing View in the Warehouse ..... 192
5.7.17 Product Knowledge in the Warehouse ..... 193
5.7.18 Inter-relations and Inter-linked Routines in the Warehouse ..... 194
5.7.19 Complexity in the Warehouse: An Analysis ..... 195
5.7.20 Discrepancies in the Warehouse ..... 200
5.8 Routines in the Literature ..... 203
5.9 Characteristics of Routines ..... 204
5.9.1 Routines are Repetitive ..... 204
5.9.2 Routines are Collective ..... 204
5.9.3 Routines as Mindless vs. Effortful Accomplishments ..... 205
5.9.4 Routines are Processual ..... 206
5.9.5 Routines are Context Dependent ..... 207
5.9.6 Routines are Path Dependent ..... 208
5.9.7 Routines are Triggers ..... 209
5.10 Roles and Effects of Routines ..... 210
5.10.1 Routines Co-ordinate and Control ..... 210
5.10.2 Routines Provide Truce ..... 211
5.10.3 Routines Economise on Resources ..... 211
5.10.4 Routines Reduce Uncertainty ..... 212
5.10.5 Routines Provide Stability ..... 213
5.10.6 Routines Embody Knowledge ..... 215
5.11 Characteristics and Roles of Routines Revisited: Contributions from This Research ..... 215
5.11.1 Routines are Not Self-actuating ..... 216
5.11.2 Routines Involve Problem-Solving ..... 217

5.11.3 Routines Change ..... 218
5.12 Routines from an Ethnographic Perspective ..... 219
5.13 The Usefulness of Ethnography of Knowledge on Routines ..... 219
5.14 Conclusion ..... 223
6 Chapter 6 – Informal / Formal ..... 225
6.1 Introduction ..... 225
6.2 Definitions ..... 227
6.3 Formality and Informality in the Literature ..... 230
6.3.1 Formality and Informality as a Communicative Code ..... 232
6.3.2 Formality and Informality as Properties of a Social Setting ..... 232
6.3.3 Formality and Informality in Organisations ..... 233
6.3.3.1 Informality and Formality in Other Aspects of Organisations ..... 235
6.4 Informality and Formality at ActewAGL – A Three-mode Model ..... 237
6.5 Formality and Informality in ActewAGL ..... 243
6.5.1 The Organisation Chart and Organisational Structures ..... 243
6.5.1.1 Structural Change to the Organisation Chart ..... 244
6.5.1.2 Structural Change: Decentralisation and Disparate Systems ..... 245
6.5.2 Informal Social Networks: Getting Things Done Under the Formal Constraints of the Organisation Chart ..... 245
6.5.2.1 Accessing Informal Networks ..... 248
6.5.2.2 Informal Networks Providing Mutual Help and Training ..... 250
6.5.2.3 Informal Networks Enabling Shared Problem-Solving ..... 254
6.5.3 Ownership Structure ..... 259
6.5.4 Corporate Governance and Good Corporate Citizens ..... 260
6.5.4.1 Good Corporate Citizen ..... 261
6.5.4.2 Following Up on Supplier Statements ..... 262
6.5.4.3 Responding to Customers ..... 264
6.5.4.4 Environment ..... 265
6.5.5 Reporting Structures, Feedback and Communication ..... 266
6.5.6 What People Say They Do and What People Do: Procedures, Work Instructions, Work-arounds and Adaptability ..... 270
6.5.6.1 Procedures and Work Instructions ..... 271
6.5.6.2 Accessing and Changing Procedures – Promoting Informality and Work-arounds ..... 273
6.5.6.3 Procedural Processes – Informality at Front, Back or Middle of the Process 274
6.5.6.4 Formal Procedures vs. Informal Networks for Gaining Information 276
6.5.7 Adaptability ..... 278
6.5.7.1 Adapting the System ..... 278
6.5.7.2 Adaptability of Routines ..... 281
6.5.7.3 Adaptability in a Crisis ..... 284
6.6 The Usefulness of the Ethnography of Knowledge on the Informal / Formal ..... 284
6.7 Conclusion ..... 286
7 Chapter 7 – Change ..... 289
7.1 Introduction ..... 289
7.2 Change and Fragmentary Change at ActewAGL and in the Literature ..... 291
7.3 Organisational Change in the Literature ..... 295
7.3.1 Organisational Change Typologies and Approaches ..... 296
7.3.2 Schools of Thought on Change Management ..... 300
7.3.3 Change Models at ActewAGL: Continuous, Incremental and Adaptive Transformation ..... 301
7.3.4 Resistance to Change ..... 304

7.4 Change in ActewAGL ..... 305
7.4.1 Stability and Change at ActewAGL ..... 305
7.4.2 Bottom-up Change in ActewAGL ..... 309
7.4.2.1 Individually Initiated Changes ..... 310
7.4.2.2 Self-directed Work Teams ..... 313
7.4.2.3 REMAP ..... 316
7.4.3 Top-down Change ..... 319
7.4.3.1 Technology ..... 320
7.4.3.2 Organisational and Ownership Structure ..... 322
7.4.3.3 Changes in CEO ..... 325
7.4.3.4 Organisational Restructure ..... 327
7.4.3.5 Moving ..... 329
7.5 The Usefulness of the Ethnography of Knowledge on Change ..... 331
7.6 Conclusion ..... 333
8 Chapter 8 – Power ..... 335
8.1 Introduction ..... 335
8.2 Defining Power ..... 337
8.3 Power and Knowledge ..... 339
8.4 Power in the Organisational Literature ..... 340
8.5 Power in ActewAGL ..... 343
8.5.1 Organisational Structure and Power ..... 344
8.5.2 Secretaries and Scolding ..... 346
8.5.3 Engineers and Evaporating Power ..... 350
8.5.4 Field Crews as Rogue Agents ..... 353
8.5.5 Logistics and the Power of Linking the System ..... 358
8.5.6 REMAP Relegation and Removal of Power ..... 365
8.5.7 Covert Power – Dissonance and Subversion ..... 367
8.5.8 Uncertainty and Power ..... 370
8.6 The Usefulness of the Ethnography of Knowledge in Power ..... 372
8.7 Conclusion ..... 375
9 Chapter 9 – Conclusion ..... 377
9.1 Introduction ..... 377
9.2 Research Issues / Questions ..... 383
9.3 The Logic of the Thesis ..... 384
9.4 Overview ..... 385
9.5 Research Findings / Contributions ..... 386
9.5.1 Methodological Contributions – The Ethnography of Knowledge ..... 386
9.5.2 Locational Contribution – ActewAGL ..... 391
9.5.3 Theoretical Contributions ..... 391
9.6 Limitations of the Study ..... 395
9.6.1 Knowledge ..... 395
9.6.2 Organisations as X ..... 396
9.6.3 The Eye of the Beholder ..... 397
9.6.4 Scalability ..... 398
9.7 General Implications, Recommendations and Future Research ..... 399
9.7.1 The Ethnography of Knowledge ..... 399
9.7.2 Knowledge – A Taxonomical View ..... 400
9.7.3 The Role of the Ethnographer ..... 401
9.7.4 An Ethnographical Approach ..... 402
9.8 Implications and Future Research – Chapters Five-Eight ..... 403
9.9 Final Words ..... 408
Bibliography ..... 409

Appendix 1 – ActewAGL Administrative History ..... 432
Appendix 2 – Complexity of Tasks in the Warehouse ..... 438
Appendix 3 – Discrepancy Analysis Aggregate Totals ActewAGL Warehouse ..... 444
Appendix 4 – Social Network Analysis: Information Map and Social Map of ActewAGL Procurement Section ..... 445
Considerations ..... 445
Informal Information Map ..... 446
Social Mapping ..... 447
Conclusions ..... 448
Appendix 5 – Interview Information / Consent Forms ..... 449
Interview Information Form ..... 449
Methodology ..... 450
Participant Rights ..... 450
Interview Consent Form ..... 451
Methodology ..... 451
Participant Rights ..... 451
Appendix 6 – Interview Guide ..... 453
ActewAGL Staff Interview Questions ..... 453
Name of Interviewee : ..... 453
Division : ..... 453
Name of Interviewer: ..... 453
Date of Interview: ..... 453
Place of Interview: ..... 453
Appendix 7 – List of Codes assigned to the Ethnographic Data ..... 456

# List of Tables and Figures

Figure 1.1 Structure of the thesis 7
Figure 1.2 Contributions of the thesis 21
Figure 2.1 Testing the Ethnography of Knowledge 36
Figure 2.2 Overview of Methodology Used 48
Figure 3.1 The Social Construction of Knowledge 89
Figure 4.1 Map of Canberra, Waterways and ActewAGL Sites 126
Figure 4.2 Structure of ActewAGL Post Joint Venture 130
Figure 4.3 ActewAGL Reporting and Ownership Structures 133
Figure 4.4 ActewAGL Organisation Chart 135
Figure 6.1 Interactions Between Informal and Formal Modes 238
Figure 6.2 Three-mode Model of Informality in ActewAGL 240
Figure 6.3 Management Feedback Loops 266

Table 5.1 Process / Task Complexity Analysis 197
Table 9.1 Summary of Contributions 381

# Declarations

## *Originality*

This dissertation is an original piece of work by the author. The thesis contains no significant amount of material that has been accepted as part of any course of study at any other university.

To the best of the author's knowledge, this thesis contains no material written or published by another person or organisation except where due reference has been made in the text and the reference section of the thesis. Any help that has been obtained from people other than the author in the preparation of the dissertation has been accurately described and fully acknowledged within the body of the work.

## *Anonymity*

Throughout this dissertation the author has removed identifying references to individuals, suppliers, individual comments and activities. The author has used the company name with permission of the organisation, however all views within the thesis are those of the author or the author's informants and do not necessarily reflect the views of the organisation.

## *Language*

The spelling and grammar used within this dissertation is Australian English. For consistency, all spelling has been standardised to this format, however the author has tried to maintain the original spelling where terms are used in citation or reference lists. Hence, words such as 'organization' will most often appear in the dissertation as 'organisation', however in some instances, such as those above, the American spelling may have been retained.

The respondents quoted directly in this dissertation used spoken English as opposed to written English. Where the dissertation quotes what they said the author has used quotation marks and has retained the spoken English if it fits with the written context, although has removed content that does not directly add to the meaning, de-identified the comments and has removed voiced pauses such as 'ums' and 'ahs'.

The author uses written language conventions of double quotes indicating verbatim speech, single or no quotes for paraphrased speech or to indicate another's speech within a quotation, round brackets for contextual data and square brackets for her own contributions. Where double quotations have been used without reference informant comments are indicated.

In order to highlight the role ethnographies serve of seeing the world through insider's eyes anthropologists use the term 'informants' to describe the people whose perspectives they study. Throughout this thesis the author uses the term 'informant/s' or colleagues (because they were both) when referring to the people she studied. She does this to remind the reader that it was the people that she studied that taught her (or informed her) about ActewAGL.

# List of Abbreviations

| | |
|---|---|
| ACT | Australian Capital Territory |
| ACTEA | ACT Electricity Authority (Formed in 1963 as a statutory authority responsible for continuing maintenance and development of the electricity infrastructure in the ACT) |
| ACTEW | Australian Capital Territory Electricity and Water (Established in 1988 through the merger of ACTEA and the Water and Sewerage Branch of the ACT Administration) |
| ActewAGL | Company resulting from a Joint Venture between AGL and the government owned ACTEW Corporation, established October 2000 |
| AGL | Australian Gas Lighting Company |
| AP | Accounts Payables |
| ASX | Australian Stock Exchange |
| CMR | Cable Movement Record |
| CSBA | Council and Customer Service Benchmarking Australia (Independent body that measures the customer service of various industries) |
| DIRKS | Developing and Implementing a Record Keeping System (Methodology developed by the National Archives of Australia based on the Australian and international standards for record keeping and aimed at standardising record keeping across Australian Commonwealth Government agencies) |
| EDMS | Electronic Document Management System |
| EFT | Electronic Funds Transfer |
| ERP | Enterprise Resource Planning System (A set of integrated business applications, or modules, to carry out most common business functions – usually purchased from a vendor) (Martin et al. 1997, p 191) |
| ERS | Automatic payment (payment initiated by the system upon receipt) |
| GST | Goods and Services Tax |
| HPWS | High Performance Work Systems |
| HR | Human Resources (area of functional responsibility) |
| IT | Information Technology (area of functional responsibility) |
| KPIs | Key Performance Indicators |

| | |
|---|---|
| kVA | kilovolt ampere (unit of apparent power in an alternating current circuit, equal to 1000 volt amperes) |
| LMWQCC | Lower Molonglo Water Quality Control Centre |
| LPOs | Local Purchase Orders (type of purchase order used prior to the integration of the automated accounts payables packages) |
| MPOs | Manual Purchase Orders |
| MRVs | Manual Return Vouchers (Paperwork to be filled in when Warehouse items are to be returned to the supplier) |
| OD | Organisation Development (School of thought aimed at organisational improvement through integrating people and how they function into the concept of 'organisation' – developed in the late 1950s and early 1960s) |
| OH&S | Occupational Health and Safety |
| PA | Personal Assistant |
| PO | Purchasing Officer / Project Officer (depending on context) |
| QA | Quality Assurance |
| REMAP | Re-Engineering the Materials Acquisition Process (Name of a Re-engineering project) |
| SIRs | Store Issue Request (Preliminary form handed in over-the-counter to initiate entering a requisition and issuing items in the Warehouse) |
| Y2K | Year 2000 computer system bug that it was feared would have detrimental effects on computers worldwide. |

# 1 Chapter 1 – Introduction

This dissertation provides an organisational ethnography of an Australian utility company, developing and testing the usefulness of the methodology the Ethnography of Knowledge, focusing on the themes and theoretical constructs of organisational routines, in/formal, change and power. In trying to understand the knowledge underpinning the social construction of a particular aspect of the field site (ActewAGL) I have used an ethnographic approach. I then assigned knowledge taxonomies to the ethnographic account to understand the knowledge underpinning the social situation. I have called this method the Ethnography of Knowledge. The Ethnography of Knowledge does not follow a piece of knowledge through an organisation or attempt to understand the organisation's knowledge but uses knowledge as a tool to understand the social construction of the setting, not as the focus itself. The thesis then explores this further by assessing where, when and how the Ethnography of Knowledge is useful and proposes that whilst a useful methodological tool, knowledge is not always an equally useful lens / tool for understanding certain aspects of the social setting. This chapter presents the background to and an overview of the research and explains why the study is important. It presents the structure of the dissertation, highlighting how I have integrated the literature, and outlines the contributions and limitations of this research.

The purpose of this thesis is to develop and test a method which allows us to understand the knowledge underpinning the social construction of a social setting. This purpose emerged during the early stages of my fieldwork after looking at and coding the ethnographic data I had gathered, and discovering it is possible to assign types of knowledge to virtually all aspects of the social setting. I then wanted to try and understand what we can know of the knowledge underpinning the social setting and

whether through an ethnographic study it is possible to use knowledge as a tool to gain a greater understanding of that social setting. Studying and managing knowledge isolated from context means knowledge becomes everything and everything can be interpreted as knowledge. Thus the thesis proposes that knowledge is best used in organisations as a means of understanding the limitations of the environment, how work happens – that is, as a means of adding context to constructs such as routines, power, change and in/formal. Using participant observation allows you to see the knowledge-in-action and to provide an interpretive context for observed situations. The knowledge types, assigned to the ethnography after the ethnographic data is analysed, allow a further avenue of exploration and an understanding of how the organisational constructs are inter-linked, interdependent and how observed actions can be interpreted.

The dissertation provides a series of contributions. The primary contribution is methodological through the Ethnography of Knowledge. The thesis also provides a secondary locational contribution through the ethnographic study of an Australian Utility company. Another secondary theoretical contribution is to test whether the particular literature associated with each of the data chapters can be usefully looked at as being knowledge-based.[1] There are other incidental theoretical contributions in relation to each of the data chapters.

The study contributes a number of findings. It shows where and when the Ethnography of Knowledge is a useful method for gaining a greater understanding of the social setting. However it also indicates that although knowledge underpins everything, such a tool is not always equally helpful in explicating the complexities of the social situation.

[1] This was not the primary purpose but this analysis emerged naturally when I analysed the knowledge underpinning each theme.

In some instances, such as power and change, knowledge is a poor explicator of the social setting. For example, the theoretical constructs of power and change are actually stronger at explaining the setting because the actions initiating power and change cannot always be observed directly. The study also provides theoretical findings that could be used for further work including that routines are problem-solving, that it is possible to operate effectively at the cusp between informal and formal and that all people have power.

This study shows that in ActewAGL knowledge is important in 'how work gets done', especially when combined with other aspects of the organisation including organisational routines, informal and formal customs, processes, artifacts and networks, power and change. How work gets done is an aspect of organisational studies which "has been strangely neglected in the economics and business literature" (Becker 2005b, p 819) and which needs to be explored further (Barley and Kunda 2001).

In sum, organisations are socially created work environments where 'how work get done' is important. Understanding how things get done requires a contextualised view of actions as participants work through organisational routines, understand informal aspects, deal with power and cope with change. The Ethnography of Knowledge is a methodology I have developed in order to combine the strength of ethnographic methods with the knowledge underpinning the social construction of the social setting in observing the social actions.

## *1.1 Introduction to the Research*

"For some topics, there may be no other way of collecting evidence than through participant observation" (Yin 2003, p 94) and I found it a particularly effective methodology for understanding organisational social settings, particularly when coupled with knowledge taxonomies. Knowledge is underpinned by action and although we are unable to 'see' knowledge, we are able to see the underpinning actions. Participant observation is particularly useful in allowing an understanding of the social setting through observed actions. This thesis develops the methodology of the Ethnography of Knowledge using the strengths of a practice-based way of understanding a social setting – participant observation, to understand the knowledge underpinning the social construction of the social setting. I do this through acting as a participant observer and then ethnographically reporting on social situations and the actions of participants. Then in the analysis phase, after coding the data following a grounded style of approach I assign a series of knowledge taxonomies from the literature to the ethnographic account as a means of explicating the knowledge underpinning the actions and how the situation is socially constructed. In analysing the ethnographic data I found over 250 significant codes / themes, four of the most important, in terms of occurrence and ability to describe how work gets done in ActewAGL, I used as the basis of the four data chapters. After producing the ethnographic account, I found that each of these themes has an associated literature. The Ethnography of Knowledge then allowed me to conduct a meta-analysis to draw out the knowledge types underpinning each of the themes of routines, in/formal, change and power. I then test the methodology to see if it is able to be used for all theoretical constructs or only some and so test the applicability of the Ethnography of Knowledge as a means of exploring an organisational social setting and to identify the limitations of such an approach.

I developed this methodological approach in order to cope with some of the issues that I had encountered in my professional life. Many scholars see organisations as knowledge-based (Foss 1996; Grant 1996; Spender 1996; Kaplan et al. 2001) and the social construction literature sees human actions as knowledge-based (Mannheim 1946; Berger and Luckmann 1966). Yet, despite these assumptions we often fail to ask, what can we know of the knowledge that underlies organisations? With this basic question ticking away in the back of my brain, I had a revelation when I experimented with ethnographic techniques and found they enabled me to gain insights into patterns of behaviour that had previously remained shrouded in obscurity. Ethnographic techniques enabled me to 'see' knowledge-in-action and I wondered if using knowledge methodologically combined with ethnography might lead to greater understandings of the social setting and the people that I felt had been lost in the Knowledge Management paradigm.[2] I explored the use of ethnographic methods further, undertook a Master of Applied Anthropology and Participatory Development and discovered the small and as yet under-utilised field of organisational / work or business ethnographic studies.

My next issue was that knowledge is fuzzy, all encompassing, and difficult to define and, despite my initial intentions, it is also difficult to study. Explicitly studying knowledge is difficult, not the least because it represents everything and everything represents knowledge, as social constructionist arguments would suggest. This perspective is also similar to that of a number of cultural anthropologists who see culture as knowledge (primarily revealed through language). That is,

> "culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members … [and is] what people have to learn as distinct from their biological heritage [and must therefore] consist of the end product of learning: knowledge, in a most general, if relative, sense of the word" (Goodenough 1964, p 36).

[2] Knowledge Management forms a stage for this thesis but it is not about Knowledge Management. It is about the usefulness of the Ethnography of Knowledge in understanding a social setting, as explained later in this chapter and Chapter Three.

That is, knowledge underpins what it is that people do in a social setting. Thus, based on the view that knowledge is socially constructed, held and maintained I chose to use knowledge as a tool or as a means of adding depth and context to the ethnographic account of the social situation rather than to explain it.

This study is situated within three related literatures; organisational ethnographies, ethnography as a methodology and the social construction literature. I have assumed social constructionist logic in the thesis and use ethnography as the methodology in the setting of organisations. The study is thus located in these three literatures and is used as a basis from which I develop my contributions.

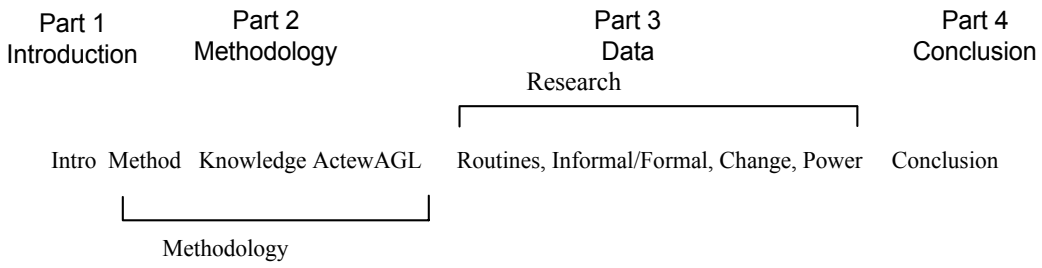
This study makes methodological, incidental theoretical and locational contributions. These contributions are discussed further in Section 1.6 (Importance of the Study). The study's primary contribution is the methodological contribution of the Ethnography of Knowledge. In this capacity the work is not aimed at theorists but at empirical researchers trying to understand aspects of the knowledge-based reality of organisations as social settings. The study shows a number of incidental theoretical contributions based on explorations of the data chapters. Drawn from an eight and a half month period in the Logistics Branch of ActewAGL during which I undertook the roles of 'Procurement Specialist' in the Procurement Section and of 'Storeperson' in the Warehouse, the study provides a secondary contribution of an ethnographic analysis of a Canberra water, gas and electricity utility company. Thus contributing to the sparse Australian ethnographic literature.

## *1.2 Thesis Structure*

This thesis is divided into four parts consisting of nine chapters. Chapter One / Part One forms this introduction, in which I discuss the dissertation by explaining what the research is about, the research issues under exploration and the major contributions it provides.

Part Two – Methodology consists of Chapter Two which is the methodology chapter, Chapter Three discussing the knowledge taxonomies contributing to the methodological aspects of the thesis, and Chapter Four which introduces the field site, as shown in Figure 1.1, below.

**Figure 1.1 Structure of the thesis**




Chapter Two describes the methodologies used in undertaking this research. The primary methodology for this study is participant observation. This chapter discusses participant observation as well as the other supplementary methodologies I employed including interviews, social network, discrepancy, task complexity and document analyses (see Figure 2.2). In addition to providing a description of the methodologies the chapter also presents a brief outline of the history and characteristics of the field site and discusses the time frame of the study, acceptance into the field site and limitations and validity issues associated with the study.

Chapter Three also resides in Part Two. This chapter backs onto the methodology chapter because the knowledge taxonomies form a significant and strengthening part of the methodology of the Ethnography of Knowledge. The chapter is largely definitional highlighting the various knowledge taxonomies I have used in adding depth and context to the ethnographic account, and showing how these can be applied in the setting of ActewAGL. Further, this chapter discusses the social construction of knowledge as the premise for informing all social actions and interactions.

The field site is introduced briefly in Chapter Two and is more completely explored in Chapter Four. This chapter is not ethnographic in nature and nor does it discuss the Ethnography of Knowledge, it presents the background and context of ActewAGL and is aimed at the reader who wants to know more about ActewAGL. Other readers may opt to treat this chapter as background rather than integral to the arguments that form this thesis. Chapter Four includes an explanation of the process by which the research came about, the historical organisational milieu, the basis of ownership of ActewAGL as well as the current organisational structure and functions. Characteristics of both ActewAGL as the parent organisation and Logistics, as the field site, are explored in this chapter.

Part Three (Chapters Five to Eight) consists of the data chapters, made up of some of the key themes that emerged early in the research data; routines, informal / formal, change and power. There were many local themes of significance in the codes I assigned to the ethnographic data, as shown in Appendix Seven. I however concentrate on these four themes / theoretical constructs because, when combined, they provide the basis for an overall picture of the organisation, are important in terms of the high

numbers of ethnographic data passages coded to them, because these are how work gets done at ActewAGL and also because they link various aspects of the organisation. I explore each of these primary themes ethnographically. I then use knowledge taxonomies to highlight the knowledge types underpinning each particular aspect of the social setting, as revealed through the analysis of the data. After analysing the data I was able to find relevant literature to provide theoretical depth to the analysis, some of which includes a number of taxonomies and classifications associated with the theoretical constructs of data chapters. In routines I use Becker's (2003; 2004) classifications of the roles and characteristics of routines, I use in/formal as categories for exploration in the in/formal chapter, in the change chapter I use various typologies of change developed in the literature and similarly in power I use several literature-based taxonomies of power. Although each of the data chapters represents a different aspect of ActewAGL, together they provide an overall picture of the organisation with a number of inter-linkages between them. For example, routines are often informal and so are power relations and at ActewAGL many of the change processes are driven from informal agendas or the need to adapt to the unexpected. The red thread of knowledge provides an interpretive lens for understanding these interconnections. For instance through the use of knowledge taxonomies an observer notes that much of the power at operational levels is actually knowledge-based. Without the application of knowledge taxonomies to observed situations one may be tempted to assume that it was based on authority. The way things get done in ActewAGL is largely based on knowledge-in-action as this thesis shows.

The thesis has multiple layers in multiple areas. Each of the data chapters provides 1) an ethnographic analysis of a particular aspect of the field site (based on it being an important analytical theme found in the data and a useful lens), 2) an exploration of the

theory corresponding to that key theme through the ethnography, 3) an explication of the types of knowledge underlying the particular theme / construct using the methodology the Ethnography of Knowledge. This provides 1) insights into how knowledge is socially constructed and in turn underpins each theme in the social setting studied, 2) allows me to assess how useful and powerful the Ethnography of Knowledge is (or is not) at looking at particular aspects of the social setting and 3) to assess how each of the four data themes (discussed further below and in each of the data chapters) can be studied from a knowledge based social constructionist perspective using ethnography.

Routines (Chapter Five) encompass knowledge and guide the processes and outcomes of organisations, for instance at ActewAGL much of how the work gets done is through routinisation. I have placed this chapter at the beginning of the data chapters as it shows how organisations remember by doing (Nelson and Winter 1982) at a local level, where the other chapters can be abstracted to a broader level. Beginning by providing definitions of routines, the chapter then explores the characteristics and roles of routines as they are presented in the literature on organisational routines. Much of the routines literature is theoretical, however this chapter empirically tests the routines theory from *within*, from the perspective of a full participant in the routines. The chapter shows that when viewed from the perspective of task accomplishment routines are stable, as the literature predominantly states. However, when viewed from within, through participant observation, *how* routines allow the accomplishment of the task or the performative aspect of routines can be quite fluid and changing. This chapter further develops the theory of routines in that it proposes that a) an additional characteristic of routines is that they involve problem-solving, b) contrary to propositions in some of the literature, routines are not self-actuating and carried out without thought, or at least they are only

self-actuating in so far as the task accomplishment is concerned, not in *how* the task is enacted and c) supports the recently noted view that routines do change.

Chapter Six addresses the little explored area of the in/formal organisation. It provides definitions and proposes that where much of the literature polarises the terms informal / formal, at ActewAGL there is a blurring of these. The chapter notes that at ActewAGL much of the organisation is driven informally. This is shown in relation to Logistics Branch but also through ActewAGL as a whole. I contribute a three-mode framework that allows a means of classifying in/formality and provides an exploration of this relationship between the informal relations, interactions, events and processes, the formal, and the way the formal is enacted informally or the informal supported formally. Chapter Six proposes that the way things get done in organisations is at the second mode where the formal and the informal aspects of organisations blur. This chapter also explores further the use of Social Network Analysis and social mapping as a means of understanding the social interactions in the Procurement Section. Many of these social interactions are informal and related to tacitly held understandings of social norms associated with the environment or with know-how knowledge.

Chapter Seven explores the notion of change within an organisation. In this capacity it confirms a number of theories expressed in the change literature. It describes and explores the nature and frequency of change in ActewAGL concluding that ActewAGL is characterised by frequent fragmentary change from both top-down and bottom-up. Despite the fragmentary nature of change in ActewAGL I assert that because of the informally driven nature of the organisation, the stable core business and path dependency, the organisation is able to continue doing what it does without falling into

the pits of dysfunctionality. Instead, the organisation's participants adopt socially constructed coping mechanisms relying largely on internal knowledge and shared mutual understandings. Chapter Seven shows that many of the changes are linked to power relations, to organisational routines, and to the way many of the aspects of the organisation are enacted informally. In the case of change however, the use of knowledge as a lens for providing insights is only partly useful. Change often occurs due to factors that cannot be simply explained by knowledge, but are more personal and often behavioural and the roots of that knowledge and associated actions are often not directly observable.

Just as change cannot always be explained by knowledge, neither does knowledge as a construct always provide a suitable explanation for power relations and use. Chapter Eight begins by defining the abstraction that is power and then discusses power relations in ActewAGL. This chapter uses power taxonomies from the organisational power literature supported by the ethnographic account to explain the types of power present in ActewAGL. It shows that all people have power, irrespective of their position in the organisational hierarchy. Some people choose to use that power differently and this results in a variety of displays of power including legitimate power, control of resources or knowledge and subversive strategies to name a few. Sometimes power helps people to cope with uncertainty, sometimes it causes uncertainty.

Part Four / Chapter Nine concludes the thesis, provides an overall summary of the arguments and reiterates the contributions the thesis makes. It discusses some of the limitations of the research and suggests how this study could be expanded to embrace future research opportunities.

## *1.3 Integration of the Literature*

The integration of the literature in each chapter is dependent upon the use of the ethnographic account of ActewAGL as well as the status of the relevant literature. Each of the data chapters is structured around the ethnographic findings on a particular theme and each chapter, as described above, has a different theoretical basis with its own literature. In order to bring ActewAGL to a position of prominence in the thesis I have deliberately moved away from conventional academic models of producing a literature review chapter or of consistently integrating the literature throughout the chapters. In two of the data chapters the literature is at the front of the chapter, in one it is integrated throughout and in the other it is included to the rear of the chapter. My aim in doing so is to arrange the text in such a way that I am able to develop a more conversational and open tone (van Maanen 1995, p 140) and allow the strength of the data to guide the reader through the literature rather than be dictatorially constrained by it.

In the routines chapter, the literature is self-contained and consistent. My findings generally support the literature and contribute another category of exploration as well as disputing the self-actuating nature of routines. Thus I place the literature to the rear of the chapter as the ethnography takes centre stage. In exploring the ethnography I draw attention to the various theoretical characteristics and roles of routines through the use of italics situated within the ethnographic account and then discuss them individually at the end having allowed the ethnographic account to build up the reader's understanding of the routines from the perspective of a full participant.

In the in/formal chapter I have placed the literature at the beginning because there is very little exploratory literature on in/formal organisations and their relationships, and because I am contributing a framework for viewing the way informality is enacted and / or legitimised. Such a structure places the exploration in the context of a small field of literature and sets those boundaries up front.

The change literature is vast and sprawling with a number of inconsistencies and contradictions, and various theoretical bases. In this chapter I use the literature up front to indicate its vast and convoluted nature and then present the ethnographic account supported by the literature.

The power literature is either quite general or taxonomical, the boundaries between power types are not clear-cut, and power-in-use can incorporate a number of different modes of power. Thus I have integrated the literature on power throughout the ethnographic account to deepen the account whilst simultaneously illustrating the taxonomical examples (again with italics) and how they themselves are integrated with blurred boundaries.

In structuring the thesis thus, I have tried to integrate the literature into each chapter in a way that highlights the ethnographic account of the field site most effectively, makes it stronger, more rigorous and contributes to an overall picture of the Logistics Branch of ActewAGL. I like to think of the thesis as an intertwined rope in which each theory is one strand. How the theory is interwoven into the rope of the thesis depends largely on its relationship to the particular area that I am exploring.

## *1.4 The Purpose and Priorities of the Study*

### 1.4.1 Research Issues / Questions

This research is aimed at exploring what we can understand of the knowledge underpinning the socially construction of particular aspects of the social setting. Although the research is emergent with generalisable conclusions being drawn from the data rather than before it, the thesis nevertheless addresses a number of underlying issues focused on the Ethnography of Knowledge, as well as issues at a secondary level specifically related to the data or theme chapters. Firstly,

- Does the lens of knowledge on an ethnography help to deepen the understanding specific aspects of the social setting?
    - If helpful, how useful is the Ethnography of Knowledge in providing an understanding of aspects of the social setting such as power, change, in/formal and organisational routines?
    - Where, when and how is the Ethnography of Knowledge useful in understanding aspects of the social setting?

At a secondary level the research also addresses issues related to the data chapters these include;

- How valid are the characteristics and roles of routines from the perspective of a full participant in the routines?
- How can informal interactions and processes be viewed in an organisational environment?
- What are the characteristics of change in ActewAGL?
- What are the applications of power in an organisation such as ActewAGL?

### 1.4.2 Aims of the Study

This dissertation sets out to provide an ethnographic account of ActewAGL and in so doing to explore the applicability of the Ethnography of Knowledge as a means of gaining an understanding of the organisational social setting. The aim is to investigate how, where and when the Ethnography of Knowledge is a useful approach in deepening the understanding of the social setting and whether this assists with understanding the theoretical constructs such as routines, in/formal, change and power.

Participant observation is a largely emergent methodology[3] and as such the key themes / theoretical constructs, and subsequent chapters, emerged early in the study. The themes develop a number of further aims. Through the chapters I aim to test routines theory from the perspective of a full participant within the routines, something which although noted as being necessary in the literature has not yet been done. I aim to develop a more thorough exploration of the concept of the informal organisation and its relationship to the formal organisation in a way that has not previously been well covered in the literature. I also aim to explore the characteristics of change in ActewAGL and why despite the fragmentary nature of change at ActewAGL the organisation is not divided and dysfunctional. Finally I aim to explore the use of power in ActewAGL and discover what the applications of the different types of power are.

As a full and contributing member of the organisation, albeit a cheap (free) one, I aim to adopt a confessional tone in this thesis. To this end I often use the first person 'I'. Confessional ethnography seeks to highlight the shared social setting but acknowledges the failings, fallibilities and frustrations of the researcher (van Maanen 1988) as a part of the social environment. I feel eminently qualified to adopt this tone as there were many times I felt inadequate and none in which I felt infallible or superior to my Logistics colleagues. As a full participant I had particular roles, and responsibilities in the work place, affected and was affected by the environment and was in a position to describe the field site according to how I saw and experienced it. Thus I feel it is necessary to adopt a confessional tone.

[3] Participant observation is a qualitative methodology allowing inductive theory building whereby the theory emerges from the observational data, as opposed to deductive theory building where hypotheses are proposed and then subject to empirical scrutiny (Bryman and Bell 2003). I adopted an iterative approach where I moved from a theory focus to a data focus and back again to both build and test theory.

## *1.5 Participant Observation: A Most Magnificent Methodology*

The research issues motivating the study, underpin the core message of this thesis being that participant observation combined with the use knowledge taxonomies is a very powerful and effective way of investigating and exploring different aspects of organisations, such as routines, in/formal, change and power. This is based on the assumption that one can not directly observe knowledge but one can observe the actions associated with knowledge, the understandings of which are socially constructed and produce our social reality (Berger and Luckmann 1966).

This dissertation is situated methodologically within the field of organisational or business ethnographies. Organisations are two or more people acting in a coordinated way to achieve goods or services according to a set of defined goals, in this case business goals. Thus the study is located in the body of literature that uses qualitative methodologies especially participant observation in the study of organisational settings.

Business / work ethnographies are situated in a small but growing field. A recent analysis of existing book length organisational ethnographies in English puts the entire field at only 204 studies (Hodson 2004). Organisational studies, many using observational methodologies have existed since the classic Hawthorne Studies in the 1920s[4] but the popularity of them has waxed and waned (Barley and Kunda 2001) being under-represented for some time (van Maanen et al. 1982). Recently there appears to have been an upsurge in organisational ethnographies (Gellner and Hirsch 2001a). This

[4] The Hawthorne Experiments were conducted through the 1920s and 1930s from 1927-1932.

is presumably due to mainstream recognition of the importance of culture and the social setting, and the strength of participant observation for gaining an understanding of the social setting when it is often difficult, if not impossible, for the participants to articulate and explain aspects of their culture (Barley and Kunda 2001, p 81).

## *1.6 Importance of the Study*

This thesis makes primary methodological, secondary locational and incidental theoretical contributions. Methodologically the thesis is important as it develops and empirically tests a practice-based method of using of both knowledge (taxonomies) as a lens and ethnographic techniques (the Ethnography of Knowledge) in understanding the knowledge underpinning organisational social settings and the social settings themselves, as shown in Chapter Two - Figure 2.1. This has not been done before at a micro level but is necessary given the wide-ranging literature emphasising the importance of knowledge in organisations.[5] The premise is that if in studying social settings the researcher combines the use of ethnographic techniques with the lens of knowledge great insights into the social setting can be gained. This approach is based on the social constructionist view that knowledge underpins all behaviour and action and social understandings are steeped in knowledge and understood tacitly by members (see also Goodenough 1964 and Spradley 1980).[6] Through the use of participant observation coupled with various literature-based taxonomies of knowledge selected for their observability and usefulness, (as discussed in Chapter Three), I found that I am able to illuminate the organisational landscape more effectively, particularly when the

[5] Other researchers have done this using theoretical or bibilometric approaches or through an analysis of patents but all of these methods are somewhat removed from the social setting in a way that ethnographic approaches are not.
[6] Some cultural anthropologists see knowledge as underpinning all the actions and beliefs that make up a culture. Where they would assume this and try and understand the culture, I am trying to understand the knowledge that underpins the actions and thus gain an understanding of the social setting.

knowledge is directly observable / local and the construct is knowledge-based, as in the case of organisational routines or in/formal interactions and processes, or when the observer is close to the source of decision-making. However, the thesis also shows that the use of the Ethnography of Knowledge becomes less efficient for understanding the social setting the further one gets away from the source of the knowledge and thus is not always equally useful in understanding of the knowledge underlying the construction of a particular social setting.

Methodologically this study is important, not only because of the contribution of the Ethnography of Knowledge, because it provides a way of understanding and focusing on the knowledge underpinning the socially constructed social setting but also because ethnographic techniques provide a relatively unexplored way of doing empirical research on knowledge in organisations. Despite the plethora of studies focusing on knowledge in business organisations, few do so ethnographically. Using a combination of numerous knowledge taxonomies methodologically to aid the ethnographic account does not appear to have been explored practically by other researchers at all. Knowledge is heavily discussed in the organisational literature and "the term knowledge has been co-opted to a wide variety of agendas" (Spender 2005, p 101). Yet the literature is often based on a theoretical or epistemological approach to knowledge. The importance of this study in contributing to that field is it provides a practice-based approach to knowledge whilst appeasing the "frequent appeals for empirical research" (Spender 2005, p 103). In a recent paper Spender reinforces the cutting edge nature of this research when he reviews Patriotta's book (2003 reviewed in Spender 2005) which talks about thick descriptions in observing practice and in so doing "gives us new insight in how to do empirical research in a KM frame" (Spender 2005, p 107), and "a profound reassessment of our research methodologies" (Spender 2005, p 116) in the study of

knowledge in organisations. The Ethnography of Knowledge is important because it "drives us toward a major re-evaluation of our research methods" (Spender 2005, p 104) because in order to explore "such aggressive notions as organisational routines …we may need to explore those research methodologies that gain us better insight into systems of social practice among multiple and disparately creative actants" (Spender 2005, p 104). Further the study is important as it contributes a way to test whether a particular literature can usefully be looked at as being knowledge-based and shows that in some instances, such as the power and change literature these constructs are only incidentally knowledge-based.

In addition to the methodological importance, locationally the thesis provides a study of a new field site and contributes to the field of organisational ethnographies. This study is one of very few Australian organisational ethnographies[7] and is the only ethnographic study of the utility company, ActewAGL. As such it contributes a locational study and provides an exploration into Australian utilities. The study is also important because ActewAGL balance being both partially government and partially private owned and because they are one of very few multi-utilities in the world. Finally, the thesis also contributes to a number of chapter-specific theoretical areas.

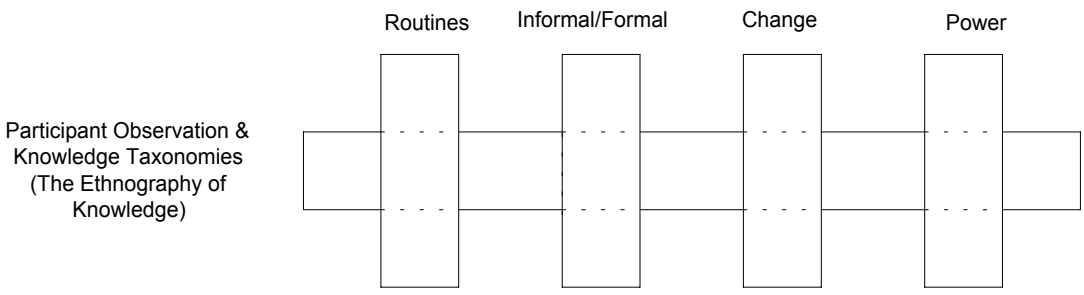
Throughout the thesis I explore a number of significant themes and within these I make a number of incidental theoretical contributions. These themes are important both in terms of their relative importance during analysis and because of the interlinkages between them in exploring and explaining ActewAGL. In this exploration I make a

[7] I have not found any Australian book length organisational ethnographies and this is supported in the comprehensive review conducted by Hodson (2004), however given the growing popularity of ethnographic techniques I would suspect that there *are* studies out there which use ethnographic techniques but perhaps do not list this as a key word.

number of theoretical chapter-specific contributions. In the routines chapter I test the existing routines theories from within the routine and do so from the perspective of a full participant, something that appears not to have been done before. In this capacity, I confirm most of the characteristics and roles of organisational routines, add an additional category that should be included and dispute the theory that posits that routines are self-actuating in nature. In the in/formal chapter I contribute a framework for addressing the way the formal is enacted informally and also attempt to provide a systematic analysis of the informal and formal organisation. In the change and power chapters I provide an ethnographic perspective on these theoretical constructs from the perspective of a participant, noting the characteristics of each in ActewAGL.

The contributions in this thesis are both methodological and theoretical. They are methodological in terms of the use of the Ethnography of Knowledge (Output 2 – Figure 2.2) as a means of understanding the organisation and the underpinning knowledge, but also theoretical in that each of the chapters adds to, confirms or differentiates from existing theoretical bases. This relationship is represented visually in Figure 1.2 below.

**Figure 1.2 Contributions of the thesis**



## *1.7 Limitations*

All studies are constrained in some way. This particular study is limited by a number of factors including the inability to see everything, the choice of particular taxonomies, the inappropriateness of knowledge in some situations or environmental constraints on the taxonomical types, lack of scalability, the overwhelming amount of data collected, and the constraints of time and place in allowing a snapshot view only.

The study itself is limited in that I was only able to observe the immediate environment. Whilst at times I abstract this to the whole of ActewAGL, had I been situated in another area of ActewAGL I would have had a different experience. Not being able to see the whole social environment also impacted on the effectiveness of the Ethnography of Knowledge in explaining the social setting. Abstracting to the whole of ActewAGL makes the Ethnography of Knowledge less effective in exploring macro level issues such as change and power.

In using the most common knowledge taxonomies I have had to limit these and may have inadvertently focused too heavily on a particular taxonomy or even excluded a pertinent taxonomy. The study is limited in that such inclusion, exclusion or compression may limit our understanding of knowledge in an organisational environment. The environment itself also limits and constrains the types of taxonomies included. For instance in the management of the Warehouse an information processing view of knowledge is taken, although the staff tend to adopt more cognitive approaches to the tasks. In this instance the environment results in the incorporation of particular taxonomies.

Knowledge itself is complex and difficult to understand, even with the aid of multiple knowledge taxonomies. This complexity means that if one tries to study / manage knowledge in isolation it rapidly becomes everything and everything can be explained using knowledge. I use knowledge taxonomies in an attempt to provide context for their usage, however in using knowledge as a lens for viewing the organisational environment, there is a risk of simply being unable to understand the social situation because it, like knowledge, is complex and sometimes inexplicable. Thus there are perhaps some aspects of the social system that simply cannot be explained using knowledge, or at least not explained effectively.

The inability of using knowledge concepts to explain all social situations is a further limitation (but also an enlightening contribution) of this study. Upon exploration I discovered that certain aspects such as change and power are not so easily explained by using knowledge concepts as a basis. This is largely related to the proximity of the researcher to decision-making, to whether the issue under study is a macro or micro / local issue, and also comes about because sometimes aspects of the environment and of individual's behaviour are simply inexplicable using knowledge as a means of explanation.

The thesis is limited not so much by the data itself but by the amount of data that the methodology produces. Through the use of observational methodologies triangulated with interviews, document, complexity, discrepancy and Social Network Analyses, I obtained nearly 400,000 words of ethnographic data, from which I was able to identify approximately 250 codes or recurring themes (as shown in Appendix Seven) and over thirty memos. The thesis is thus limited by the need to focus on the more salient points

of analysis and as a consequence there is considerable redundancy and selective use of the data in the thesis.

Just as I needed to be selective in the use of my data, I also needed to be selective in the choice of field site. One of my criteria for selection of a field site was that the observation group needed to be relatively small. The need to be able to observe interactions, events and processes is thus a limitation of the study. The methodology I used is not infinitely scalable and given the constraints of my person would be inappropriate for a large group.

This study provides a snapshot of the environment as I saw it from July 2003 until March 2004. However as with any study of organisations, this study is limited if one assumes an unchanging and rigid view. The organisational environment, like any social situation, represents continually changing coalitions, goals and understandings. Assuming any kind of on-going appropriateness weakens the data because organisations are dynamic and ever-changing entities. Thus this research must always be regarded as a snapshot view only.

It is hoped that this snapshot as it is presented here provides an insight into the organisation that is ActewAGL, the interactions joys and frustrations of the participants and the way the organisation fits into the Canberra community and the Australian context.

# 2 Chapter 2 – Methodology

## *2.1 Introduction*

Participant observation is arguably the most powerful way to look inside a social setting. This chapter discusses participant observation as the primary methodology employed in this research and addresses a number of research issues in the field site of ActewAGL. It situates the selection of the methodology in the literature of organisational ethnographic accounts and discusses how participant observation can be complemented by the use of knowledge taxonomies generally and in the field site. The chapter will then provide a detailed exploration of the methodologies employed in the field site, the limitations and benefits of such methodologies, and the ethical and validation issues. The selection of and access to the field site is discussed, along with my acceptance into the field.

### 2.1.1 How Does a Girl Like Me End Up Doing a Job Like This?

Some years ago as a practicing Knowledge Manager, I found myself undertaking a module of my Certified Knowledge Manager's course using ethnography as a means of gaining an understanding of the knowledge environment. When it came to assignment time the logical choice of location in which to do the prescribed ethnography was the organisation in which I worked. To my great surprise I suddenly found myself being able to 'see' things that I hitherto had only a vague understanding of. I continued as a practicing ethnographer long after the completion of the assignment, through another two organisations in which I was employed, and through my realisation that whist Knowledge Management is a useful concept, it fails to address the real issue behind individual and organisational knowledge – that is the people. What I needed was

something that built on the skills I had acquired in my Master of Business[8], in my Certified Knowledge Manager's Course and something that developed my growing understandings of ethnography. To this end I undertook a Master of Applied Anthropology and Participatory Development at the Australian National University and then took this a step further into my chosen area of interest, the study of organisations, by applying to do a PhD.

After a period of negotiation, described in section 2.4.1, I gained access to the Logistics Branch of ActewAGL. In this capacity I undertook the roles of Procurement Specialist in the Procurement Section and Storeperson in the Warehouse. Thus I was part of the knowledge flows and the collective output meaning that I could not be impartial nor somewhat distant to the events I was observing. Thus this thesis is presented as a confessional ethnography (van Maanen 1988, chpt 4), as described in section 2.5.2.1.

## *2.2 Organisational Ethnography – a Small but Growing Field*

Anthropologists have long studied 'the other' but as Laura Nader raised contemplatively, "what if, in reinventing fieldwork the anthropologist was to study the colonizers rather than the colonized, the culture of power rather than the culture of the powerless, the culture of influence rather than the culture of poverty?" (Nader 1972, p 289). In advocating 'studying up' or studying the powerful bureaucratic institutions that affect our own lives and make up our own society, Nader suggests that researchers have flexibility and opportunities of really participating where such opportunities are limited

[8] Having a Master of Business, a Master of Applied Anthropology, ethnographic experience and experience in numerous organisations meant that my preparation for conducting an ethnographic study was reduced. Rosen (1991, p 15-16) notes that the ethnographer needs to 1) "gain contextual anchoring through schooling in the area of sociocultural studies, … 2) have had some field practice, …3) learn the 'language' of those people he or she has chosen to study,… this means possessing a working knowledge in some of the functional areas of business [possibly even] acquiring an MBA degree [and 4) having]… knowledge of the specific industry he or she is entering." Fortunately, but not randomly, I met all of these criteria.

in so called primitive societies. In this study I have embraced such an opportunity by choosing to study a Canberra based multi-utility organisation.

Organisations being *two or more people acting in a coordinated way to achieve goods or services according to a set of defined business goals*, are powerful institutions of the like Nader spoke of. However, when Nader advocated 'studying up', organisational ethnography was a little explored field. Recently the interest in studying organisations including business organisations using ethnographic techniques has grown to become "a new field of theoretical enquiry" (Ouroussoff 2001, p 35), however the field is still sparse.

This section will highlight some the organisational ethnographic literature, beginning with the historical basis for organisational ethnographies through to recent developments. In discussing organisations the chapter assumes that from an ethnographic perspective all organisations are much the same. So looking at the police, a government organisation or the Logistics Branch of ActewAGL has more in common than comparisons with Papua New Guinean societies. ActewAGL itself bridges the gap between government and for profit organisations, discussed in the ActewAGL chapter of this thesis. The section will then discuss the ethnography as a study of organisational cultures and will conclude by presenting a discussion of the growing application and potential uses for these methodologies in organisations.

### 2.2.1 Organisational Ethnography - Historical Beginnings

The Hawthorne experiments, conducted from 1927 to 1932 (Roethlisberger and Dickson 1939), form the backdrop of much of the introductory literature about organisational ethnographies (Burawoy 1979; Britain and Cohen 1980a; Schwartzman 1993; Wright 1993; Baba 1997; Bate 1997; Buderi 1998). The Hawthorne experiments were the first of the large-scale studies into organisations using a combination of methodologies, including observational techniques. From these studies the Industrial Anthropologists and the Human Relations Group emerged. These groups saw the organisation as being a social setting created and affected by informal and formal interactions of individuals within the environment. They were early advocates of the use of ethnographic methods and provided both theoretical and instructional works on how to use these methods (Chapple 1941; 1949; 1949b; International Symposium on Anthropology 1953) as well as ethnographic accounts of organisational settings (Roethlisberger and Dickson 1939; Whyte 1948; Roy 1954; Sayles 1958; Whyte 1961).

### 2.2.2 Organisational Ethnography – Recent Developments

Although organisational ethnographies have a long history, these have not been engaged as the mainstream way of studying organisations and organisations have not been the mainstream focus of ethnographic accounts. Recently there has been an increase in the number of social scientists undertaking fieldwork in organisations, as shown in a number of reviews of ethnographies (Burawoy 1979; Baba 1997; Bate 1997; Pant and Alberti 1997; Hodson 1998). We know from occasional mentions in the literature that many large multinational organisations such as Xerox, BMW, GM, Andersen Consulting, Nynex (telecommunications), Intel, IBM, Nestlé, Daimler Chrysler, Motorola, and Hewlett Packard employ organisational ethnographers to look at the

culture/s of their organisations and to make recommendations about how the social interactions between people in organisations can be better utilised for improved operations. Yet most of these ethnographers do not produce commercially available ethnographies. Presumably the ethnographies they produce are for internal usage or are deemed commercial-in-confidence and thus are difficult to publish (Gellner and Hirsch 2001b, p 10). There are a number of anthologies of ethnographic studies of organisations (Jones et al. 1988; Gellner and Hirsch 2001a), some of which concentrate on specific occupations or work environments (Barley and Orr 1997) or on constraints such as time or machines (Dubinskas 1988). Within these anthologies there are concentrations of studies in particular areas such as ethnographic studies of laboratories (Traweek 1988; Scarselletta 1997; Hine 2001), groups such as engineers (Latour 1987; Bucciarelli 1988; Bucciarelli and Kuhn 1997; Perlow and Bailyn 1997) or people working in environments such as health / emergency response (Nelsen 1997; Pinch et al. 1997; O'Neill 2001; Parker 2001; Pulman-Jones 2001). In accordance with this view, "most [organisational ethnographers] limit themselves to journal articles and conference presentations; to short snapshots of organisational life, …[even though these] formats do not provide sufficient space for introducing the under-analysed and the problematic aspects of a culture" (Rosen 1991, p 19-20).

The overall literature reveals very few ethnographic studies of organisations, although this may be increasing. This dearth of published ethnographies is recognised by other writers, Bell notes that "in business and management studies it is rare to find published personalised accounts of fieldwork experience" (1999, p 18). Hodson (1998) conducted a review of organisational ethnographies and discovered that there were only 108 published book length, English language ethnographies of work organisations, although in 2004 when he updated the data he found there were 204 (Hodson 2004). As Hodson's

time frame was from 1947 there might be additional numbers in the previous or ensuing years, however his work provides an empirical measure of both the rarity and the recent increase in organisational ethnographic accounts. Yet many of these accounts are still well hidden. Rarely are they presented as an ethnography or commentary in their own right, often forming parts of anthologies or single journal articles. Notable exceptions can be found in work stemming from Xerox Parc. Julian Orr's work *Talking about machines* (1996), for instance, provides the often quoted example of an ethnographer following service technicians around to gain an understanding of what they 'really do' and noting that what they actually do is exchange stories rather than necessarily following a rigid regime associated with the company procedures. Lucy Suchman (1987) also published a book length ethnography based on her work at Xerox looking at the way people interacted with the machines. Such a work raises the profile of the ethnography of work organisations.

I feel that raising the profile of ethnographic accounts of organisations is an important function of much of the literature in this field, either in an introductory sense or in providing a more theoretical overview. A number of introductory works are designed to be just that – introducing the concept of organisational ethnographies or using methods common in the social sciences for gaining an understanding of organisations from within. As such they often present a fairly superficial view of organisational ethnographic methods, do not go into a great deal of depth, do not discuss methodological or theoretical issues and do not concentrate on one case study example but often refer briefly to a number of studies that have been undertaken (Wright 1993; Aguilera 1996; Davenport 1996; Kane 1996; Bate 1997; Buderi 1998; Koerner 1998; Walsh 2001). Unlike many of the ethnographies of organisational situations often these

works are journalistic in style rather than being actually written by social scientists themselves.

### 2.2.3 Observational Techniques in the Study of Cultures

How do ethnographers study organisations? Participant observation is a powerful way of studying social settings, and is easily adapted to the study of organisations. The overall aim of participant observation is to describe a culture (Spradley 1980, p 3), be that the culture of the tribes of Papua New Guinea or the cultures that reside in organisations. Writers such as Clifford and Marcus (1986) and Geertz (1973) explore the underpinning theoretical constructs of ethnographic techniques, and organisational ethnographers build on their work to suit their own needs (Baba 2001, p 184). A number of authors have written instructional works explaining how to undertake ethnography in organisations (Jones 1988; Schultz 1995; Carspecken 1996; Bell 1997), however "the major manuals on techniques for conducting fieldwork have primarily consisted of collected essays discussing theoretical problems rather than the data gathering techniques themselves" (Rosen 1991, p 13). In general organisational ethnographers describe their methodology as part of the ethnography (Schwartzman 1980; 1981; 1989; Orr 1990; 1996; Hatch 1997; Schultze 2000; Yonay 2000; Baba et al. 2004).

With the 1980's introduction of 'culture' gaining prevalence in the management literature (Fox 2002), there appears to be more incentive to utilise participant observation in organisational studies (Pant and Alberti 1997, p 7) and a subsequent increase in organisational ethnographic accounts. There has also been an increase in general works discussing organisational culture/s (Smircich 1983; van Maanen and Barley 1985; Martin 1992; Schein 1996). Others provide a comparative study of

organisational cultural differences (Hofstede et al. 1990) or discuss differences based on national cultures (Ferraro 1994; Baba et al. 2004) or historical path dependence (Baba 2001). Other works provide a framework for investigating workplace culture and subcultures (Louis 1985; Smircich 1985; van Maanen and Barley 1985; Sackmann 1991; 1992; Trice 1993). As a result of attempting to present cultural analysis in solid almost scientific terms, some of the works in this area often present a somewhat formulaic or checklist approach (Frost et al. 1985; Schultz 1995; Dalitz 2002), which assists the novice in conceptualising culture in the organisational context.

### 2.2.4 Organisational Ethnographies and the Wider Socio-economic Environment

All organisational cultures are studied within and are affected by the wider socio-economic environment in which they sit (Gellner and Hirsch 2001b, p 4), however most organisational ethnographies spend little time discussing the environment external to the organisation under study (Warner 1973; Christensen 1988; Brown 1991; Wright 1993; Yonay 2000; Suchman 2000a; 2000b). Some writers are enviable in their ability to situate their study in the wider environment by showing for instance, the pressures that the war put on the restaurant industry (Whyte 1948) or a factory environment embroiled in the midst of social and political change both nationally and locally (Kapferer 1972). Others carried out observational work in an environment largely formed by the wider environment. Hanford (1988) undertook his study whilst working for a utilities company during the coal crisis of the early 1970s and Barley and Kunda (2004) studied contractors in IT (the increase in which occurred due to the rise in dot-coms). Others worked in situations which were the products of recent times; a mental health centre, created through a government grant aimed at funding community health services (Schwartzman 1980; 1989; 1993), a sexual health clinic dealing with AIDS victims and

people affected by other sexually transmitted diseases (Parker 2001) or the organisations associated with the divorce process (Simpson 2001).

### 2.2.5 Flexibility: The Hallmark of Ethnography

One of the strengths of ethnographic analysis is flexibility. Ethnographic techniques can be used in a number of different fieldwork settings for different purposes (Ferraro 1994). Examples of ethnographic accounts range from educational sites (Carspecken 1996), to an analysis of the police force (van Maanen 1982), from the stock exchange (Abolafia 1998) to a study of thanksgiving feasts (Arnould and Wallendorf 1994) to big corporate organisations such as Xerox (Suchman 2002). The methodology encompasses studies in settings traditional for social scientists (Ellen 1984a) through to ethnography in familiar settings (Spradley 1980; Sarsby 1984) and from quick ethnographic studies (Handwerker 2001) to longer fieldwork stints, as debated by various authors (Brown-Glick 1984; Hicks 1984; Ellen 1984a). Observational techniques provide adaptability in that they can be applied to different situations but they are also the preferred methodology for many people because they enable a relatively subjective "native point of view" (Barley and Kunda 2001, p 84). In a work setting this allows an appreciation of the meaning of work and of the work practices, an appreciation which even insiders may not have (Barley and Kunda 2001, p 84).

### 2.2.6 Present and Future Potential for Organisational Ethnographies

Despite the drift away from ethnographic studies of work in the 1960s and 1970s, (Barley and Kunda 2001) a recent revival of interest in this area has seen ethnographic techniques being applied to different organisational circumstances and employed for a variety of purposes. Ethnographic applications can be applied to understanding

intercultural communication and advertising (Ferraro 1994), work place cultures, to supporting strategic planning initiatives (Pant and Alberti 1997) and for marketing purposes (Arnould and Wallendorf 1994). People skilled in social science methodologies are becoming more in demand in business and organisational settings. Indeed, in 1998 more than 40% of the practicing anthropologists in the USA outside academia consulted to the business world (Koerner 1998) in the areas outlined above, or in particular disciplines or fields of study.

Discipline specific studies benefit from observational methodologies. For instance, ethnographic studies have recently been used to develop the change management literature and show the continuous nature of change in organisations (Tsoukas and Chia 2002). Avison & Myers (1995) argue that important insights can be gained by adopting an ethnographic perspective on the implementation and assessment of information systems particularly in terms of relationships between information technology and organisational culture. Ethnographic studies are indeed more frequently being used in Information Systems, particularly from the perspective of human interaction with technology (Suchman 1983; Barley 1986; Brown 1991; Barley 1996; Orr 1996; Suchman 2000a; 2000b; 2002). Marketing is another area to benefit from ethnographic methods (Pant and Alberti 1997, p 11) and subsequently the methodology is gaining increasing prevalence in this area (Arnould and Wallendorf 1994; Myers 1999; Harper n.d).

Some studies have moved from addressing a discipline to a specific aspect of organisations, often with a problem-oriented research focus (Baba 2001). For instance a study closely related to my own compartmentalises the study of the organisation and addresses information in relation to decision-making and knowledge use in

organisations. Schultze focuses on the work associated with producing informational objects, an activity central to knowledge work (Schultze 2000; Schultze and Boland 2000).

Similarly, Schwartzman (1989) narrows the study from discipline to the organisational event of the meeting, which she uses as a way of analysing the organisation and the bureaucratic context in which it sits (Schwartzman 1980). Britain and Cohen's book *Hierarchy and society: Anthropological perspectives on bureaucracy* (1980a) also moves from a discipline to the study of bureaucracy (Britain and Chibruk 1980; Britain and Cohen 1980b). The applications are wide, varied and increasing.

## *2.3 The Ethnography of Knowledge and How I Test It*

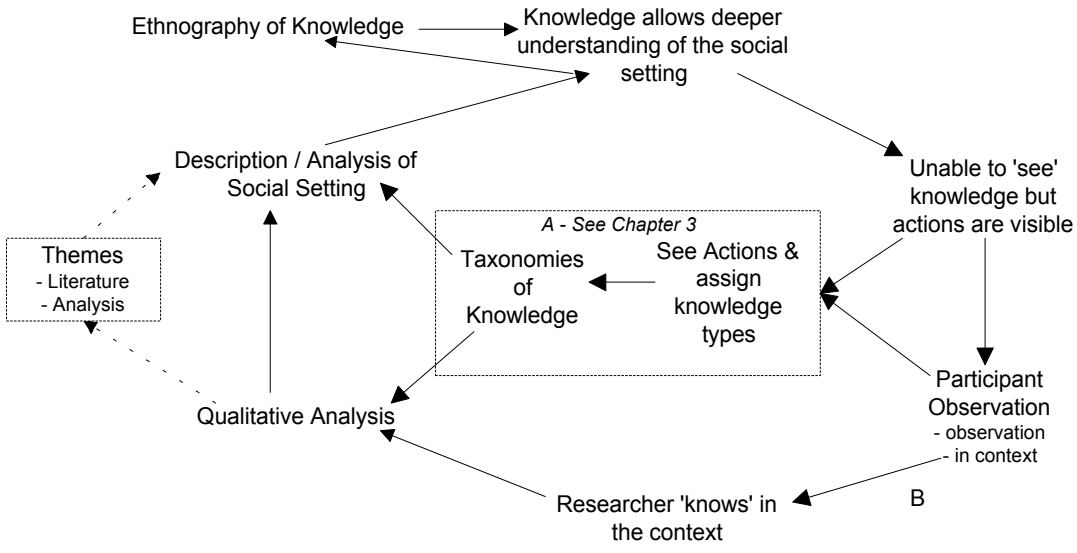
The contribution of this thesis is largely methodological. It aims to test the usefulness of combining knowledge taxonomies and ethnographic practices, the Ethnography of Knowledge, in an organisational setting as a means of gaining a greater understanding of the social setting and the knowledge underlying the construction of the social setting. In this it provides a practice-based view of organisational ethnography (Baba 1998).

The Ethnography of Knowledge is similar to Barth's (2002) theory of the Anthropology of Knowledge, but provides a practice-based methodological means of operationalising the theory. Barth proposes that since "knowledge provides people with materials for reflection and premises for action …[and] actions become knowledge to others only after the fact" (2002, p 1), by using knowledge as a basis for explanation opportunities exist to improve our understanding of the social setting. The Ethnography of Knowledge operationalises this through a practice-based approach where the

ethnography is supplemented with a series of knowledge taxonomies to allow a better understanding of the knowledge underlying the socially constructed reality.

The logic behind the Ethnography of Knowledge is based on reality being socially constructed, and the premise that knowledge underlies all actions; actions are observed by others who react and act on what they see, so creating a collective reality. This causal and interlinked relationship between concepts is represented visually in Figure 2.1, below. The Ethnography of Knowledge uses a number of different knowledge taxonomies, as outlined in Chapter Three, to look at the knowledge behind actions and to deepen understanding of the social setting. By observing the actions of individuals and groups in a social setting it is possible to abstract some of the socially held understandings, to 'see' the knowledge-based reality of the social environment (Berger and Luckmann 1966). The method then allows you to understand the underlying knowledge behind the social situation.

**Figure 2.1 Testing the Ethnography of Knowledge**



As can be seen above, the use of the knowledge taxonomies is a parallel contribution to the ethnographic process, adding to it and testing the usefulness of the Ethnography of Knowledge. That is, my contribution (the Ethnography of Knowledge) combines the knowledge taxonomies (A) with traditional ethnographic approaches (B) from the perspective of a full participant (see also Figure 2.2).

The above figure represents the underlying logic of the Ethnography of Knowledge and alludes to how it can be tested as a method. The base assumption of the Ethnography of Knowledge is that all knowledge is socially constructed and that therefore understanding the knowledge evidenced in a social setting will allow you to gain an greater understanding of that setting. This premise, illustrated at the top of the figure, follows on from the research question shown in section 1.4.1 (Research Issues / Questions); does the lens of knowledge on an ethnography help to deepen the understanding of specific aspects of the social setting? Yet, as shown on the right hand side of the figure, we are unable to 'see' knowledge, but actions are visible. Actions can be viewed in a social setting using participant observation or observation in context (bottom right of the figure). From the researcher's understanding of the social context she is able to conduct qualitative analysis (bottom left of the figure). In parallel with this process it is possible to assign knowledge types or knowledge taxonomies (middle box) to the ethnographic analysis, so assisting with the analysis (bottom left of the figure). The ethnographic observations and the knowledge taxonomies then allow a further explanation or description of the social setting (left hand side of the diagram).

The final phase of the Ethnography of Knowledge, and the closing of the causal loop (top of figure) occurs in testing the appropriateness of the method. If one is able to

assign knowledge types that underpin the socially constructed actions in the social setting, then it follows that the methodology is appropriate for understanding the knowledge and thus the actions in the social setting. If the underpinning knowledge remains elusive when assigning knowledge taxonomies to the ethnographical findings then one is able to conclude that the Ethnography of Knowledge is less effective. In this thesis at the end of each of the data chapters and in the conclusion I assess the relative ease of assigning knowledge taxonomies and whether they assist with understanding the causes of actions. I conclude that having done this in assessing routines, informal / formal, change and power that the methodology is not equally useful for all aspects of the social situation. For instance in change and power the knowledge taxonomies assigned to the actions do not explain why particular actions are occurring, possibly because of the proximity of the ethnographer to the initiating actions. In contrast routines and informal / formal relations, events and situations are much more observably knowledge-based and thus appear to be easier to explain using the knowledge underpinning the social actions.

## *Research Setting*

### 2.3.1 Selecting the Field Site

Like many organisational researchers, I found the period of negotiation for entry was long and tedious but that acceptance into the field once permission was granted was almost immediate (Schwartzman 1989; 1993; Schultze 2000; Suchman 2002).[9] Baba notes that "one of the most difficult aspects of conducting anthropological [or ethnographic] studies in organisations is the problem of access" (2001, p 205). I spent some months seeking an appropriate field site that met my requirements of being

[9] Although I was lucky in the choice of my field site, a number of authors do discuss the volatility of entry into the field site and some even experience failures. (For examples see Steele, Berg & Lewicki and Alderfer in (Mirvis and Berg 1977).

prepared to accept a participant observer, having private sector ties, being a small to medium sized study area, valuing people and of having internal and external clients.

Unfortunately, due to the nature of organisations, I initially found it difficult to find a suitable location. A number of people / organisations expressed interest but in the end were reluctant to commit to having a researcher in their midst. I approached and had discussions with various organisations. Most people were quite interested but in the end claimed a number of reasons for not having me in the organisation, including that they didn't have any space, that I couldn't be justified in terms of cost-benefit and that what they did was simply "too secret".

Eventually I approached a colleague I had once worked with at ActewAGL.[10] I knew this particular manager to be very personable and prepared to try new things. She was immediately interested and provisionally agreed to allow me to access the field site[11], subject to discussions with her colleagues, the human resources and legal areas. Within two weeks she had the required approval. It was agreed that I would be allocated a role in the organisation so that I could truly be a participant observer; a participant-as-observer (Bryman and Bell 2003, p 324). The fieldwork would last for approximately eight months from July 2003 until March 2004[12], would include an initial stint in the Procurement Section as a Procurement Specialist and then if I chose to I could be

[10] This person had shown my team some kindness in removing us from the freezing Warehouse in the midst of a Canberra winter when we were working there on another, unrelated ACTEW project some years before.
[11] I was fortunate in that the access granted to me at the beginning of the fieldwork did not change. A number of organisational ethnographers do however report that sometimes informants or key players in the organisation refuse access whilst the fieldwork is in progress. As Gellner and Hirsch note, "access is [often] therefore not something to be negotiated once and then forgotten about. … It is, on the contrary, something to be both scrutinised for the way it transforms the research and continuously negotiated throughout the time of fieldwork" (2001b, p 5).
[12] I extended the research period by two weeks at the end, thus the total period was eight and a half months.

transferred to the Warehouse, where I would work as a Storeperson, subject to completing the required safety training and the acquisition of high visibility clothing and steel-capped boots. It was agreed that I should be honest about my role as researcher in the organisation. Like Schultze, I believe that "the promise of visibility, legitimacy and prestige that the research activities of a PhD student" (Schultze 2000, p 9) offers meant that access was more easily obtained, and as I said the innovative management style of my contact, also helped. I also possessed other skills such as knowledge of intranet content management and thus was also utilised in this capacity. In the field site I was seen as a valuable (or at least vaguely useful) member of the team – not just a researcher. Further, my role was not seen as a change initiator and my informants were willing to participate but were not overly motivated with the reasons for the study (Schein 1987 [1985], p 393). This situation may have also aided my acceptance in the field in that the participants didn't feel that I was looking at them personally in an attempt to change them.

### 2.3.2 The Field Site

As discussed in the ActewAGL chapter, "ActewAGL is an electricity, natural gas, water and sewerage services utility that is based in the Australian Capital Territory. Outside its home base, ActewAGL sells electricity in the south-east Australian contestable market and provides skilled services elsewhere in Australia and overseas" (ActewAGL 2003b).

ActewAGL employs approximately 1000 people located in a number of different sites and across a number of different divisions incorporating Energy Networks, Water, and corporate functions.

I conducted my fieldwork in the Logistics Branch, which nominally sits in the organisation chart under Energy Networks Division, although they serve the entire organisation and are across the entire supply-chain. The Logistics Branch, located in the Canberra industrial suburb of Fyshwick, employs approximately thirty people and is responsible for Purchasing, Accounts Payables, Contracts, Warehousing and Inventory Control.

### 2.3.3 Researcher's Role in the Field Site

The ethnographic literature in the context of organisations rarely consists of personalised accounts of fieldwork in organisations (Bell 1999, p 18), yet those that do usually highlight the need to have a specific role within the organisation. Lupton insists that it is only through "tak[ing] a job as a worker, openly declaring [himself] to everyone as an investigator and then los[ing himself] in the work group" (quoted in Bell 1999, p 22) that it is possible to become a true insider in an organisational context. Watson (1994 cited in Bell 1999, p 22) notes that it is difficult to attain insider status without directly participating in the affairs of the social group.[13] Whilst recognising the value of participation, Van Maanen (1982; 1988) adds a touch of realism by noting that the ethnographic data is highly dependent upon the setting, gaining access to people willing to share their knowledge and on the researcher themselves. I was fortunate in that I had both a role and access to knowledgeable people. Such social relationships are key to successful fieldwork (Coffey 1999, p 39).

[13] Many organisational researchers approach their research as observers of participants rather than participant observers. I hoped as direct participant that I would "be able to give a more incisive account of organisational social processes and structure than by being merely an observer" (Rosen 1991, p 16).

In the Procurement Section I worked[14] (although without pay) as a Procurement Specialist. In the Warehouse I assumed the role of Storeperson. The duties in each role were defined by position descriptions and were similar to those of the other Procurement Specialists and Storepeople. Like my colleagues I had particular tasks to complete each day, and worked a full day. Unlike my colleagues I also attended all the meetings that were held in the Branch, including the expediting meetings, section meetings and the monthly management meetings.

### 2.3.4 Timeframe

The fieldwork was conducted over an eight and a half month period between July 2003 and March 2004. For that period, I worked a four day week and spent evenings and the other three days writing up my notes, coding my data, and doing analysis, as will be discussed later in this chapter. I took a week 'off' in November to conduct some preliminary analysis – a period that helped me clarify that I was on the right track, identify holes in my research and allowed me to refocus.

The research was intensive, although as with many studies in organisational settings, it was shorter in duration than anthropological studies in traditional societies. I had the advantage of not having to learn an unfamiliar language, of being familiar with business organisations having worked in many and having a Master of Business as a starting point and because as a 'worker' rather than the fieldwork being a 24/7 endeavour, one has some 'leisure' time in which to conduct analysis whilst in the field. As David Hicks (1984) notes, the length of time in the field will vary according to the problem and the situation. Bell, for instance, undertook a study that "totaled six months, split between

[14] That I worked without pay seemed to be a big selling point. The Branch Head mentioned it a number of times at my farewell morning tea.

…two organisations and punctuated by some work time … at the University" (1999, p 19), Christensen (1988) undertook fieldwork in organisations for six months, Schultze was "in the field over an eight month period" (2000, p 10) and Kapferer (1972) was in the field for ten months. These are typical of the amount of time researchers spend in organisations, it seems that the only exceptions are those researchers that are actually employed by the organisation over a long period of time (Mirvis 1985; Hanford 1988; Orr 1996; Suchman 2002). Naturally the amount of time spent in the field is determined by the nature and goals of the study (Baba 2001, p 203). My eight and a half months was dictated largely by my data. It was originally intended that I should stay for eight months but I extended this by two weeks to tie up some loose ends with my data and finish the data collection. The enticing prospect of having a free worker for a couple more weeks meant that extending the time of my fieldwork was not an issue for my host field site.

### 2.3.5 Acceptance in the Field Site – "She is a sideshow freak!"

"No matter what role one tries to adopt in the fieldwork situation, in the beginning informants will make sense of the researcher in the way they make sense of all other strangers who appear and begin to ask too many questions" (Schwartzman 1993, p 48). As it turned out for me, the systems and processes were quite complex and the first week or so, (and indeed for some months afterwards) involved intensive informal training and thus it was quite permissible to ask too many questions. As a researcher I was able to adopt the stance of newcomer, allowing me to orientate myself and find a niche in the organisation that was acceptable (van Maanen 1977).

Although my colleagues were aware of my status as researcher, I was treated as a newcomer not as a researcher and they did not seem to visibly alter their behaviour. At first I self-consciously felt that I was being observed as much as I was observing my informants (van Maanen 1982, p 110; Bell 1999, p 26). Yet it was only later that I realised that despite not noticeably altering their behaviour, my colleagues were also self-conscious although unable to sustain these feelings for any length of time. Some months later a couple of informants noted that it was funny watching people for the first two days after my arrival, people would apparently begin behaving as usual and then notice me and check themselves in an effort not to "get into Tracey's book", they also noted it didn't last long and that they accepted me quickly.

I personally felt that my integration into the field was relatively quick. This is possibly due to the fluid nature of organisations and the regular addition of new team members, in a variety of roles and guises, coming into their midst to undertake short term projects. My background and experience in organisations, in both management and operational roles, my previous experience with ActewAGL and my previous rapid acceptance in unusually defined positions[15] also meant that the induction / trust building period was quite quick. Eventually I acquired skills that I could offer to the organisation and was deferred to as a colleague. This is evidenced by the fact that half way through my fieldwork when a colleague from the Facilities Management Branch went on holidays I was employed by that section for two days a week to do her job, on the recommendation of one of the Team Leaders in Logistics. This role continued on a day-a-week basis after the completion of my fieldwork and weekly during that period my colleagues from Logistics would ask if I could come back, "this time we'll even pay you" being their

[15] Such as, 'Knowledge Manager' or consultant employed to 'translate' from Librarians to the outsourcers.

plaintive cry in an effort to convince me to return. This phenomenon of acceptance is often reported by ethnographers in organisations, particularly those with skills in the area (Hanford 1988; Schwartzman 1989; Orr 1990; Orr 1996; Bell 1999; Schultze 2000). In true Australian style, my acceptance in the field was made real for me when I acquired my florescent yellow clothes in preparation for my stint in the Warehouse. I stood by while a couple of colleagues discussed the possibility of coming into the Warehouse in order to stare at me in my new wardrobe, one of them said "now now don't treat her like she is a sideshow freak", to which my colleague lovingly replied (at least I took it that way), "Ah, but she is a sideshow freak!"

### 2.3.6 Ethics

"The biggest problem in conducting a science of human behaviour is not methodological but ethical" (Bernard 1994, p 17), but "all anthropological research [indeed all research involving humans] involves ethical challenges" (Baba 2001, p 206). Having received clearance from the University ethics committee, I was careful to get all informants to sign the consent form (see Appendix Five) before interviewing them. This and the information sheet I had prepared assured them of their rights, of my commitment to confidentiality, of their freedom from harm and of their ability to say things 'off the record' (Mirvis 1985; Miles and Huberman 1994). The participants were all aware of my status as a researcher having been informed by the manager before I arrived and then being informed again when I did arrive and was introduced. My acceptance in the field was rapid and so complete that I feared that my colleagues were unaware of what I was doing. I was relieved on the third day when my research was outlined at a staff meeting. Until then I had been concerned about the way the

behaviours of my colleagues did not seem to be affected by my presence, as shown in this extract from my personal journal.

> "I wonder how aware of my position as a researcher these people are. I think they know intellectually but don't necessarily connect my asking questions. I also wonder if I am coming across as an idiot - asking all these questions. I guess at the moment I can make the most of my position as the new kid on the block." (Journal entry 8 July 2003)
>
> "I worry a bit that my status as researcher hasn't been elaborated on or explored by anyone. I was prepared to do so but haven't been called to defend my position by anyone. Has it been explained to them? Are they just nonchalant about it?" (Journal entry 9 July 2003)

And then finally,

> "I was thrilled today because one of the auditors approached me. He noted that I was a PhD student – apparently [one of my informants] had been skiting that they have a PhD student. …I was also gratified and had some worries alleviated when [one of my colleagues] mentioned that she was going to the temple on a retreat "to observe the monks, just like [I] observe them". [And then]…I was introduced (formally) at the meeting today and my research was outlined in broad terms." (Journal entry 10 July 2003)

Despite my initial concerns there were no other ethical issues, although I was always aware of my status as researcher and of the associated obligation to protect my informants, respect their privacy and not reveal anything that they said that could get them in trouble. I was aided in this by the fact that I like and respect my colleagues as people and as professionals and did not have the issues some researchers experience where they are unable (or ethically not supposed to) get involved in the observed events (O'Neill 2001). Also because of my background I could identify with both those in more senior positions and also people at the operational levels.

I was fortunate in the choice of my field site, in that ActewAGL Logistics Branch is not dysfunctional. In some other organisations where I have done this kind of work the ethnographies proved unpublishable because they were so damning.[16]

[16] Ethnographies I have done in some previous organisations in which I have worked have sometimes clearly shown the inability of the organisation to function or the dysfunctional nature of some bosses. Given the ANU's human ethics policy, some of the organisations where I have undertaken an ethnographic analysis as part of my job would have blocked the thesis. ANU's human ethics policy is primarily concerned with protecting research subjects, which in medical research (upon which the policy

## *2.4 Methodology*

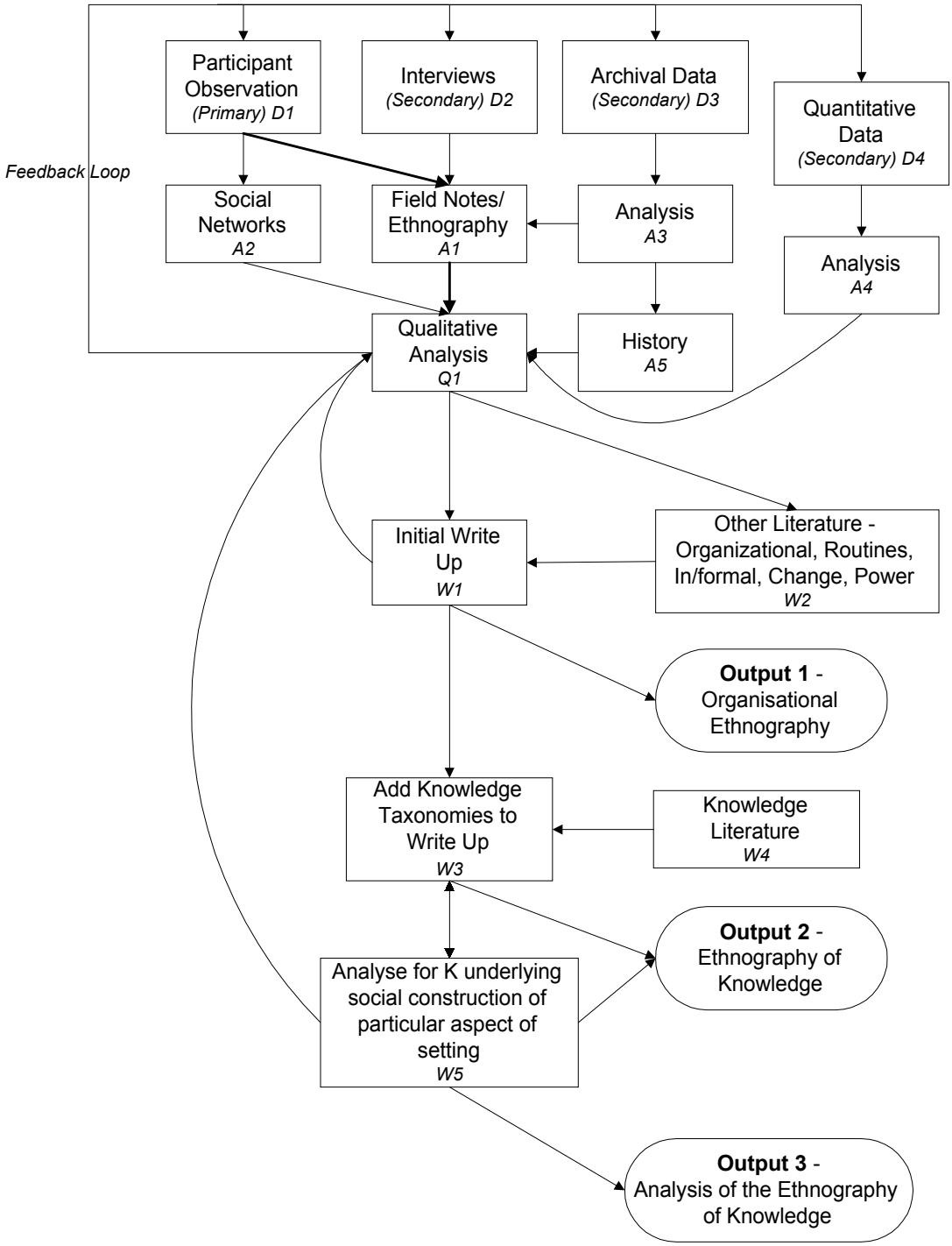
Qualitative methodologies are becoming more prevalent in the study of organisations (Ott 1989), particularly since they reveal organisational behaviours, interactions and cultural norms that are often unconscious and tacit to organisational participants. Such methodologies are increasing although have not been extensively used in research in organisational settings (van Maanen et al. 1982). This study primarily uses qualitative methodologies, however because the distinction between the two is sometimes ambiguous (Bryman and Bell 2003, p 25), I occasionally use basic quantitative techniques (such as in the discrepancy analysis) to supplement my qualitative data.

Figure 2.2 below, shows diagrammatically (in abstract terms), the methodological processes I employed in conducting the study.[17] The specifics of how I did this are outlined in the following sections of this chapter.

was originally based) involves avoiding physical harm, but in organisational ethnographic studies is open to interpretation. I also adopted an open attitude to my research trying to understand the informant's view of their situation, which in ActewAGL was largely positive. In some previous roles I have had it would have been suicidal (personally and professionally) to reveal that I was doing an ethnographic study, let alone trying to publish the results.This doesn't devalue ethnographies in organisations with unfavourable characteristics, indeed these make for interesting reading and analysis. I was however fortunate in seeking feedback from my informants as I went in that my analysis was grounded in their own understandings of both their strengths and an acceptance of their weaknesses.

[17] The numbers assigned to each of the boxes are used as identifiers in-text and represent the different phases of the methodology.

**Figure 2.2 Overview of Methodology Used**




My primary data collection method was participant observation supplemented with secondary methods. Participant Observation (D1) from the perspective of a full participant formed the main method of data collection for this study. Secondary data

included interviews (D2), archival (D3) and quantitative data (D4) to supplement my understanding and complement my fieldnotes.

In the analysis phase I processed the data using a combination of various methods with my main analysis being qualitative (Q1). As part of the analytical process I primarily produced a series of ethnographic field notes based on thick descriptions of the daily events, processes and interactions, and other supplementary data (A1). Using data gained from Participant Observation (D1) and validated through interviews (D2) (as discussed later), I was also able to create social network maps (A2). All of this data I supplemented with an analysis of the archival data (A3), which fed into the ethnographic notes (A1), and also allowed me to create an organisational history (A5). This historical context formed a large part of Chapter Four, which is specifically designed to provide a contextual account of the historical milieu of the organisation. The analysis of the quantitative data (A4) I also fed into the qualitative analysis (Q1). The secondary data analysis allowed me to triangulate and validate the previously gained data, codes and results (Miles and Huberman 1994; Bryman and Bell 2003).

The results of the core, qualitative, data analysis (Q1) fed back into the data collection methods (D1-4) and allowed for supplementary and triangulatory data to be collected until saturation was reached. For example, having observed the social interactions (D1), created a social network map (A2) and analysed the interactions (Q1), the feedback processes (feedback loop on the left hand side of the diagram) allowed me to seek clarifications of my assumptions with my informants through asking additional interview questions (D2). Their responses formed part of my ethnographic notes (A1)

and was then subsequently reanalysed (Q1), and so forth for all of the processes in the upper third of the diagram until I reached saturation (Glaser and Strauss 1967).

The write-up phase both followed and paralleled the data collection and analysis phases, feeding back into it as discrepancies, holes and contradictions became apparent. Using a grounded theory approach (Glaser and Strauss 1967) to the data certain significant themes emerged from the initial qualitative analysis (Q1). When looked at together these themes formed an overall picture of ActewAGL showing how the work got done, and thus I chose to explore these data themes (codes) as the basis for the write up of the four data chapters (W1). Exploring further I found that there was an extant literature for each of the four most prominent data themes. These literatures (W2) were then used to complement the data and analysis, and provided a theoretical basis to the write up (W1) for each respective chapter. The write-up of the data (W1) resulted in **Output 1** – an organisational ethnography of ActewAGL, based primarily on participant observation (D1) and the other secondary data sources (D2-4 and A1-5). As I explored further issues and holes in the relevant literatures emerged feeding back into further analysis, and allowing some theoretical contributions. Thus this phase produced not only an ethnography of ActewAGL but also explored aspects of the literature from the perspective of that ethnography, providing an ethnographic, locational and some theoretical contributions.

Using the initial write up (W1) as a base I added prominent knowledge taxonomies from the knowledge literature (W4)[18] that I felt underlay particular aspects of the field site. The aim of this was to be able to gain an understanding of the knowledge underlying the

[18] Not specifically the Knowledge Management literature but various knowledge based literatures generally.

social construction of particular aspects of ActewAGL (W5), in relation to the four thematic areas of exploration (W2). This resulted in W3 and **Output 2** – what I call the Ethnography of Knowledge, as discussed in section 2.3 of this chapter. Again the Ethnography of Knowledge feeds back into the qualitative analysis thus allowing a further level of analysis. The Ethnography of Knowledge (**Output 2**) is a methodological, and my main, contribution.

The final phase of the methodology assessed the usefulness of the Ethnography of Knowledge (W5), resulting in **Output 3** – an analysis of the Ethnography of Knowledge. This phase assessed the usefulness of using knowledge as a lens for interpreting the observed actions in a social setting and also does so in relation to the four data themes. This particular output / contribution has been previously discussed in section 2.3 and Figure 2.1 of this chapter. **Output 3** is an assessment of the usefulness, or not, of the main contribution I have made, the Ethnography of Knowledge.

This diagram emphasises the various phases of the study and shows how the processes feed back into one another. Through this diagram I show that the ethnographic data and its subsequent qualitative data analysis formed the basis of the study and that this process was iterative and reflexive (Bryman and Bell 2003). Each of the outputs has at least two layers of analysis and all of the phases of the study feed back into further analysis. All theoretical literature, knowledge or organisationally based, came into the study retrospectively as part of the write-up. The literature, like the data, was used in the reflexive and iterative research process, both guiding and being a secondary focus of the research in itself.

In the following section I will highlight the major methodologies that I employed in my study of ActewAGL. My primary methodology, as shown above, was participant observation, however in order to test my assumptions, validate my findings and add depth to the ethnographic account I adopted a number of different validation and data collection strategies (Miles and Huberman 1994). As Robert Faulkner notes, "it takes multiples and complexity of data collection to capture and preserve multiples in the phenomenon of interest" (1982, p 81).

### 2.4.1 First Encounters – Placing the Organisation in its Socio-historical Context

Taking cues from my experiences as a newcomer with other organisations I developed a strategy for gaining an understanding of the social setting in the first few days of my fieldwork. As a newcomer one searches for meaning and tries to assign relevance (van Maanen 1977, p 18), just as an ethnographer tries to understand cultural knowledge, behaviour and artifacts that the participants share and use to interpret their experience (Spradley 1980; Schwartzman 1993, p 52). I used this premise as a basis when planning orientating activities in my field site.

In one of my previous roles as an organisational consultant, I had used a methodology developed by the National Archives of Australia designed to assist organisations in improving the management of records and information.[19] I used a modified version of the first two steps of the DIRKS methodology to design a framework that enabled me to use the documents, websites, procedures and strategies produced by organisations to

[19] DIRKS – Developing and Implementing a Record Keeping System. This program was developed by the National Archives of Australia and is aimed at standardising record keeping in Commonwealth Government agencies by providing a structured and rigorous approach to organisations based on reviewing their business needs (NAA 2001; NAA (n.d)).

categorise: the organisational legal framework, internal and external stakeholders, business, social and ethnical standards, organisational structures, goals, strategies, functions, and activities (NAA 2001; NAA (n.d)).

This allowed me to put the organisation in its socio-historical framework, begin to understand the functions of the organisation and the way different work groups interacted with each other (Baba 2001; Mascarenhas-Keyes 2001). It also focused my initial research effort, provided me with an occupation, and preventing me becoming bored, in between periods of instruction.

### 2.4.2 Participant Observation / Ethnography: An Introduction

Participant observers become involved in the daily lives of informants, observing them and noting in 'thick description' patterns of behaviour, emotions, interactions and the environment. Thus they are involved in the work of producing an ethnography, that is, the work of describing a culture (Spradley 1980, p 3; van Maanen 1988, p 1). As a methodology, participant observation enables one to appreciate the culture of an organisation or social setting, through a gradual understanding of the characteristics of the culture, the norms, rituals, shared meanings (Morgan 1986, p 121-3) and social interactions. To do this requires "at a minimum some understanding of the language, concepts, categories, practices, rules and beliefs …used by the group of people being written about" (van Maanen 1988, p 13).

Through a detailed description of the everyday social setting the ethnographer makes the familiar exotic and the banal mysterious (Suchman 2000b) or in other words

"defamiliarize[s] the familiar" (Schwartzman 1989, p 5). The process of undertaking ethnographic research is not linear but cyclic consisting of a number of stages including asking ethnographic questions, (both of informants and situations) collecting ethnographic data, making an ethnographic record and analysing the data (Spradley 1980). This process begins to show the socially assigned meanings of the environment and how this is linked to the various aspects of the cultures in which members sit. It also allows a researcher to endeavour to work out what it is that sets the organisation aside from others for the workers and the wider community, or to paraphrase Lucy Suchman, to determine what makes up their 'brand' (2000b). Ethnographic methods provide a holistic approach which "stresses processes, relationships, connections and interdependency amongst the component parts" (Denscombe 1998, p 69), whilst providing a view of the constantly changing beliefs and actions of the actors (Tsoukas and Chia 2002, p 580). The 'thick description' which is the outcome of my research was produced in part from the notes taken whilst acting as a participant observer, from the interviews conducted and from locating the observation in a theoretical context of knowledge, organisational behaviour and ethnography. This process will be outlined in more depth in section 2.5.2.2 on 'participant observation as a methodology'.

#### 2.4.2.1 Confessional Ethnography

Throughout this thesis I have tried to incorporate myself, my values and beliefs into the research[20], not just to creep in occasionally, but to be part of the ethnographic account because I was part of the events as they unfolded. I use the first person 'I' because I was there and thus cannot be cloaked in anonymity and do not wish my account to be read

[20] It is becoming more acceptable for ethnographic researchers to present a more autobiographical tone and to challenge the 'distance' one was traditionally supposed to place between informants and oneself, as explored in (Clifford 1997) This work however is not attempting to describe 'the other' but a group that I was involved with as a true participant.

with the sterility of a research report (van Maanen 1995). As discussed, being a researcher was only one of my roles in the field site. I had other significant roles at ActewAGL, as a worker with useful skills, an understanding of procedures and intranet site content, and as a colleague with experience in a number of areas and roles in organisations. I was not only observing the environment, I was participating in the environment being studied, and thus I present myself actively in the research (Coffey 1999, p 126). I have tried to be reflexive (Coffey 1999) in this as far as I can, however as my interest in the field revolved around gaining an understanding of how things got done, much of my reflexivity tended to focus on thinking about and interpreting the events, situations and processes in the field rather than addressing my personal feelings and interpretations. Such a focus resulted in me conducting further analysis such as trying to unpack the discrepancies in the warehouse by doing, for example, a complexity and discrepancy analysis, as discussed further later in this chapter. Thus my research involves balancing a confessional ethnographic account with trying to reflect on the views of my colleagues and portray their understandings of the environment as much as I can without being in their shoes.

The literature on organisational ethnographic research describes this revealing the person that is the researcher as "confessional ethnography" (van Maanen 1988; Bell 1999; Schultze 2000). This is confessional because unlike many ethnographic examples where the author "begins with a 'fable of rapport' that details his or her physical, emotional and intellectual suffering before being accepted as a proto-member of the culture being studied …[and then] the author disappears from the text" (Martin 1992, p 195) or fades into the background, the researcher in organisations often has a specific role (Schwartzman 1993, p 53) and an officially endorsed purpose for being there. A researcher in an organisation with a specific role cannot fade into the background and

"just observe: [one has] to participate"(O'Neill 2001, p 225). As a contributor, researching this environment leaves the researcher exposed. This exposure makes it acceptable in the ethnography to show nervousness, worry and to present the naturalness of the account (van Maanen 1988) whilst "rendering his/her actions, failings, motivations and assumptions open to public scrutiny and critique" (Schultze 2000, p 8). Being so vulnerable places the ethnographer "on a par with their 'subjects' who typically feel exposed and criticised by ethnographic texts" (Schultze 2000, p 8). Thus it is important for the researcher to consider her personal beliefs, interests, experience and expertise in relation to the area of study and to be prepared to reveal various details about herself including such things as age, sex, ethnicity, education and qualifications and work experience and skills (Schwartzman 1993; Denscombe 1998, p 75; Bell 1999, p 17; Schultze 2000).

#### 2.4.2.2 Participant Observation as a Methodology

The use of ethnographic techniques in the field is much more methodical and systematic than the romantic images painted of the ethnographer bringing together the complexities of a social setting in a brilliantly written piece of work that reads and engages like a novel. Of course this is the ultimate aim, however before this can happen the researcher must undertake a systematic process of taking notes, conducting analysis, writing and rewriting. In this section I will highlight some of the processes involved in undertaking and analysing an ethnographic account of an organisation, although "it is part of the point of ethnography that there will never be, and cannot be, total agreement over what is the best way to go about it" (Gellner and Hirsch 2001b, p 8).

The ongoing task of the ethnographer is to compile a primary ethnographic record (Carspecken 1996, p 45) or a collection of expanded accounts (Spradley 1980, p 70) or thick description (Geertz 1973). Spradley (1980, p 63) describes the ethnographic record of consisting of field-notes, tape recordings, pictures, artifacts and anything else that documents the social situation under study. Bringing all of this together involves collecting such artifacts, taking descriptive notes of situations in the field and writing up the field-notes as soon as possible after an event.

The process of compiling the ethnographic record varies according to individual preferences, although I went about it in the following way. I would carry around with me a note book in which I wrote initial notes, 'the condensed account' (Spradley 1980, p 69), as they happened. I would then use this 'field journal'(Carspecken 1996, p 45) as a basis for completing more in-depth notes or the primary ethnographic / extended account. I spent time every night and when I was not in the field writing up my notes and coding my data. These notes I wrote on the left hand side of the page with wide margins on the right where I would then write themes, key words or my own thoughts (Minichiello et al. 1990). This wide column also assisted with the coding and memoing phases of the analysis (Glaser and Strauss 1967; Miles and Huberman 1994; Hueser 1999; Dick 2000), as discussed further later in this section. I also kept a journal in which I wrote my personal feelings (Minichiello et al. 1990; Agar 1996; Lacey and Luff 2001) about issues that occurred in the field, concerns, memos, ideas and thought provokers I could come back to later. This journal allowed me a place where I could systematically reflect on the fieldwork process whilst adding my own personal reflections (Mills 1959, p 196-7). I tried to capture in my ethnographic accounts such things as the situation, the date, the actors, emotions (mine and those of observed actors), language used,

descriptions of artifacts, the contents of exchanges, actions, events, maps showing locations, and my own personal reflections.

The themes that I wrote in the margins of my ethnographic notes formed the basis for my list of codes, based on a grounded theory approach (Glaser and Strauss 1967).[21] "Initially, each behaviour is coded with as many emergent codes as are needed to record the ethnographer's developing understanding" (Arnould and Wallendorf 1994, p 498), the codes are designed to "mark recurrences" (Arnould and Wallendorf 1994, p 498) and then form the basis of themes of exploration. At the beginning of my fieldwork, after adding the themes in the wide margins of the primary ethnographic account, I compiled a cross-referenced coding list each week, which listed the major concepts, page and paragraph numbers in a table format. This could easily be searched using Microsoft Word, however as I obtained more data the documents became unstable and so I found it necessary to have a number of different coding documents. The problems associated with searching through multiple coding documents, and multiple ethnographic accounts were eliminated somewhat when I converted my data across to the qualitative data analysis package NVivo.

The NVivo package made coding easier and less time consuming and made conceptualising the more than 250 codes and their inter-relationships easier, as shown in Appendix Seven. The package has search capabilities which are fast and easy to use (Weitzman 2003, p 316-17). These allowed me to link concepts, to make systems diagrams of relationships between codes, or nodes as they are known in the package, to

[21] This approach often used in qualitative studies allows theory to emerge from the data. In such an inductive approach to research the observations and findings come before and result in theory through a process of drawing out generalisable inferences from the accumulated data (Bryman and Bell 2003, p 12).

assign attributes to particular documents, to print out node reports[22] and allowed me the flexibility of making changes (Bazeley 2003). The Nvivo program also allowed additional benefits such as aside notes[23], use of colours and formatting tools such as bold or italics. Having started out learning about qualitative data by hand (Weitzman 2003, p 334) where I did some analysis of a previous research project using a grounded theory approach with my notes cut up and stuck to index cards (Robertson 2002) spread all over my living room floor, I had a number of expectations of the package, mostly associated with personal biases for words (like codes, memos etc), however once I was able to move beyond words to concepts I found the package relatively simple to use, helped along a bit by my husband who had attended a NVivo course.

In my notes I used the conventions noted by many authors of double quotes indicating verbatim speech, single or no quotes for paraphrased speech or to indicate another's speech within a quotation, round brackets for contextual data and square brackets for my own contributions (Spradley 1980; Schwartzman 1993; Agar 1996; Carspecken 1996; Schultze 2000). For ease of searching, and out of paranoia of notes being somehow separated from their 'home' in my original notes, I would also note the paragraph and page number at the beginning of the paragraph and annotate the ethnography with square bracketed codes.

Whilst I experienced saturation (Glaser and Strauss 1967; Hueser 1999; Dick 2000) in some instances, often I would find additional data that supported or contradicted patterns that I thought were developing. I had anticipated that as I became more familiar

[22] Node reports show the number of coded paragraphs for each node, the contents of the paragraphs, their unique location and the document in which they can be found.
[23] NVivo calls these data bytes. I found them particularly useful for annotating the data with comments made by informants in member checks.

with the environment the amount of thick description produced would be less than when I initially enter the field. This partly occurred in that some days I would obtain little data, a phenomenon that bothered me initially but which I began to accept, and some days I would collect a huge amount of data, depending on what was going on. Saturation is an important part of the fieldwork experience. It means that the researcher is no longer getting additional surprising learning resulting from particular occurrences of key concepts and shows that certain themes have been explored sufficiently negating the need to seek further information on that concept (Glaser and Strauss 1967; Hueser 1999; Dick 2000; Lacey and Luff 2001).

The themes that form the basis of the data chapters emerged from the ethnographic data quite early in my fieldwork. Of my 250 plus codes (shown in Appendix Seven), they were some of my most significant codes in terms of the number of ethnographic passages in which the themes of each code could be found, and were also the subject of some of my thirty-five memos. As I wrote and thought about my data I would make notes to myself of issues to explore, hypothesis to follow up on and relationships between parts of the data I was coding (Glaser and Strauss 1967; Miles and Huberman 1994; Dick 2000). These I dated and added headings to. Such notes formed the basis of memos, which are in effect explorations of key themes and concepts in the field site, and often the basis on which to discuss the half formed thoughts with informants.

In doing the analysis of the data for each of the chapters I found matrix structures (Miles and Huberman 1994) allowed me to visually conceptualise and group aspects of the data. By grouping the data I was able to see patterns, to disregard duplicated concepts

and to align the theory with the ethnographic examples. This helped structure my analysis and write up.

I conducted a weekly analysis of my notes and then took a week off with a month to go until the end of my time in the Procurement Section to ascertain the quality of my data, to identify holes in the data and to take stock of what I had achieved. Spradley likens this to "climb[ing] a very tall tree and gain[ing] a broad perspective on how far you have come, what tasks lie ahead, and which direction you should take" (1980, p 35).

Although I took stock of where I was, extended my field work for two weeks and then left the field, it is difficult to ascertain when data collection stops (Feldman 2000) as I continued to collect spasmodic data even after having left the field. Van Maanen discusses the need to take leave of the environment in order to write up (1982, p 139), I did this, however was in the fortunate position of then being employed by the Facilities Management area of ActewAGL for a day a week. Thus during these days and the walk I took with my ex-Logistics colleagues at lunchtime, I continued to collect data.

### 2.4.3 Interviews

In order to supplement my assumptions, check their validity and triangulate the process (Miles and Huberman 1994; Lacey and Luff 2001) of observation, I conducted interviews with virtually all of my informants. Observation puts the researcher in a position where they are able to make assumptions about the environment, but "interviews are especially useful for understanding how people make sense of their work and the issues they believe are important" (Barley and Kunda 2001, p 84). As

Barley and Kunda note, "observation mixed with real-time interviewing is better suited for studying work practices" (2001, p 85) than many other combinations of methodologies.

I asked permission to interview people prior to doing so and all bar two agreed, this amounted to approximately thirty interviews. A couple of people I interviewed twice in order to follow up on something that had happened in the field, or to seek additional clarification. With all of the people in the field site I had an ongoing relationship so I was able to conduct informal interviews or discussions with people as part of ordinary every-day events.

Although I did not follow a strict set of rules about interviewing, such as they did in the Hawthorne Experiments (Roethlisberger and Dickson 1939, p 270-2, 279, 281, 287), I was aware of and tried to adhere to the underlying principles of good interviewing. This including being patient and friendly, not seeking specific answers, not arguing with the interviewee and following up on or probing the answers the informants gave. I began by asking open and sometimes ambiguous questions to elicit information (Schwartzman 1993, p 58) and relax the participants, these included questions such as 'tell me about your role in ActewAGL', and then developed these into more specific questions in the process of conducting semi-structured interviews. I had an interview guide (Minichiello et al. 1990; Bryman and Bell 2003) (See Appendix Six) which provided a number of broad areas on which I was seeking information but largely followed the leads of my informants, probing from things they said and occasionally steering the interview. I was both surprised and delighted at how candid my informants were during interviews. For

me, as for Agar, "observation and interview[s] mutually interact with each other, either simultaneously or sequentially, in the course of doing ethnography" (Agar 1996, p 109).

Although some authors note that there is a risk that audio taping an interview will have an impact on the type of data that emerges (Denscombe 1998, p 124), I chose to tape interviews if my informants provided permission. This enabled me to transcribe their words accurately and capture otherwise hidden messages such as tone of voice. I also took notes during interviews (Denscombe 1998, p 122) motivated by a fear that the tape could fail and the desire to capture some of the ambience, non-verbal responses such as body language, pause, the use of metaphor, or changes in footing (Goffman 1981, chpt 3). I later coded and analysed the transcriptions in much the same manner that I coded the rest of my field-notes and these proved a rich source of data and a valuable learning experience for me. As discussed further in the validity section of this chapter, I sent a copy of the transcript to the informant and when they made comments or corrections I incorporated these in the final version of the notes.

### 2.4.4 Social Network Analysis

Social Network Analysis allows one to gain an understanding of the social interactions within an organisation by supplementing ethnographic observations of the everyday events, routines and occasions that occur (Schwartzman 1993, p 63). They provide insights into how work is accomplished (Hildebrand 1998), how the knowledge is held and created socially and how the informal social network creates and maintains informal interactions, rites, rituals, values and norms within that environment. Social networks can provide an understanding of information dissemination patterns (Dalitz 2004), and

of the structure of social relationships among actors by noting patterns of linkages amongst the group (Ellen 1984b ).

Social Network Analysis, or the process of collecting information about group formation (Goldman 2000 ) helps reveal the knowledge flows and informal interactions of the people within the organisation by providing a visual representation of the social network. The network interactions are represented by nodes and links (Zack 2000; Brass et al. 2004), clusters of which identify people well connected in the informal network. Social Network Analysis is enhanced by the explanations provided by rich, ethnographic descriptions (as described above), which add substance and structures to the analysis (Zack 2000, p 2).

In previous work I have done I have found I can gain a more comprehensive picture if I break up the social network and produce two or more maps including social network maps and information maps (Dalitz 2002). In other environments I was able to also map interactions based on influence[24], however at ActewAGL I was unable to use these reputational / attributional methods (Tichy et al. 1979) due to the relatively flat structure and lack of overtly obvious displays of influence.

An information map shows the relationship between people and from where they get their information. Social maps show relations that are not specifically work related but which provide the trust basis for informal communication. Such maps are critical in

[24] Influence mapping identifies the sources that one finds are influential and trustworthy (both within the hierarchy and external to it) and documents the communication channels that are utilised by the individuals in the social network for decision-making (Dalitz 2002).

understanding the informal communication channels not highlighted in the organisation chart and may identify how actors obtain information of specific types.

Using interactional methods (Tichy et al. 1979), involving a combination of both observation, and interview data, I was able to note the social and informational based interactions in the Procurement area of the Logistics Branch of ActewAGL. This methodology was chosen because it is unobtrusive (Brass 1984, p 536), has the potential for inclusion of participant feedback and data validation, and because of the potential for real-time data to yield more accurate information than other methodologies such as decisional analysis or positional analysis (Tichy et al. 1979). Initially mapping observed interactions also allowed me to record power relations of who was instigating the interactions (Brass 1984, p 536).[25]

Software tools are available for mapping networks (Speel et al. 1999), however because my sample size was quite small, just being the Procurement Section of Logistics, I compiled these maps manually. This was possible because I was physically in a position that allowed me to hear and see almost all social interactions. I was able to identify both the frequency of interactions and whether the interactions were of a social or informational seeking nature.[26] Due to the physical size and the lack of ability to observe all the interactions, I was unable to undertake a similar analysis in the Warehouse.

[25] Interestingly these observations actually revealed a fairly even balance of initiations between people in the Procurement Section.
[26] There are some differences in the interactions but often social interactions and information seeking interactions overlap, confirming the often inseparable nature of work-related and social interactions (Brass 1984, p 536).

### 2.4.4.1 Social Network Analysis – Methodology

In order to complete the Social Network Analysis, each day I would observe the interactions and map the interactions of more than approximately two minutes, thus ruling out daily greetings and social niceties. Where repeated interactions occur between two people within a day, I have counted these multiple interactions as one interaction. I have only counted those interactions, which occur in the daily routines of Procurement and which incorporate an element of choice. Thus I have not counted interviews or meetings as interactions.

Once I had a data set of approximately 50 days, I combined the maps to produce two single maps, an information map and a social map.[27] I have chosen to represent the social network separately to the information network because although the two may be related, they are not the same. I placed the maps over a floor plan as this provides ease in the mapping process, locates people in a fixed position for the purpose of analysis and can provide useful information about physical space. The lines on the maps indicate connections between two people in the social grouping and the arrows represent the direction of the knowledge exchange in that they indicate who is being sought for information (Cross and Prusak 2002). In the case of the social network maps for the Procurement Section of the Logistics Branch of ActewAGL, double arrows represent mutual exchange of knowledge, where both people generally seem to benefit. I note the frequencies of interactions by varying thickness of the lines. A thick line represents frequent interactions whereas a thinner line shows less frequent interactions.[28]

[27] For copies of maps see Appendix 4.
[28] For example less than five interactions over 50 days would constitute infrequent interactions and thus be represented by a thin line, whereas a daily interaction (representing more than 30 interactions) would be represented as a substantially thicker line with varying thicknesses between.

### 2.4.4.2 Social Network Analysis – Validity Issues

As with any form of data collection, there are some issues with the maps, although I tried where possible to validate them. These maps, discussed further in the in/formal chapter, represent the observable interactions, although there will obviously be other non-visible interactions not included. I circulated the maps for comment and validation, after which a colleague noted that a weakness of the maps is that "there is no brew room". This is quite right and recognises the importance of both the physical environment and of social interactions, as well as the limitations of only mapping what can be seen, thus missing out on important areas of interaction such as the tea room or by the ubiquitous water cooler (Davenport and Prusak 1998). Such interactions not observed include meetings, discussions of network groups such as the smokers group, or the group that walks together at lunchtime and interactions with the people upstairs[29] or in the Warehouse, apart from when these occurred in the observation area. Also excluded are interactions with external groups or people, both within ActewAGL itself, including other divisions, the field workers and project officers, corporate functions and senior management and also the external community including suppliers, consultants and other groups

In addition to circulating the maps, I validated my data by including a series of questions in my interviews with informants. These included questions such as 'From whom do you get information at least once a week?, From whom do you seek information at least once a week? (Work related and non-work related.), To whom do you give information at least once a week? (Work related and non-work related), On

[29] The people upstairs included the Branch Head, the Cataloguing Officer, the Standards and Disposals Officer, the Inventory Controller and occasionally the Team Leader for Warehouse and Inventory. These people did interact with the people in the demountable (where the Social Network Analysis was undertaken) and I have included these interactions but not those that occurred in their own office space as I was unable to observe this with any form of regularity.

which topics do people seek your advice? In terms of similar knowledge of key issues you are dealing with. i.e. when you are absent, who does the task fall to?'. I also member-checked / validated (Carspecken 1996; Bryman and Bell 2003) my maps by showing them to all informants and received some valuable feedback on them. I concentrated on interactions that I could see, however this study could be expanded using questionnaires or time / motion studies as well as technologies to also monitor telephone conversations, email and contacts with people outside the immediate environment.

#### 2.4.4.3 Social Network Analysis – Data Considerations and Biases

There are a number of factors that affect the reliability of the social network maps, including staff movements and absences, and a possible researcher bias. During the study period from July till October, two staff left and towards the end of that period another arrived. I have chosen not to represent the colleague who arrived in the middle of September because the data would have been inconsistent given that she was here for little of the data collection period and even then only there one day per week when I was present. Due to the departure of the two staff members that left during the period, the representation of the interactions involving them provide a glimpse only and thus are not entirely accurate as to their significance in the social network. Similarly, during the period of observation, a number of people were either 'off-line' or away and thus couldn't be observed. During the study a number of the participants, including myself moved desks. Where people have moved, I have continued to map their interactions but have opted for the ease of static location rather than adding to the multiplicity of an already complex collection of social maps. These factors affect the reliability of the data concerning those players. Although given the length of time it is hoped that the data will

have balanced itself out, making minor moves or departures less of an issue to the overall quality of the data.

A researcher bias can be noted in the information map (See Appendix Four), partly due to the fact that I was able to observe all of my interactions but not all of the interactions of other players, and partly because of my physical position on the map. Further, I was learning the processes at the time of observation and thus was possibly more likely to have more intense interactions[30] with various actors than if I had understood the processes. In the social map, an attempt has been made to eliminate this bias by deliberately not mapping my interactions, although this data is available.

Social interactions are not static and true indications can only occur with repeatedly undertaking mapping exercises. The maps can only be taken as an indication, or a snap shot of the relations at a particular period in time. Given changed circumstances, these are likely to change over time. That said the maps shown in the appendices represent an indication of the interactions during the period from the beginning of July until the middle of October 2003.

### 2.4.5 Organisational Chart & Document Analysis

As part of my analysis I undertook extensive archival research, reading many of the documents produced by the organisation to gain a fuller picture of the environment. Documents available included such things as annual reports, business plans, marketing documents, historical reports on projects such as REMAP, procedures, work

[30] Blau (1964, chpt 7) notes that newcomers in a group (as I was) increase the demand for the provision of advice and (as can be implied by the maps) this results in a permanent increase in the amount of consultation.

instructions, minutes of meetings, documents detailing warehousing processes, the intranet, the company website and archival news reports.

With regards to change in organisational structures, old organisation charts provide a wonderful insight into changed structures and foci. I gained access to the organisation charts for the Logistics Branch from 1998 until the present. Through a simple counting exercise (Miles and Huberman 1994) I was able to ascertain that there had been at least 25 iterations of the organisation chart in Logistics since 1998 of which at least 11 involved major structural change, as discussed in the change and in/formal chapters.

### 2.4.6 Discrepancy Analysis

Discrepancies are a significant issue in the Warehouse, prompting me to undertake an analysis of the types and frequency of these. In the Warehouse, the staff make a number of errors. These discrepancies run at an average of over 100 identified mistakes at any one time and any number of unidentified mistakes.

In order to analyse the discrepancies I devised a simple method in which I was able to note discrepancies quantitatively. In my allocated role as Shipper in the Warehouse all of the requisitions came across my desk. My role was to note the debit of the items on the requisition / pick slip from the Warehouse inventory through a process of shipping the items out on the computer. To analyse the requisitions I tabulated each Storeperson and placed each of the eighteen main types of mistakes in the rows, as discussed further in the routines chapter (see also Appendix Three). Each day as an adjunct to the Shipper's work I would then note the types of mistakes each of the Storepeople,

including myself, made. In a separate worksheet I calculated the aggregate total of the mistakes. Error rates were calculated as the number of mistakes divided by the total number of requisitions shipped by individuals and by the team. The overall error rate for the entire sample was 28.2%. The data was not suitable for more sophisticated statistical analysis and thus only simple exploratory data analysis was undertaken using basic statistics derived from counting and then making comparisons (Miles and Huberman 1994). This however provided sufficient data to classify the types of mistakes further into three major categories; errors related to lack of attention to detail, system errors and errors relating to task complexity. The conclusions drawn were triangulated with ethnographic and other data. Collecting this data enabled me to see that all Storepeople make mistakes, but also revealed other information such as the increase in errors by usually careful people when Storepeople were on call.[31] This simple quantitative analysis had multiple benefits. On the one hand it allowed me to test some of my assumptions and on the other hand allowed me to see specific circumstances in which mistakes were made.

### 2.4.7 Complexity Analysis

I investigated the discrepancy analysis further and conducted a complexity analysis. Having tried very hard not to make mistakes but finding that I, like my colleagues, made mistakes, I undertook a discrepancy analysis, discussed above and as a result of the analysis of this, I assigned a number of categories to the types of mistakes, two of which were systems mistakes, or mistakes made as a result of failure to follow due process, and mistakes occurring due to task complexity.

[31] Storepeople rotate weekly into the 'on-call position'. If a Storeperson is called out after hours they are paid three hours overtime. Once they have left the store, if the phone rings again they can claim an additional three hours, if the phone rings whilst they are at the store they can only claim once. Thus there is a monetary incentive to complete any tasks in the Warehouse expeditiously.

In the Warehouse many of the processes and the supporting procedures are complicated and very lengthy, as discussed in the routines chapter, so I used these as a basis for the complexity analysis. In order to conduct this analysis I analysed a number of procedures and work instructions for different tasks, counting the number of individual steps involved in each task. I then assessed each task according to the number of possible linking procedures and also the number of actors necessary for the completion of each task. Assessing the linked procedures and the linkages with other actors allowed a rough estimate of the possible sequential variations for each process (Pentland 2003). I then tabulated the results of the analysis, as shown in the routines chapter and Appendix Two. Such an exercise in counting and assigning categories (Miles and Huberman 1994), shows the complexity of the actions and provides an insight into why the numbers of discrepancies were high enough to be of concern to the people in Logistics. As a result of this analysis the Logistics Branch are now attempting to simplify some of the procedures.

## *2.5 Validity Issues*

Ensuring validity of data is a major concern of any researcher. A number of authors advocate engaging multiple methodologies (Faulkner 1982; Miles and Huberman 1994; Lacey and Luff 2001) in order to triangulate the data and test it from a different perspective. I triangulated my data and tried to test any assumptions I made, being very conscious of the possibility that they could be just that – assumptions, not shared by my informants or that maybe I had misinterpreted the field and allowed my biases to get in the way. In order to validate my data I adopted strategies including circulating documents and models and conducting member checks.

Half way through my fieldwork I presented a number of member checks to my colleagues. The aim of this was to "share [my] own meaning reconstructions with the subjects of the study" (Carspecken 1996, p 141), involve them in the study (Lacey and Luff 2001, p 23) and confirm that my findings were "congruent with the views" (Bryman and Bell 2003, p 291) of my informants. To do this I created documents (deleting references to individuals) based on a collection of extracts from my ethnographic notes on particular issues of expertise to individuals. If for example a person were considered an expert in a particular area, such as warehousing, or with a particular system, such as the accounting system, I would combine a collection of extracts on that particular area or system. This document I then sent to the individual and asked that they make any comments or suggestions and that they validate (or dispute) my assumptions. This exercise enabled people to see some of the sorts of notes that I was taking and was useful for me as it showed where I had made misinterpretations and where I had made correct analyses.

Building further on the concept of member checks, I also drew up models, such as the model of management feedback / communication (Figure 6.3 – Chapter Six), as discussed in the data chapters, and showed this to people during our interviews. In this way I was able to test the model and benefit from the suggestions of some people who added to the model, saying things like "yes that is pretty right but there is a wall here with small holes in it through which communication moves by osmosis".

I was keen that my informants should know how I was interpreting their comments and thus I sent them a copy of their interview transcript after I had transcribed the tapes. I

included my own responses and questions in the transcripts because part of confessional ethnography involves showing ones vulnerabilities and I would often make a faux pas, occasionally express an opinion that I should not have or assume a chatty tone. These things relieved tensions (although they were far from intentional) that might have existed had I been better at carrying it off the detached interviewer / informant relationship. I invited informants to get back to me with any comments they might have and some did so. The more fastidious of them corrected the imperfect grammar of the interview transcription, some came back with additional comments and some merely made a remark such as "I didn't realise we spoke for so long in such depth."

I also validated the social and information maps by asking questions in the interviews about who they received information from, with whom they interacted socially, who they gave information to and on what topics, as discussed in the interviews section of this chapter. This is in accordance with common practices in Social Network Analysis, which assume that the actors are likely to be able to recall regularly occurring relations. Where informants indicated a relationship in existence that I had not noted, I recorded such an interaction as an actual tie (Krackhardt 1990; Hansen 1999, p 92-3). After completion of the maps I circulated them to all of my informants, seeking and taking on board any comments they had.

In addition to the individual receiving their interview transcripts and the social maps, all informants have received a copy of the fieldwork report that I prepared at the end of my fieldwork and those in management roles received a copy of a management report detailing some recommendations. Informants also received copies of each of the draft chapters as I wrote them. In all cases I have been happy to take comments, and

suggestions, although in most cases the informant comments have been limited to comments agreeing with my interpretations and noting such things as, "academic references aside you write a good paper."

In order to avoid creating a bias I chose not to read Donovan's book *Lights, Water…ACTEW*: *a History of ACTEW and its Predecessors* until I had finished in the field site at ActewAGL. I was gratified however when I did read it that many of the issues my informants noted were significant were mentioned in the book. Further, I was able to validate much of my data in that the book discusses in depth a number of my key codes, including possibly ambiguous codes such as 'good corporate citizen' and 'passivity'.

## *2.6 Problems / Issues with the Methodology*

There are issues associated with all methodologies, in this instance they include the need to have a role, ethnography being hard work, limited field of view, fitting in and gaining access to the field site. Yet despite issues, combining methodologies produces a strong picture of the study organisation.

### 2.6.1 Neutrality is an Illusion - Rolling Out a Role

Van Maanen notes that "neutrality in the field is an illusion" (1982, p 115) and this is indeed one of the limitations of fieldwork involving active participation. One goes into the field with certain biases and in adopting a role frequently finds that they empathise with one group or another. I was in the double-edged position of being able to identify with both the people at the operations level and also those in management, having

worked at both levels at various stages throughout my career. This meant that my feelings were often on a pendulum. For example in the Warehouse in my researcher hat I could justify and explain the number of discrepancies based on the complexity of the environment and the tasks, however at the same time with my ex-management hat on I was incredibly frustrated by the number of errors, and especially when I started to investigate errors with my Storeperson hat on and discovered that an error could have several associated errors and doing the "detective work" on it could take nearly all day. The methodology of participant observation is coloured by one's background and experiences and complicated by the fact that in my case I was not just a researcher but had multiple roles.

The role the researcher is to have in the organisation (Bell 1999) and how to balance ensuing role conflicts (Mirvis 1985) can be problematic. My own role was quite clearly defined however many organisational ethnographers are neither insiders nor outsiders but have qualities of both (Sarsby 1984, p 129) and thus informants approach their position with confusion.

The role of participant observer carries with it the risk of getting too close and losing the focus on the research. At one point, a couple of weeks prior to me taking a week off to do some analysis, the Procurement Section hit a staffing crisis and I seriously considered offering my services to assist. I empathised with the situation and had a possible solution, but as my husband reproached me for "nearly going native" that night when I aired my concerns with him, I realised that the 'solution' would mean that I would be losing the focus on the research. There is no clear line between being a researcher and having a role in the organisation and it is necessary to continually apply

a critical, analytical and self conscious attitude to the research (Coffey 1999, p 32-33) and to keep redrawing the line thus making sure that the research is still being done. The role itself is often diffuse and ambiguous (van Maanen 1982, p 105). Some days I would get so caught up in the job of being a Procurement Specialist or a Storeperson that my notes would be sparse requiring additional time at night for me to recall and recreate events of the day.

### 2.6.2 Ethnography is Hard Work

Holding the dual role of researcher and worker gives the researcher an identity within the group (Schultze 2000, p 10), but it is difficult, time consuming (Bate 1997, p 3 web version) and labour intensive. In this capacity there is very little leisure time to write up notes in quiet times because there are always tasks to be completed as part of legitimate organisational routines. Thus as many organisational researchers note the researcher must spend their own time, weekends and evenings writing up their notes and doing any analysis (Martin 1992; Schultze 2000, p 16). The nature of the methodology of participant observation is that there is no respite. I certainly found this being in the field site for eight hours a day, four days a week then writing notes and coding each night, then spending the other three days a week doing further coding, analysis and related research work. Keeping to this rigorous pace meant I collected good data quickly but eliminated the possibility of having any life outside of the research.

### 2.6.3 You Can Only See What You Can See

Whilst the methodologies employed in this study are ongoing and intensive, organisational studies have the advantage of not being a completely unfamiliar environment. In a business organisation participants learn the language of business and

become familiar with acronyms and words used in that environment, but do not need to analyse known patterns of behaviour. I know about what it is to make and drink coffee and thus could skip the descriptions of going into a small room and coming out with brown water and concentrate on the interactions which occurred during these rituals rather than the ritual itself.[32] I also had an advantage in this environment because I was familiar with organisations having previously worked in many, I have a Master of Business and I had worked in ACTEW (as it was then) previously.

Despite having background information that assists with understanding, the methodologies I have employed here are limited in that they rely on observations and you cannot see nor begin to understand everything. All people are bounded in their cognition and abilities to understand things they 'see'. This affects the ability to replicate the study because access was linked to my personal contacts and to trust relationships that can only be extended and transferred to other researchers to a limited extent (Becker et al. 2005, p 785). I tried to validate my assumptions where possible, however, I sometimes misinterpreted events or situations because I did not have the background information or because I failed to notice all of the surrounding events. Another researcher may not have even seen some of the things that I was able to see and may have seen or interpreted things differently.

In the following chapter, I discuss how I have used knowledge-in-action to illuminate and support the ethnographic account. This is useful for adding depth to the ethnography, but knowledge is not always an equally useful lens and thus the

[32] Some authors have noted the difficulty in 'fighting familiarity' (Coffey 1999, p 21) and the problems that conducting ethnographic fieldwork in familiar settings presents. For my part, my roles were new to me and so there was still a degree of the unfamiliar meaning that I was still able to find sufficient data beyond what was already known.

effectiveness of the Ethnography of Knowledge is variable in providing an understanding of the social setting and the knowledge underlying it. Knowledge is also not always useful in explaining behaviours because personal motivations are fuzzy and complex. This is particularly the case as one moves further away from the actions associated with the knowledge, as discussed later in this thesis particularly in Chapters Seven and Eight.

Being unable to see things relates not only to the constraints of the researcher's abilities but also to the physical location in which events and interactions occur. Other researchers have discussed the difficulties in studying certain environments such as shopfloors (Roethlisberger and Dickson 1939, p 385-7). Warehouses present similar problems with regards to size and complexity. In the Procurement Section I was able to see and hear all of the interactions and thus was able to produce both social and informational maps. In the Warehouse however, the physical environment was much bigger, and the tasks of the actors more individual than communal. Thus as the interactions were more diffuse and I could not see them all anyway, I was unable to undertake any form of Social Network Analysis. In this expansive physical environment I supplemented the observations with discrepancy and complexity analyses instead.

### 2.6.4 Clandestine Research and Gaining Access

Although my informants had all been informed of my research project and agreed to comply, a risk with the use of ethnographic methodologies is that the research could be concealed and thus the informants could be taken advantage of. Sarsby notes that this is a problem in studies undertaken in familiar settings (1984, p 132).

That some people need to resort to clandestine research strategies perhaps has something to do with access problems associated with participant observation studies.[33] As Bryman and Bell note, "one of the key and yet most difficult steps in ethnography is gaining access to a social setting" (2003, p 317). The idea of having a person in the midst of an organisation observing the actions of individuals and possibly making judgments is quite intimidating. That this kind of research into organisations is a relatively unexplored phenomenon makes gaining access to a field site quite a difficult process for many would-be researchers. As discussed in the literature section of this paper, the negotiation for entry is one of the more difficult parts of ethnographic research in organisational settings.

### 2.6.5 Fitting In: Babes and Boars, Nobody Goes Pig Hunting in a Bikini!

Whilst having a role is important, being a participant observer carries with it the risk of trying too hard to be something you are not. As Agar notes, when William Foote Whyte started studying street corner society one of his key informants told him that it does not look good for the researcher to try and act like a street corner boy (Agar 1996, p 87). This is true in all studies of an ethnographic nature. One needs to fit in, but not too much, and one should not try to be something that they are not. In the Warehouse at ActewAGL many of the guys and their customers swear, not to be crude but simply because there is no cause for them not to, it is just what they do. This did not bother me, however I also did not try to compete or fit in by adopting and using language that did

[33] One of the more famous studies carried out without the prior knowledge of the organisation is Dalton's (1959) study. Dalton was a staff member but didn't gain approval for the study because of a fear that management may have manipulated the study for their own agendas. Kusterer (1978) similarly didn't gain formal access because he felt that access would be denied. Such clandestine research raises ethical and methodological problems.

not become me and was not characteristically part of my vocabulary. To do so would make me fit less rather than more.

In an all male domain some researchers note the risk of allowing sexual stereotypes to get in the way (Gurney 1985; Bell 1999) of being a worker. The Warehouse environment is an all male domain in terms of it occupants and also the artifacts that coloured its walls. I was not the slightest bit offended by the calendar of the rather pained anorexic looking model, nor of the calendar of the bikini clad babe, shotgun in hand kneeling behind the carcass of a wild pig, more amused that anyone would contemplate pig hunting in a bikini. Although these artifacts coloured the walls, they were not indicative of the way that the people treated females, (myself or others) and I always gave and received respect from my male colleagues. Contrary to some of the literature that suggests that being a female in an all-male setting is likely to present a myriad of problems (Gurney 1985) for the researcher, it was not a problem for me personally. That I am a woman did not matter[34], as a worker I did what I could and got help if I needed to, wore shapeless florescent clothes and took the same ribbing that everyone received, irrespective of sex.

At the end of the day, the methodological problems associated with fitting in come down to respect. As a colleague said before I went into the Warehouse,

> "The Warehouse guys will have their own set of issues. …You might find it hard as a woman in the Warehouse, [a previous woman] did. But then [she] didn't really fit. The guys found her very distant. You just need to treat them with respect and not talk down to them."

I did and do respect them and my colleagues in Procurement and I felt that I did fit. As to the more structural aspects of why I felt that I fitted in, I am not entirely sure of the

[34] This statement is not intended as a feminist or post-feminist statement, it is merely intended to note that the domain was an all-male domain but for me personally this was not an issue.

reasons, although a large part of it certainly did come down to respect. It may have been that I had worked in the warehouse previously and knew many of the people in both the warehouse and the Procurement Section from that time, that they had a fair rate of turnover in staff and had had other women working in the environment previously or even the fact that I was working and carrying my weight without pay. You can't go hunting boars in a bikini but you can have fun during fieldwork – I did.

## *2.7 Conclusion*

I adopted participant observation and confessional ethnography as my primary methodologies, triangulating my data with other methods. During fieldwork at ActewAGL I undertook the roles of Procurement Specialist and Storeperson. In these roles I was doing the same tasks as my colleagues – participating and contributing to their social environment. Participant observation allows an exploration of the culture of individuals in a social context through gaining an understanding of their actions. Actions are the result of knowledge and thus participant observational methods also allowed me to explore the concept of knowledge when knowledge is not itself directly observable. I have called this the Ethnography of Knowledge and use it to test the applicability of the use of knowledge as a means of illuminating the ethnographic account.

This thesis is largely methodological, based on the view that whilst ethnographic techniques have not been used widely in the study of organisations, when knowledge taxonomies are used in conjunction with observational methods it provides a rigorous and illuminating way to gain an insight into aspects of organisations, to organisational knowledge and the socially constructed environment. The following chapter provides an

exploration of knowledge through a series of taxonomies. The final chapter in Part Two expands on the introduction to the field site provided in this chapter and explores the field site in greater depth.

# 3 Chapter 3 – Knowledge

## *3.1 Introduction*

Knowledge underpins all human action and thus using knowledge as a lens for interpreting and understanding those actions should allow a much greater depth of understanding in the social setting.

The purpose of this thesis is to see whether it is possible to explore the social setting and gain a greater understanding of it by using the socially constructed knowledge, which underpins the social setting, and is observable through actions, as a tool for further exploring that social setting. Thus the thesis aims to link the social construction of knowledge with the social construction of reality and to do this by combining observational methods with the use of knowledge as a tool, as opposed to following knowledge or trying to look at ActewAGL's knowledge.

Through practice-orientated participant observation which "investigates what people actually do rather than what they say they do or ought to be doing" (Schultze 2000, p 4), one is able to observe organisational knowledge through the actions (Kaplan et al. 2001, p 17-18) that are underpinned by it. Participant observation explores the social situation in a way that few other methodologies can.

In conjunction with participant observation I use a variety of narrow beam searchlights in the form of various knowledge taxonomies. The knowledge taxonomies, as presented in the literature, have been selected on the basis of their observability in the social

situation and for their usefulness in encapsulating observed situations. Assigning the knowledge taxonomies to the ethnographic data, after the data is collected and analysed, as shown in Figure 2.2 (Overview of Methodology Used), helps to sharpen the observations, assists with further data analysis and makes the ethnography stronger and more persuasive. Through their use I show that there is no single knowledge type that is applicable in social settings but that a combination of many knowledge taxonomies most clearly explains the actions associated with knowledge. Finally such an approach allows me to test the appropriateness of using knowledge concepts as a means of understanding the social setting. These taxonomies of knowledge, although simplistic, sometimes contradictory and limited, when combined together with the power of the ethnographic method allow a rich and detailed picture of the social creation of the reality being viewed.

This combination of ethnography and knowledge taxonomies I call the Ethnography of Knowledge. This chapter builds on the brief description in the methodology chapter and introduces the Ethnography of Knowledge, which is the main contribution of this thesis.

There is no single, all-inclusive way of looking at knowledge without excluding or obscuring other knowledge types, and thus I use a variety of taxonomies. Within this combination of knowledge types and bearing in mind that "nor are we ever likely to come up with a comprehensive definition of knowledge" (Spender 2005, p 115), I view knowledge as the *dynamic, socially constructed, human capacity for action based on a combination of information, personal experience, values, interpretation, reflection, and understanding in a particular context*. This broad definition builds on the way our reality is socially constructed and how our understanding of our social reality is gained

through socially constructed knowledge (Berger and Luckmann 1966). It also implies an active, action-based view of knowledge.

Knowledge is ubiquitous and everywhere, however studying it in abstract terms is very difficult, thus in order to solidify the study of knowledge in the social environment we must rely on observation of the knowledge associated actions and interactions, or the outcomes of the knowledge and this must be done in context. In this capacity an ethnographic approach provides methodological advantages in observing actions and when coupled with knowledge taxonomies can provide a means of understanding an environment, its limitations and how work happens.

This chapter begins by outlining the Ethnography of Knowledge and the social constructionist framework and demonstrates that because our social reality is created through knowledge, observing knowledge-in-action allows us to better understand that social reality. The purpose of this chapter is largely definitional, providing a framework for the discussion of knowledge, as it is incorporated throughout the thesis, whilst introducing the concept of the Ethnography of Knowledge. I then follow with an exploration of some of the various knowledge taxonomies, using ethnographic examples in illustration. I do this before formally introducing ActewAGL because the context of ActewAGL cannot be divorced from the knowledge taxonomies and because concrete examples from ActewAGL (discussed further in the data chapters) provide a clear way to understand the knowledge taxonomies in what would otherwise be a fairly theoretical chapter. The chapter introduces knowledge as a means of aiding the methodological exploration of the social setting, provides a different way to look at events and supports the theoretical chapters of routines, in/formal, change and power.

## 3.2 The Ethnography of Knowledge

The Ethnography of Knowledge provides a methodological way of using knowledge as a means of understanding the socially constructed reality of a social setting. The Ethnography of Knowledge combines ethnographic techniques with a series of knowledge taxonomies. I do this by observing actions then deriving the knowledge types that underlie those particular actions in that social setting and highlighting these as part of the ethnographic account. These knowledge types are sourced from a set of knowledge taxonomies from the knowledge literature and are applied based on their usefulness in describing the observed situation. Using a meta-analysis one is then able to determine when, where and how knowledge enables us to understand the social situation better, to identify patterns in social behaviour related to a particular knowledge type and to abstract to the wider social setting.

The Ethnography of Knowledge provides a practical methodological contribution towards a knowledge-based understanding of the social setting. Other scholars (Barth 2002) have theorized as to the potential usefulness of using knowledge as a means of enhancing understanding of the social situation however the Ethnography of Knowledge operationalises this from a practice-based perspective.

## 3.3 Social Construction of Knowledge

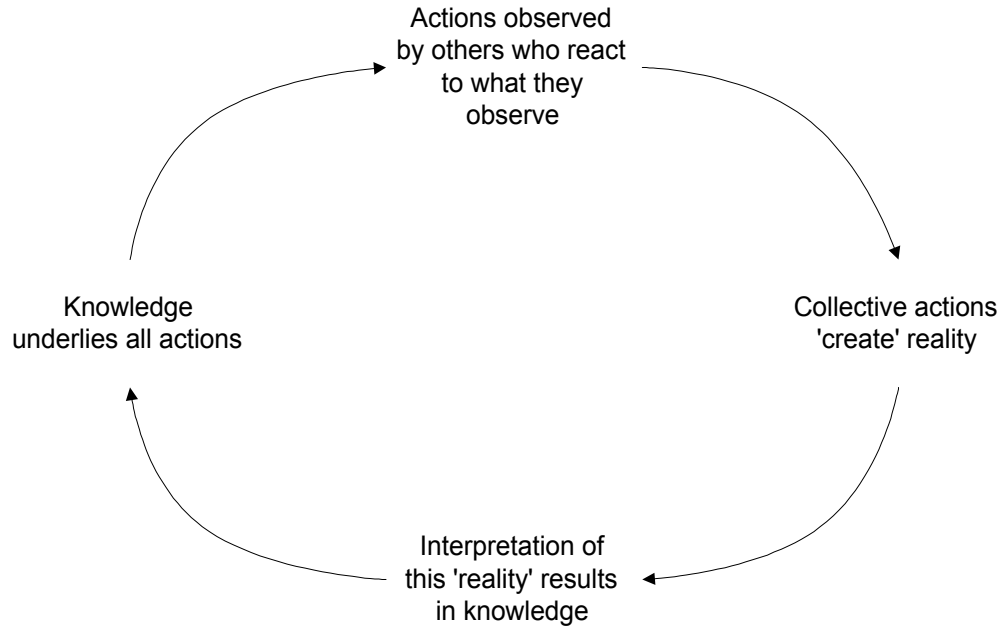
Participant observation allows a study of knowledge-in-action, and thus has to be based on the assumptions of knowledge being socially constructed (Fischer 1985; Latour 1987; Tsoukas 1996; Brown and Duguid 1998). Social constructionist theories argue that knowledge is the product of the social environment in which it resides and that it is

created by, bounded and constrained by that particular social context (Mannheim 1946; Stark 1958; Simonds 1978; Meja and Stehr 2004; Ryder 2004). Thus, "Knowledge is from the beginning a cooperative process of group life in which everyone unfolds his knowledge" (Mannheim 1946, p 26).

Research has shown that humans are bounded in their cognitive ability to see the world and understand it in relation to the people around them (March and Simon 1958; Conner and Prahalad 1996), although we have great pattern matching abilities (Loasby 2000). Thus over time actions of the social group are observed and made sense of by the group and this understanding becomes the social reality (Berger and Luckmann 1966). Individually we are not able to fully understand our environment because of our limited senses and cognitive abilities but together through social activities, interactions (Lazega 1992, p 26) and cognitive history we can learn to operate in our world. Our understanding of the world, what sense we make of it, is created through our collective actions (Weick 1995, p 17,30; Weick 2001, chpt 1), which create and recreate the world in which we live. By observing the contextual, social and dynamic (Raffles 2002) actions and being a full participant in the social setting a researcher can more fully understand the knowledge that underpins those actions, and thus the ongoing creation of that social reality (Berger and Luckmann 1966).

The Ethnography of Knowledge operates on a series of assumptions (represented visually in Figure 3.1, below) related to the social construction of knowledge.

**Figure 3.1 The Social Construction of Knowledge**




In the use of the methodology I assume that knowledge itself is not directly observable, although it underlies all action. Social constructionist approaches form the basis of this assumption in that what we observe as skills, practice, culture etc are underpinned by knowledge (Mannheim 1946; Berger and Luckmann 1966) and can therefore be interpreted as constituting knowledge in action. Actions are observable and others interpret and react to observed actions. These reactions create collective action and a shared reality. The shared reality is thus socially constructed and interpreted through our knowledge. To complete the circle, knowledge underlies actions.

The similarities to Figure 2.1, discussed in Chapter Two, are evident and by metaphorically combining the two figures it is possible to see how the Ethnography of Knowledge can assist us with understanding the socially constructed reality. As a participant-as-observer (Bryman and Bell 2003, p 324) I am able to both observe the actions (top of Figure 3.1, right hand side Figure 2.1) and am part of the social situation so I am able to derive the knowledge that I observe and develop a knowledge-based

understanding of how the collective action in the social setting creates the reality of that situation (right hand side of Figure 3.1, middle box and bottom of Figure 2.1). However, whilst participant observation allows a comprehensive understanding of the social situation, the interpretation to create the reality is individual and hidden (bottom of Figure 3.1, bottom and left hand side of Figure 2.1), and in part depends on the level of participant observation that one engages with (See Bryman and Bell 2003, p323-4). This is a limitation of the methodology meaning that the participant observer is only able to understand three of the four phases of the social construction of knowledge.

A taxonomical view of knowledge allows the concept to be unpacked further however there still is no one single, total and all encompassing view of knowledge but a variety of views of knowledge, all in some way valid. In the following section I shall attempt to elucidate some of these categorizations, however this will also not be exhaustive and will only concentrate on the types of knowledge that I have referred to in other chapters.

## *3.4 Knowledge Taxonomies*

There is no one all encompassing view of knowledge and thus it is necessary to present a number of different views of knowledge if one wishes to use knowledge to illuminate the social setting. Knowledge exists in many, sometimes contradictory, forms. To present a single view of knowledge risks the exclusion of other equally valid knowledge types which may be applicable to a single situation under observation. I represent here a series of knowledge taxonomies as they are presented in the literature on knowledge in organisations. The literature-based taxonomies I use I chose because of they were ones I observed in action in the social situation, and they allow a differentiation of the construct observed; there are of course others which may be equally useful and which

could be assigned in future work. Combined the knowledge taxonomies provides a greater understanding of the environment, particularly when used in conjunction with observational methods. They show that a single action can be represented as a number of different knowledge types.

This thesis is set against a backdrop of the vast and increasing literature on the Knowledge Economy, the knowledge-based view of the firm and Knowledge Management, although these remain very much in the background for me. Recently knowledge has become a focus in studies of the economy and society including organisations. Peter Drucker was discussing the importance of knowledge and knowledge workers in an organisational context decades ago (Drucker 1964) and continues to do so (Drucker 1993; Drucker 1999). Over the 1990s a number of theoretical areas have emerged including the Knowledge Economy (Hamel 1996; Neef 1999; Smith 2000), the knowledge-based theory of the firm (Grant 1996; Spender and Grant 1996; Nonaka et al. 2000; Kaplan et al. 2001) and Knowledge Management (Nonaka 1991; Leonard-Barton 1995; Davenport and Prusak 1998; Hansen et al. 1999; Dixon 2000), all of which focus on knowledge. As shown in the above discussion of the social construction of knowledge, knowledge can easily be seen as being at the core of our social reality. Knowledge is socially constructed and is everywhere and thus in this thesis knowledge forms the methodological means of further exploring the social setting rather than the core focus in and of itself. The thesis contributes to the above literatures by providing a means of empirically testing a method of understanding the contextualised knowledge underpinning social situations.

The following sections provide a brief, largely definitional discussion of some of the knowledge taxonomies demonstrated throughout this thesis. Many of them are interconnected and interrelated and thus they are presented as loosely grouped but are in no particular order and the order in which they reside does not reflect on their importance, perceived or otherwise. It is my proposition that all are important and necessary in gaining an understanding of the organisation in which they are found. As Cook and Brown (1999) note there is a tendency to treat all knowledge the same but knowledge comes in many different forms.

### 3.4.1 Tacit, Explicit and Codified

Many of the discussions and definitions of knowledge use Polanyi's (1966) philosophical works on knowledge as a basis for exploration, particularly when addressing the tacit and explicit nature of knowledge. Indeed the tacit / explicit, codified / un-codified, personified / codified debates have dominated the knowledge literature in recent times (Lam 1998b; Hansen 1999; Ancori et al. 2000; Cowan et al. 2000; Smith 2001; Balconi 2002; Johnson et al. 2002). The differentiations between tacit, explicit and codified knowledge is, I feel, one of the most contested areas in the study of knowledge.

*Tacit knowledge* is largely based on the work of Polanyi with his famous statement, "We can know more than we can tell" (1966, p 4) describing the reality of tacit knowledge. Tacit knowledge is below the surface and 'silent', unable to be articulated at a specific moment in time. It can be wrong but is hard to change because it is local, stubborn and not usually found in books or other textual accounts (Stewart 1997, p 73). This concept has been further explicated by neurological studies of the brain. These

studies show that the mind creates a set of neural images that lie below the consciousness (Nightingale 2003).

> "Consciousness acts as a searchlight over these constantly changing neural images and allows selected images that grab our attention to be set out and brought from what Polanyi called implicit subsidiary awareness into focal awareness. This has obvious evolutionary advantages – such as being able to concentrate on escaping from a predator, or attacking prey. Consciousness is a process, and tacit knowledge – in the form of unattended neural images – is involved in all our actions" (Nightingale 2003, p 156).

In the initial learning of actions it takes all of ones attention to perform the action, although over time the knowledge of how to perform the action becomes part of the tacit knowledge of the mind. Thus as one becomes more expert our understanding of our actions becomes more and more tacit. This leads to key difference between know-what and know-how, which will be discussed later in this chapter. Language is an example, perhaps the best, of this process. We learn language by instinct, by hearing others speak, not by some form of structured learning. Yet human use of language is extraordinary in its richness and ability to convey information and emotion. People cannot explain how they do this; language is therefore a tacit skill.

Tacit knowledge is *silent* knowledge that resides in ones head, it is below or behind the conscious mind (Cowan et al. 2000) it "cannot be easily articulated or transferred because it is uncodified and context specific" (Lam 1998b, p 1). One of my informants noted the nature of tacit knowledge when they said;

> "A lot of my job is in my head. Some of it I could break down point by point in [explicit] work instructions, but a lot of it I couldn't. There is a lot of my job that no one else could really take over. I might be able to teach someone what to do but they wouldn't have the knowledge of *why*."

Through this statement, one is able to see the inter-relationships between some of the various kinds of knowledge and the way they are interdependent and cannot stand alone without excluding other aspects of knowledge. The informant notes that much of the knowledge is held in their head and is thus both tacit and individual. They note that

some of it could be transferred perhaps through codification and thus be made explicit, however despite the potential to pass on some of the more procedural knowledge, the underlying thing that is associated with the sort of know-how knowledge that this person possesses is an understanding of why, that is know-why. All of these knowledge types will be discussed later in this chapter.

*Explicit knowledge* is knowledge that we are able to bring to our consciousness and make overt (Polanyi 1966). Frequently knowledge is made explicit through language. People say what they know and thus convey meaning. However, explicit knowledge may be never spoken but can be articulated in other ways. For example in sport, it is possible to teach someone how to play tennis or football by showing. The act of showing, especially if aspects are exaggerated will show explicit knowledge to the student. In this context, knowledge can be explicit but not codified because the skill involved in being a good tennis player is largely tacit, revolving around a skill learnt over time through personal knowledge held in the head of the individual. It is something that can be shown but to learn how to play like Roger Federer[35] is something that cannot be written down.

Often a dichotomous representation of organisational knowledge is presented identifying only two types of knowledge, that is, tacit and explicit with the view that knowledge is created through social interaction and converted from one type to the other and back again (Nonaka 1991; Nonaka 1994; Nonaka and Takeuchi 1995). As the taxonomies show, this perspective hides other views of knowledge. This framework has been criticised as being simplistic, for using categories that are not discrete, separable,

[35] Roger Federer is the best tennis player on the planet but he has had the same coaching as others. What sets him apart is not the explicit tennis playing skills but his tacitly held ability.

and stable (Tsoukas 1996, p 14), and for issues related to agency and how individuals create knowledge (Levina 1999, p 9). Some studies recognise that the tacit / explicit debate is only a part of the entire knowledge issue (Polanyi 1966; Lam 1998b; Malerba and Orsenigo 2000), which includes other knowledge types.

*Codified knowledge* is explicit knowledge that has been put into some code for transmission. One such example is the knowledge of the organisational accounting practices and figures held in the accounting system at ActewAGL. In order to be transmitted one must understand both the accounting process and the accounting system. Codified knowledge is a subset of explicit knowledge (Cowan et al. 2000). To be codifiable, knowledge must be explicit. Frequently codified and explicit knowledge are used as interchangeable terms. This can cause confusion as the two concepts are related but not the same. Thus sometimes people suggest that if knowledge is not tacit it is codified and thus available. But if it is explicit but not codified, probably most explicit knowledge, it is only available to the holder of that knowledge and to those the holder is prepared to share it with, if and only if, the recipient has the ability to absorb and understand that knowledge.

Many theorists believe that by codifying knowledge it becomes accessible, however this is not necessarily the case. Codified knowledge requires a ‘codebook’ (Cowan et al. 2000), or background knowledge and a common understanding used in interpretation, to decode it and make sense of it. If one does not have the key to the ‘code’ necessary for understanding the codified knowledge then understanding remains elusive. In the routines chapter I show an example of an informant rescuing codified but difficult to access knowledge about padlock combinations and making it both codified and

explicitly available through putting it on file. This shows the importance of codified and explicit knowledge to business organisations. It also shows that collective knowledge, or at least knowledge that should be collective, is often held by individuals and not shared. Sometimes this knowledge is tacit but sometimes it is simply not shared and so is inaccessible to the functional knowledge-base of the organisation. Codifying knowledge does not necessarily make it useful. As one informant noted, in the Procurement Section of ActewAGL,

> "the procedures are basically there for QA (Quality Assurance) but once they are written they are usually not read. It is easier to be shown something than to read a procedure. It comes down to the question 'could someone do the job by reading the procedures?' Basically I don't think they could. We did toss up the idea of disbandening the QA system but we didn't so the procedures are still there."

Thus the procedures are codified but because they are not used they have become out of date and thus are not an active part of the knowledge-base. As a consequence training relies heavily on informal channels, as discussed in the in/formal chapter, and the knowledge held is collective, that is it is held in individual heads within the group and transferred within that social environment on an as-needed basis.

### 3.4.2 Data, Information, Knowledge

A relatively common taxonomy related to knowledge is that of data, information and knowledge (OECD 2000; Boisot and Canals 2004). This is a stratified and, I see it as an often, over simplified typology starting with data.

> "Knowledge is commonly distinguished from data and information. Data represents observations or facts out of context that are, therefore, not directly meaningful. Information results from placing data within some meaningful context, often in the form of a message. Knowledge is that which we come to believe and value on the basis of the meaningfully organised accumulation of information (messages) through experience, communication, or inference. Knowledge can be viewed as both a thing to be stored and manipulated and as a process of simultaneously knowing and acting – that is, applying expertise" (Zack 1999, p 46).

*Data* are the raw figures that relate to some thing. On their own they convey no meaning, for example the letter "F" means nothing when taken outside a context. Information is the next tier in this taxonomy. In ActewAGL data makes up the numbers in the accounting systems. Without knowledge to interpret the data and make sense of it, the numbers don't mean anything and so remain data, with the knowledge of how the system works, of accounting principles and of how the data can be manipulated into meaningful categories, the entries in the accounting system become information.

*Information* is where data has been organised into meaningful categories. Or as Johnson, Lorenz and Lundvall note, information "is defined as a message containing structured data, the receipt of which causes some action by the receiving agent" (2002, p 247). Thus a set of alphanumeric characters organized into words and numbers comprehensible in the English language is information. But information is inert; information on its own does nothing.

When information is comprehended and put into a context it becomes *knowledge*. When a person sees meaning in the information it transcends information, resulting in knowledge. Knowledge can be used for decision-making and it can be the basis for new knowledge development. For example, in the Logistics Branch of ActewAGL, people interact with the system and through the exercise of knowledge are able to solve problems that are not immediately apparent without interpreting the information. They are also able to understand the potential capabilities of the system and thus manipulate it to produce outcomes that are not apparent to the layperson. This is discussed further in the in/formal and change chapters.

These classifications, particularly that of information and knowledge are often blurred, as a number of authors acknowledge (Chauvel and Despres 2002; Hildreth and Kimble 2002; Boisot and Canals 2004 ). In many ways information and codified knowledge are the same concept, one deriving from data and the other from tacit knowledge. Yet, I see both as being important to include particularly in an organisational context where information often forms the basis on which the more nebulous knowledge is created.[36] As discussed previously, exclusion of one or the other loses the richness of the study and fails to recognize that, in this taxonomic view, knowledge cannot exist without information to support it and information cannot be interpreted without knowledge.

### 3.4.3 Individual Knowledge, Collective / Communal Knowledge & Organisational Knowledge

*Knowledge is an individual thing*, formed through the processing of an individual human brain.[37] Knowledge is based on a belief that one has about something and is the result of human cognition, experience and perception.

Knowledge is a pattern-matching feat of the brain that often occurs without conscious logical deduction and thus people's knowledge is individual to themselves, although some of this knowledge can be shared. Polanyi (1966) notes the presence of tacit knowledge or knowledge that exists personally but that one often is not conscious of having, it being stored in the brain below its conscious level (Nightingale 2003).

[36] This conflation between information and knowledge has led to most of the Knowledge Management literature being primarily concerned with Information Management, as noted by Wilson (2002).
[37] I do not consider non-human knowledge as being able to be classified as knowledge in the same way although I recognise that humans do interact with the non-human and thus may have built knowledge around non-human elements. I will discuss this further later on in this chapter, under the heading embedded knowledge.

Through interactions between the conscious and unconscious mind one is able to match pre-conceived patterns (Nightingale 2003), so creating meaning at an individual level.

Yet, although individuals can hold knowledge, much knowledge is also *communal or collective*. This is demonstrated by some of the studies of groups working together (Roy 1954; Schwartzman 1981; Latour 1987; Schwartzman 1989; Pentland 1992; Barley 1996; Orr 1996; Schultze 2000), the knowledge-based theory of the firm literature (Conner and Prahalad 1996; Foss 1996; Grant 1996; Spender 1996), the routines literature (Cohen and Bacdayan 1994; Pentland and Rueter 1994; Becker 2004) and the literature that discusses communities of practice (Brown and Duguid 1991; Lave and Wenger 1991; Storck and Hill 2000; Wenger and Snyder 2000; Allee 2001; Cohendet and Llerena 2003). Collective knowledge is the knowledge that is multi-cephalous, that is, in many heads, it is held and shared by the collective group. It includes rules, codes and languages used to communicate and make sense within the group (Ancori et al. 2000), a distributed understanding that does not reduce the content of individuals heads (Brown and Duguid 1998, p 96) and an integral understanding of how things should be done, why things are done the way they are and what ought to be done (Sackmann 1991). Collective knowledge includes many of the nebulous concepts of organisational culture including shared common bonds held by members, signs and symbols only readily interpretable by members, rules, rituals (van Maanen and Barley 1985), norms, values, beliefs and assumptions which guide the thinking and behaviour of organisational members[38] (Pettigrew 1979; Smircich 1983; Smircich 1985; Ott 1989;

[38] In order to test the connection and inter-relationship between organisational knowledge and organisational culture I conducted a mind experiment when reading (Foss 2000, p 3) I replaced the term 'organisational culture' with the term 'organisational knowledge'. The paragraph still made sense, thus illustrating that organisational knowledge and organisational culture share many of the same characteristics. The difference I suggest is that whilst culture is largely still debated, using a social constructionist viewpoint and through a searchlight of knowledge, one is able to observe the actions as outcomes of knowledge in a social setting where much of organisational culture remains elusive. Many

Trice 1993; Moore 2002).[39] It can lead to groups developing solutions (van Maanen and Barley 1985; Koulopoulos 1997), decision-making and producing actions through organisational learning (Argyris and Schon 1978; Easterby-Smith et al. 2000; Cunha et al. 2002). Further, collective knowledge can be explicit in formal policies, procedures and mission statements. Such knowledge is collective and explicit, this will be discussed further under the taxonomy including encoded and embedded knowledge.

> "Cognitive limitations imply that no two individuals possess identical stocks of knowledge... because cognitive limitations prohibit one person, such as Y, from absorbing the entire accumulated knowledge and skills of another, such as Z (and visa versa). Thus each individual possesses experience, insights, or skills that are to some extent different from that of another" (Conner and Prahalad 1996, p 482).

Thus the synergies of collective knowledge allow a group to capitalise on the knowledge of individuals whilst expanding the collective knowledge, without negatively affecting the knowledge of the individual.

In an organisational context, much of the collective knowledge can be seen to be *organisational knowledge*. I have defined organisations as being: *two or more people acting in a coordinated way to achieve goods or services according to a set of defined business goals*. From this definition we can then define organisational knowledge as: the organisationally held shared beliefs, understandings and processes that enable people to work together in a coordinated manner to produce the goods and services that the organisation provides. Organisational knowledge exists "when individuals in an organisation share a set of beliefs about causal relationships that enable them to work together in doing something" (Sanchez 2001, p 5). For instance, as discussed in the in/formal chapter, although informal, participants value ActewAGL for being a "good

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actions of individuals are mediated by the cultural setting they are in but, culture in itself is a manifestation of the confluence of various socially constructed knowledges.

[39] Sonia Sackmann (1992) conducted an empirical study of a number of the aspects of culture discussed above using knowledge-based classifications of culture as a basis. Four types of cultural-knowledge were identified and these were used as a basis for identifying cultural groupings in an organisation. This study is an interesting variation on the use of knowledge taxonomies in understanding aspects of an organisational culture.

corporate citizen" and note the causal relationships between doing "the right thing by the customer" and the reciprocity and "lee-way" that that is allowed them in other situations. This "individual knowledge is necessary for developing the organizational knowledge base" (Bhatt 2001, p 70).

Organisational knowledge is collective consisting of the combined knowledge of the individuals that make up the organisation, although it is more than the sum of the parts, and allows the organisation to continue to do what it does. No individual is able to know how to make a complete motor vehicle for instance but as part of a collection of individuals, the individual is able to contribute knowledge to the organisation's knowledge. As Winter notes, "it is firms, not the individuals that work for firms, that know how to make" (cited in Hodgson 1998, p 185) products including cars, planes or electricity. This view is in line with the knowledge-based view of the firm, in that "organisations are social communities in which individual and social expertise is transformed into economically useful products and services by the application of a set of higher-order organizing principles" (Kogut and Zander 1992, p 384). In work communities, such as the Logistics Branch at ActewAGL discussed in the in/formal chapter, much knowledge exchange and training is informal. The actors unspokenly agree to share knowledge and so knowledge moves from being individual to individually held but nevertheless communal.

### 3.4.4 Organisational Memory

Part of the knowledge that is shared in the form of organisational knowledge is *organisational memory*. Nelson and Winter (1982), devote an entire section to knowledge and the routine as a vehicle for storing organisational memory (Becker

2003) and Cyert and March (1963) represent standard operating procedures in a similar vein, as discussed further in the routines chapter.

Organisational memory, is an instrument that enables the encoding, storage and retrieval of the lessons of history, despite staff turnover and the passage of time, through systems of socialisation and control (Levitt and March 1988, p 326). Such mechanisms include formal knowledge recording systems such as technology, documents, accounts, procedures, organisational structures, as well as informal organisational stories, and perceptions of 'how things are done around here', (Levitt and March 1988). Organisational memory provides the flexibility for an organisation to remember the lessons of the past and improvise (Moorman and Miner 1998; Weick 2001, chpts 3 & 12) or change them if they do not work and maintain their existence if they do. Cohen, Burkhart et.al, (1996, p 661) summarise organisational memory as being maintained through 1) the memories of the individual actors for their respective roles in the overall pattern, 2) a shared local language, 3) via physical artifacts, such as tools, spatial arrangements (physical space design), written codes or standard operating procedures or computer systems, 4) via organisational practices such as archives, rotations of personnel, maintenance of working examples or by building key assumptions into organisational structure, and 5) by means of globally shared language forms, such as retold war stories.

In the case of ActewAGL, many of the people have been there for a long time and thus they have long personal memories of the organisation and its many iterations, management styles and ways of doing things. The staff can articulate the historical basis for decisions and can track the development of events. As with all organisational

settings the participants share a local language, in relation to the computer systems, to technical names for stocked items and in relation to the organisational structure. The ability to use the local language increases with product knowledge and of course,

> "you ask if you don't know. Water isn't too bad because you've got bends, you've got Ts you've got flanges, you've got couplings, you've got nuts to a certain extent, they call them nipples, cast iron, ductile iron, PVC, brass. That's what you look for, you look for key words."

Along with technical language, language also has particular connotations known in that environment, such as classifications of people, including themselves as "baggy arses" (workers), "shiny's" (the level below management), "techos" (technical people, often engineers), PO's (Project Officers or Procurement/Purchasing Officers – depending on context) and "Boys" (apprentices). Comments such as "he's a communications engineer what do you expect" are used without explanation due to the shared understanding held by the people.

In the Warehouse the self-directed work teams rotate to try and give shared organisational memory and understanding of particular roles, as discussed in the routines chapter.

### 3.4.5 Procedural and Declarative Knowledge

Different kinds of organisational memory include 1) procedural (skill) memory and 2) declarative (fact) memory (Moorman and Miner 1998, p 698). Organisational memory involves the remembering of aspects of the way the organisation does things; this is collective but takes a number of different forms. For instance, "Forgetting is a far more active process for declarative memories of theories than for procedural memories of skills"(Cohen et al. 1996, p 661).

*Procedural knowledge* is defined as explicit know-how (which will be discussed below) which "lays the foundation for efficiently coordinated action in organizations" (Zack 1999, p 46), guiding action and decision-making (Reber 1993, p 16) in both motor and cognitive skills (Cohen and Bacdayan 1994, p 557). Procedural memory in humans is

> "centered on skills, or know-how, rather than on facts, theories or episodes. …Procedural memory aligns with many of the characteristics of highly routinised action patterns, [where] it seems likely that much effective organisational performance involves a mixture of 'automatic' or 'tacit' elements together with a certain amount of 'decision-making' or 'problem-solving' that is much more deliberative and self-aware in its character" (Cohen et al. 1996, p 666-7).

"A key [to] procedural memory is that it becomes automatic or accessible unconsciously …[and] includes [for instance] the skills needed to ride a bike or use a typewriter. Procedural memory, therefore, often represents tacit knowledge for individuals and organisations" (Moorman and Miner 1998, p 708). Further, because of its long delay times and difficulty in transfer, it may exist even in the face of less than optimal outcomes (Cohen and Bacdayan 1994) or represent inertia, as discussed in the routines chapter.

*Declarative knowledge,* in contrast, is descriptive knowledge of some thing. It gives the ability to recognise and classify concepts, things and states of the world (Zack 1998, p 10). Declarative knowledge provides a shared explicit and articulatable (Reber 1993, p 16) understanding that allows for communication and knowledge sharing. In this way this concept is similar to absorptive capacity or the previously discussed codebook. For example, in an academic discipline, declarative knowledge is the shared body of literature and understanding of that literature that a discipline holds. Thus the importance of declarative knowledge is "in making sense out of new situations, deriving meaning from unstructured situations, or using principles to predict outcomes" (Moorman and Miner 1998, p 710). This type of knowledge allows the participants in the Warehouse and in the Procurement Section to engage in problem-solving

behaviours. Through declarative knowledge they are able to assign meaning to situations that are variable, in the front and back of the processes, as in the Warehouse, or to do "detective work" in the middle of the processes in the Procurement Section, as discussed in Chapters Five and Six.

### 3.4.6 Know-what, Know-how, Know-who and Know-why

Gilbert Ryle (1958) developed a two-fold taxonomy of knowledge incorporating *know-how* and *know-that*. Lundvall and Johnson expanded this taxonomy to four (OECD 2000) - *Know-what, why, how and who:*

*Know-what* is knowledge about "facts". "How any people live in New York, what the ingredients of pancakes are, and where the battle of Waterloo took place are examples of this kind of knowledge"(OECD 2000p, 127). This sort of knowledge is close to and often taken for information. However, know-what is held in someone's head, although it can be broken down into bits and communicated as data. Know-what is also called cognitive knowledge, that is the "basic mastery of a discipline that professionals achieve through extensive training and certification" (Quinn et al. 1996, p 72).

In the Procurement Section of Logistics, as discussed in the in/formal and routines chapters, much of the training is through informal means, yet at least in the initial stages of training, the knowledge exchanged is know-what. That is, knowledge about what particular screens and modules in the accounting package do, where you need to be (in the system) to perform particular tasks, understandings that "if it is ERS (autopayment) you don't touch it" or that if an invoice doesn't have a purchase order number and a receipt number or there are other inconsistencies a trainee is entitled to put it to the

bottom of the pile because it is too hard, as shown in this extract of my ethnographic notes.

> "The mail came in at 11:50. [My colleague] took some of the orders. I went through the remainder and weeded out the easier ones for my afternoon's work. The difficult ones we both put back. We were both learning the system. [Of course sometimes this backfired as was the case when] … I took the invoices that a colleague had put back, only to realise that I had put them back as too hard the day before. One I had put back [a more experienced colleague] had already encountered with some things matched, some things not receipted and a number of lines not even listed on [the accounting system. I was told,] 'Don't do it, if I can't do it you won't be able to.'"

The trainee may not know *why* it is too hard or what they need to do to attend to it, this knowledge comes with experience and is know-how, but they are able to recognise the fact that they may not yet have the skill to pay that particular invoice, thus they have know-what or knowledge, albeit limited, of certain related facts.

*Know-why* is knowledge about principles and laws of motion in nature, in the human mind and in society, that is, principles that explain. This kind of knowledge has been and is extremely important for technological development in science-based areas such as the biotechnology, pharmaceutical, chemical and electric/electrical industries (Nelson 2000). Access to this kind of knowledge will often make advances more rapid and reduce the frequency of errors in tasks involving trial and error. It represents

> "systems understanding [which is] deep knowledge of the web of cause-and-effect relationships underlying a discipline. It permits professionals to move beyond the execution of tasks to solve larger and more complex problems – and to create extraordinary value. Professionals with know-why can anticipate subtle interactions and unintended consequences"(Quinn et al. 1996, p 72).

In Logistics, people employ problem-solving skills in carrying out the tasks, however there are some people who are particularly skilled at this. These people have become the 'go to people' for colleagues throughout the organisation, as discussed in the routines and in/formal chapters. They tend to experiment with the systems and thus they know what the cause and effect relationships are. For instance, one day I accidentally pressed CTRL F6 instead of CTRL F5 and thus instead of copying the previous line I copied the

previous cell and so the calculations on the system did not equate. Two of my colleagues and I were unable to explain the error until I asked a colleague that had know-why and he was able to work back through the situation and realise what I had done wrong and show me how to cancel the order and start again, that being the only way to fix the problem. Much of this knowledge "comes from being here for a long time. You get to know the place and the people" and gain an understanding of how one aspect of the work interacts with related actions. This type of big picture knowledge is rare, as many people have limited ability in conceptualising the intended and unintended consequences of actions. Informants that hold this sort of knowledge recognise the importance of knowing how things worked noting such things like, "I might be able to teach someone what to do but they wouldn't have the knowledge of *why."*

*Know-how* refers to skills and expertise, or the ability to do something.[40] Ranging from manual dexterity in tasks to purely mental activities, it plays a key role in all 'doing' activities. For example,

> "how scientists' need [both] skill formation and personal knowledge. Even finding the solution to complex mathematical problems is based on intuition and on skills related to pattern recognition which are rooted in experience-based learning" (OECD 2000, p 15).

Most of the actors in Logistics possess significant know-how in that they know how to make the systems do what they want them to do or to deliver the information they want, have an understanding of product knowledge, as discussed further later in this chapter,

[40] Social scientists studying knowledge exchange in organisations, how people learn or the knowledge-bases of certain occupations have sometimes likened know-how with what they call 'working knowledge' (Kusterer 1978; Scarselletta 1997). Although I do not specifically incorporate 'working knowledge' in the taxonomical views of knowledge presented in this thesis, it is assumed as a given. Working knowledge is loosely defined as know-how knowledge which is developed on-the-job in order to assist with individual problem-solving. It is tacitly held, not easily articulated but accrues from experience and varied opportunities. 'Working knowledge' is evident in the way workers 'feel', 'see' or know things or simply how they 'know from experience' (Scarselletta 1997, p 206).

and are able to carry out specialised tasks that can only be learnt over time. Where their own knowledge is inadequate they draw on informal networks.

Networks form to facilitate cooperation to share and combine components of know-how. Know-how is developed and kept within the boundaries of a social grouping, such as a work unit. As the complexity of the knowledge-base increases co-operation also increases. These networks can become very large and sophisticated, when the knowledge-base is complicated and there are many synergies between network participants. This is demonstrated in the social mapping section in the in/formal chapter.

As a collectivity, network-based groups learn by drawing on know-how (knowledge in practice) or know-why (understanding) (Nelson 2000; Nelson 2003) to improve their collective know-how. Groups are composed of individuals. To work as a coordinated group the individuals must have some common or collective knowledge. As people learn, this learning is communicated to the group and the group in turn learns through adjusting routines.

*Know-who* involves an understanding of the social network, of who knows what and who knows what to do (Johnson et al. 2002, p 251). It entails the ability to co-operate and communicate in social setting with diverse kinds of people and authority figures.

"The interesting thing about Logistics is that we deal with everyone, people outside of Logistics and people outside of the organisation, but we rarely meet them", thus in the Logistics Branch of ActewAGL, a number of the staff have extensive know-who. Some people may be approached by a colleague to see if they "have any contacts in AGL in

Victoria that could be approached regarding a set of specifications", may have knowledge of who in particular areas always makes mistakes or who are "one of the guys who know everything out at Greenway" or even for the telephone number of someone that could help. The people who are well connected and who possess know-who are well known and respected for that knowledge. People comment that certain people know a lot with replies to the effect of "yes she does, especially about systems and who to go to." When asked from whom people seek information, repeatedly individuals identify colleagues that have know-who and note that if the colleague did not have the answer they would know who to speak to in order to get it. An informant noted that,

> "A lot of the information I use comes down to knowing where to find things, how things used to be done, where things are archived … People come to you for information because you have knowledge of what has gone on in the past. So you give them the information. It is about being able to identify people, having the knowledge of who knows what. This comes from being here for a long time. You get to know the place and the people. … It is really a matter of going to the right person, the person with the knowledge to make the decisions."

Know-who is gained in social interaction and sometimes through specific training and information sources. Such things as induction programs, organisational charts and 'yellow pages' of knowledgeable people are intended to create know-who in organisations. Know-who also develops in everyday relationships with friends, family, peers, colleagues, customers and other actors. In ActewAGL those people designated as leaders (at various levels in the hierarchy) are sent on an intensive leadership program over some days and are also treated to the occasional leadership day including an off-site luncheon for the "purpose of keeping you informed. You need to be informed so that you can do your job." The leadership program is partly aimed at professional development and partly aimed at establishing networks and allowing people to gain know-who, as discussed in the in/formal chapter.

My premise is that none of these types of knowledge stand alone, but all overlap in a myriad of ways to form the complex knowledge in organisations. Informants repeatedly identified powerful people based on their use of knowledge, as discussed in the power chapter. That is, they are able to identify people with know-why, know-how, know-what and sometimes know-who knowledge. As one informant said when identifying the people with power,

> "[people are powerful] because [they] *know*. …Know how everything works, you can't get anything past [them], [they have always] got an answer and they're normally correct. … When it comes to the organisation, the people with power are the people that know what to do and how to get things done."

### 3.4.7 Expert Knowledge / Product Knowledge

Familiarity with tasks undertaken in a work environment produces a degree of expert or product knowledge. When one first learns an action a great deal of attention is required in order to replicate that action, although over time how to perform the action becomes part of the tacit knowledge of the mind. Thus as one becomes more expert in completing a task, our understanding of our actions becomes more and more tacit. As Nightingale says;

> "Since we can only concentrate on one task at a time, there are obvious evolutionary advantages to moving established behaviours out of conscious control and into our tacit background knowledge where they can develop on their own. This makes expert knowledge, built up through practice, extremely difficult, if not impossible, to articulate and creates a distinction between know-what and know-how" (2003, p 158).

Know-what is typically not tacit, although know-how is usually at least partially tacit, especially when it represents expert knowledge.

*Expert knowledge* is the know-how knowledge that an expert has about how to complete a task in a manner that is unconscious. Where a skilled practitioner has skills that she cannot deftly articulate, intuition about the most appropriate response to a professional situation or understandings of the intricacies of the technology or processes, this

knowledge (which is often tacit, and thus subjective, personal and context specific) (Nonaka 1991; Ford and Sterman 1997) is expert knowledge.

> "Because these trained gut feelings are based on first-person experience, they have to be learned at the bench and cannot be articulated, codified and transmitted. As scientists learn to solve problems, they learn to follow their gut feelings .... about potential problems and solutions, which enables them to avoid intellectual dead-ends" (Nightingale 2003, p 160).

This knowledge resides in the tacitly held mental models of the process participants (Ford and Sterman 1997, p 2) and includes knowledge about system structure and decision processes.

Such knowledge is reflected at ActewAGL in the way people become Specifying Officers.

> "One becomes a Specifying Officer through having technical knowledge. They hate the role so don't select to become a specifying officer but rather are selected or thrown into the job. To a large extent it goes with the position. For example, Silvano is a protection engineer so he gets the role of Specifying Officer for anything that goes with protection."

Thus the expert knowledge resides (often tacitly) in the position and the skills necessary for that position, skills learnt over time. In the context of the Warehouse, some expert knowledge takes the form of *product knowledge*, which is a pay related competency that the staff are required to meet in order to advance to the next increment. My ethnographic notes and the competency manual note that "this includes knowledge of storage, handling and characteristics of materials, quality control, [processes for] reporting damaged goods, knowing locations and being able to identify items with some understanding of their use." However, whilst the competency system reflects some of the formal aspects of product knowledge, informally much of the knowledge of Warehouse operations, products, their use, location and stock codes are built up over time by being immersed in the environment. Or as one informant put it, you gain important product knowledge,

> "by walking around and taking notice of what people are ordering. 'Receipts' is also good for that because you see the items as they come in. If you have a guy who always orders the same

> thing and he is away and another guy comes in to do his job and asks what he orders you can say 'I don't really know but I have a bit of an idea, lets go for a wander and have a look."

This kind of knowledge is gained over time and where "a new staff member wouldn't know what they were [in the case of a particular product], we know what they are talking about just by their description". This kind of product knowledge is based on familiarity and means that the Warehouse staff and some of the Purchasing Officers can, for instance, quote stock codes by heart and occasionally identify if incorrect items have been ordered by the Project Officers. In this situation, it is the expert "knowledge [which] has shown up some engineers that have had the wrong [specification] drawings or have ordered the wrong things. I think they are grateful for that."

### 3.4.8 Embodied, (Disembodied) and Embedded Knowledge[41]

Knowledge is held in the heads of individuals, however given social constructionist arguments, it can also be held in objects, technologies and artifacts.

*Embodied knowledge* is contained within people (bodies) or in the case of materials or software etc this can be called embedded knowledge, disembodied knowledge is held outside of people (not in bodies) (OECD 2000).

Knowledge is embodied because it is contained in a person (body), "embodied in particular people and die[s] with them" (Dowrick and Day 2003, p 3). As it appears that people can only hold so much knowledge in their brains (perhaps evidenced by the way

[41] Although I have not incorporated all the categories in this thesis, other authors have built on this fundamental taxonomy. Thompson and Walsham (2004) empirically tested Blackler's (1995) taxonomy which adds *embrained knowledge* being knowledge that is "dependent on conceptual and cognitive abilities" (Blackler 1995, p 1023), *encultured knowledge* which can be viewed as "the process of achieving shared understanding" (Blackler 1995, p 1024) and the complementary *encoded knowledge* which Blackler defines as "information conveyed by signs and symbols" (Blackler 1995, p 1025).

we 'forget' obsolete or irrelevant knowledge that we once knew), it is very difficult to say that the level of embodied knowledge has gone up over time, except as a function of increased population.

Knowledge can also be embodied within something, not just people with bodies. Nelson (2000, p 116; 2003, p 910) uses embodied in the following way; "In the case of heart surgery, like in most modern technologies, much of the technique is embodied in materials, apparatus, and other artifacts." This meaning for embodied knowledge is basically the same as the meaning I give to embedded knowledge, except that we reverently tend not to talk about humans having embedded knowledge.

*Disembodied knowledge* is knowledge not embodied in people.[42]

At ActewAGL considerable effort and resources were put into the REMAP project, as discussed further in the change and routines chapters, however this was disbanded before it came to fruition. Nevertheless the disembodied knowledge that was created as a result of the project continues to provide a direction for many of the people in the organisation who were involved with the change management efforts of REMAP.

The weakness with this taxonomy, I feel, is that it disregards the social nature of knowledge assuming that knowledge is individual where each individual starts from a

[42] Disembodied knowledge is a further aspect of this taxonomy. I have not specifically used disembodied knowledge however it is worth noting. The key concept is "ideas which are disembodied and can last forever" (Dowrick and Day 2003, p 3). The concept of disembodied knowledge is relevant to organisations as it encompasses knowledge that is not held by an individual but which represents culture, institutions, rules of the game, norms and beliefs. It represents the vast body of knowledge and learning that has gone before and is built on to create ways of looking at the world. Disembodied knowledge can be found in scientific knowledge, institutions, training course and textbooks. This view of knowledge assumes that there is some 'pure' knowledge out there that can be built upon.

point of built up knowledge. It is possible however to presuppose that throughout evolutionary history we have built up knowledge, intrinsically social in nature, but which nevertheless allows people to expand their individual knowledge.

*Embedded knowledge* is where knowledge from a source is 'put into' an object or actor (Langlois 1999). That is, by designing a machine knowledge is put into that machine or object. For example a telephone is designed with the knowledge embedded into it of people's bodily proportions and how they will use the phone along with technical knowledge as to how the phone actually works. As no-one is needed to make the phone produce an action once it in place it can be thought of as having knowledge embedded in it. In ActewAGL there are over 91 different types of stocked padmounts and transformers. These all have the fundamental embedded knowledge of how a transformer works but their purchase also comes down to individual knowledge and preferences of the 'techos' and Project Officers. Similarly, the processes are heavily reliant on the technological system. The accounting system holds embedded knowledge in the form of information, which can be extracted and manipulated according to the knowledge and problem-solving skills of individuals. The technology also embodies the principles of accounting and accounting knowledge. Knowledge is embedded in organisational routines allowing the repetition of the routines, as discussed in the routines chapter.

### 3.4.9 Distributed Knowledge

Whilst knowledge can be held in objects artifacts and people, much of this knowledge is *distributed knowledge* (Tsoukas 1996). Distributed knowledge is "knowledge that is not possessed by any single mind, but 'belongs' to a group of interacting agents, [which]

somehow emerges from the aggregation of the (possibly tacit) knowledge elements of the individual agents, and can be mobilised for productive purposes"(Foss and Foss 2002, p 2). That is, it is common or shared knowledge, such as that found in routines (Becker 2004, p 646-7). "Loosely, knowledge is distributed when a set of agents knows something that no single agent (completely) knows" (Foss and Foss 2002, p 8), that is, "knowledge still ultimately resides in the heads of individuals; however, when this knowledge is combined and 'aggregated' in certain ways, it means that considered as a system, a set of agents possesses knowledge that they do not possess if separated" (Foss and Foss 2002, p 9).

The obvious example of distributed knowledge in Procurement is how when people do not have the knowledge themselves of how to deal with a particular situation they will draw on the knowledge of their colleagues to come up with a solution. The social mapping exercise discussed in the in/formal chapter (see Appendix Four) clearly shows the reliance on the distributed knowledge of the group. The people in Procurement rely on the accumulated collective knowledge of the group to solve problems, just as the literature shows that technicians do (Orr 1990; Barley 1996; Orr 1996; Pentland 1997; Scarselletta 1997).

### 3.4.10 Information Processing View of Knowledge and the Cognitive View of Knowledge

The *information processing view of knowledge* originally stemmed from the computer science, psychology, systems theory and neuroscience work of Simon, Newell, McCulloch, Minsky et.al, where a key task of the brain (or any cognitive system) is to represent or model events and objects as accurately as possible. Knowledge is seen as

being universal; explicit and capable of being encoded and stored, and easy to transmit to others (von Krogh 1998, p 134).

Information processing theories propose a single cause for a set of effects rather than a set of causes for the set of effects. That is, it can be regarded

> "as really only the physical manifestation of another deeper, abstract causal process which [advocates] claim is part of the fabric of reality – in the same way that the laws of physics are. This is why information processing explanations can ignore hardware and consciousness" (Nightingale 2003, p 165).

Under this approach, all cognitive and behavioural capabilities can be reduced to 'code' or structured data that is able to produce the necessary instructions for its processing (Cowan et al. 2000, p 216). This model does not address the cognitive view of knowledge but assumes that most knowledge can be made explicit and is thus able to be reconstituted at a later time by the same of different groups, but it also notes that some knowledge remains uncodifiable because of the cost, ineffectiveness and complications involved in doing so (Cohendet and Steinmueller 2000; Cowan et al. 2000).

In the Warehouse at ActewAGL, as discussed in the in/formal and routines chapters, an information processing view is often taken in relation to the processes. It is assumed that the procedures provide the 'codebook' and that if the actors simply follow the instructions automatically tasks will be achieved and mistakes reduced. The problem with this assumption is that is fails to take into account the complexity of the tasks, the irrationality of humans and to acknowledge that the processes in the Warehouse are not always linear and thus it is not always possible to carry out tasks in a linear / cause-effect way. That is the cognitive view, utilising pattern matching and numerous variables is a more appropriate way of describing these processes.

In contrast to the information-processing view, another group of cognitive scientists see knowledge in terms of the *cognitive view*. They see human action as the result of trial and feedback learning, not based on logic (Nelson 2000, p 116). In the information processing view, codified knowledge in the form of information is seen as an input, which is processed to produce a standard action. In the cognitive view, data is received as an input and this is processed by the grey box (grey rather than black because brain matter is grey) of the brain to produce pattern matching resulting in an action, where information is *one possible output*. Thus the information processing view addresses the conversion between data and information as it occurs in the form of a 'codebook', the cognitive view addresses the neurological processes, which convert data to action.

## *3.5 Conclusion*

This chapter presents a number of different knowledge taxonomies that I have used throughout this thesis to illuminate and add depth to the ethnography. I have briefly illustrated some of these (although there are others that I have not included in the methodological exploration of the thesis) in this largely definitional chapter and explore them and others more deeply throughout the rest of the thesis.

Knowledge itself is not visible but the knowledge types can be explicated through participant actions in the social setting context. Ethnographic methods allow the actions associated with knowledge to be observed and thus in combination a greater understanding of the social setting is obtained. Yet knowledge is not an equally valid lens in the interpretation of all social situations and all themes in the thesis, as will be shown in the following chapters.

Knowledge is often presented as a single definition (varied according to the angle the work is taking), however I argue in this chapter that there is not one single type or definition of knowledge. By limiting the different types of knowledge other possible types of knowledge and the different applications of knowledge are obscured. The different ways knowledge can be used enables a greater understanding of the complexity of the social setting by showing that a single incident can be explained in a number of different ways.

In my fieldwork I observed many different kinds of knowledge-in-action and have sought to use them to aid the explanation of the ethnographic account. By using the Ethnography of Knowledge I enrich many of the themes that emerged from my ethnographic analysis, place knowledge-in-action in context, and incorporate the importance of studying knowledge in an organisational social setting, with the study of knowledge itself as a socially created construct. Chapters Five to Eight explore some of these themes and show how work gets done in ActewAGL. The following chapter completes Part Two by building on the introduction to the field site presented in Chapter Two.

# 4 Chapter 4 – ActewAGL

## *4.1 Introduction*

ActewAGL is a diversified, semi-government owned utility providing services to the Canberra[43] community and surrounding areas. It evolved from being part of a Federal Government Department to now being partially privately and partially government owned.

This thesis is based on fieldwork conducted in the Logistics Branch of ActewAGL over an eight and a half month period from July 2003 until March 2004.

This chapter forms the final chapter of Part Two. It sits with the methodology chapter and the knowledge chapter as it provides background information placing the rest of the thesis in context. The chapter provides an outline of the historical basis of ActewAGL, the derivation of the organisation in its existing form and its accompanying ownership and internal structures. It also addresses the people, functions and characteristics of the organisation. The chapter will then explore the Logistics Branch of ActewAGL as the primary field site for this study. In reading this chapter the reader should treat it as background information to the context of the thesis. It is not ethnographic in nature and nor does it discuss the Ethnography of Knowledge but is a useful addition for preempting many of the issues discussed throughout the thesis. For example, this chapter outlines the ownership structures of ActewAGL, this could be seen to be periphery however the ownership structure is important in understanding other issues

[43] Canberra is an Australian city and a state in its own right. Canberra forms the ACT (Australian Capital Territory) and locationally is the seat of the Australian Federal Government, however it has been governed by a state government since 1987. Canberra is home to approximately 320,000 people. It is situated approximately 3 hours drive from Sydney and approximately 7 hours from Melbourne.

pertinent to ActewAGL such as change, power and even the way the work gets done largely informally.

## *4.2 Role of Utilities in Australia*

Utility companies traditionally reside in very stable environments with little change to their core technologies and functions (Sutcliffe and Weber 2003; Van Vliet 2003), yet utility companies in Australia are beginning to face a changing environment. Full retail competition for electricity was introduced into the Australian Capital Territory (ACT) on July 1st 2003 and Gas has been fully contestable since 2002 (ActewAGL 2003a). Thus where utility companies, such as ActewAGL, have previously held a monopoly on the market (Nelson 2003), such a monopoly is no longer guaranteed and utility companies must be more competitive in attracting and retaining customers because now the customers have a choice.

## *4.3 Functions of ActewAGL*

"ActewAGL is an electricity, natural gas, water and sewerage services utility that is based in the Australian Capital Territory. Outside its home base, ActewAGL sells electricity in the south-east Australian contestable market and provides skilled services elsewhere in Australia and overseas" (ActewAGL 2003b).

In this capacity ActewAGL is divided into two partnerships, ActewAGL Distribution and ActewAGL Retail. The former is responsible for operating and maintaining the water and sewerage networks under contract to ACTEW Corporation (a company wholly owned by the ACT government), for the network side of the energy business and

for providing financial, HR, IT and legal services to ActewAGL Retail. The latter is responsible for customer services including billing services, marketing and selling of energy resources including the procuring of energy supplies and forecasting energy needs (ActewAGL 2003a, p 2).

"ActewAGL is committed to the sustainable use of energy and water resources, both locally and internationally" (ActewAGL 2003b). This commitment can be seen in a number of business and green energy including Ecowise Environmental, ActewAGL Solar and ActewAGL Hydro Power.

ActewAGL operates the TransACT telecommunications business under a management services contract with TransACT, providing video on demand, high speed Internet connections, free to air and pay television services and mobile and fixed line telephone services. Although ActewAGL provide operational and management services on behalf of TransACT and TransACT staff have been seconded to ActewAGL, TransACT remains a separate company with its own board, shareholders, customers and infrastructure (ActewAGL 2004d; ActewAGL 2004f). The aim of this 'strategic alliance' is to reduce TransACT's operating expenses and make it more competitive in the market (ActewAGL 2004d; ActewAGL 2004f).

Ecowise Environmental Pty Ltd is 100% owned by the ActewAGL Distribution partners, and functions as part of the ActewAGL business providing scientific laboratory services, hydrology, hydrography, aquatic ecology and geographic information systems.

The ACT Government has a good deal of influence over ActewAGL. ActewAGL provides the ACT government with a source of revenue and the provision of essential services. The ACT government utilises ActewAGL's capacity to provide these services, particularly since Canberra is a public service town and the provision of such services is limited by the lack of private sector suppliers.

## *4.4 History of ActewAGL and its Predecessors*

The history and structure of an organisation is influential in defining the socially created organisational culture as represented by the organisational founders and followers (Moore 2002). Like all social systems, the study of organisations profits from exploration as a continuing system incorporating past, present and future (Pettigrew 1979). The following sections provide a historical and structural overview of ActewAGL. The historical milieu of ActewAGL directly impacts on a number of important factors represented in the data chapters of this thesis. For instance, the public service and monopolistic origins of the organisation directly link to how the organisation is able to react (or not) to change (see Chapter Seven). The way the organisation was restructured in the wider social climate of self-government and privatisation resulted in the unusual ownership and power structures that the organisation must cope with both internally and in dealing with the wider community and government, as discussed in Chapter Eight. The physical locations of ActewAGL staff results in an environment that operates both informally and formally, as discussed in Chapter Six. Similarly the characteristics of the organisation are often informally guided but in essence represent the routines (Chapter Five) of how things actually get done in ActewAGL. The four themes of routines, in / formal, change and power together provide an overall picture of how work gets done at ActewAGL but the basis

for these themes are formed through the historical and structural basis of the organisation.

### 4.4.1 Early Days

ActewAGL was established in 2000 as a result of a joint venture between the ACT government owned ACTEW Corporation and the privately owned AGL (Australian Gas Light Company). However, under the auspice of its predecessors, it had been serving the Canberra community since the establishment of the city of Canberra as the seat of the Australian Government.

After much deliberating over a site on which to build the new Australian capital city, Canberra was selected in 1904 and the Federal Capital Territory was formally established on 1st January 1911 (later renamed the Australian Capital Territory or the ACT). At this time the Department of Home Affairs was responsible for building the new city (Donovan 1999, p 3-6). Choosing an appropriate site with access to water, at least 100 miles from both Sydney and Melbourne with a suitable climate[44] was only the first of the deliberative efforts. A design competition was held and won by Walter Burley Griffin, an American who was then appointed as the Federal Capital Director of Design and Construction.

The city, named 'Canberra' in 1913 by the wife of the Governor-General, has now grown to over 300,000 people but in the early days it was estimated that the population should not exceed 25,000. With this figure as the target it was considered that a single

[44] According to the commentary at the Canberra exhibition which discusses the history of Canberra, the forefathers, being of good British stock, alleged that "better people live in cold climates" so Canberra was chosen, despite the fact that in the summertime the temperatures are frequently unbearably hot.

dam should be able to provide sufficient water for the population[45], aided by the then revolutionary electricity for pumping water to the inhabitants. Under the supervision of Henry Gustav, the Department of Home Affairs supervising engineer, construction work began on the Cotter Dam in 1912 (Donovan 1999, p 10).

The powerhouse, started in 1912 and commissioned in 1915, was the first permanent building constructed in the city around which a sense of community developed. The new city was to be run on electricity, as unobtrusively as possible with no smoke stacks and any power lines to be connected to the rear of properties to maintain the feel of the garden city (Donovan 1999, p 23-4). The completed powerhouse complied with what was to become the Australian standard of a three-phase power generating system and was based on the power requirements needed to pump the water from the pumping station at the Cotter River, as shown in Figure 4.1. Although the power station was under the auspice of the Department of Home Affairs, this department did not possess sufficiently qualified people to run it so the Department of Works and Railways provided the personnel (Donovan 1999, p 15-18). By 1921 the Department of Works and Railways assumed full control of the power station (Donovan 1999, p 296).

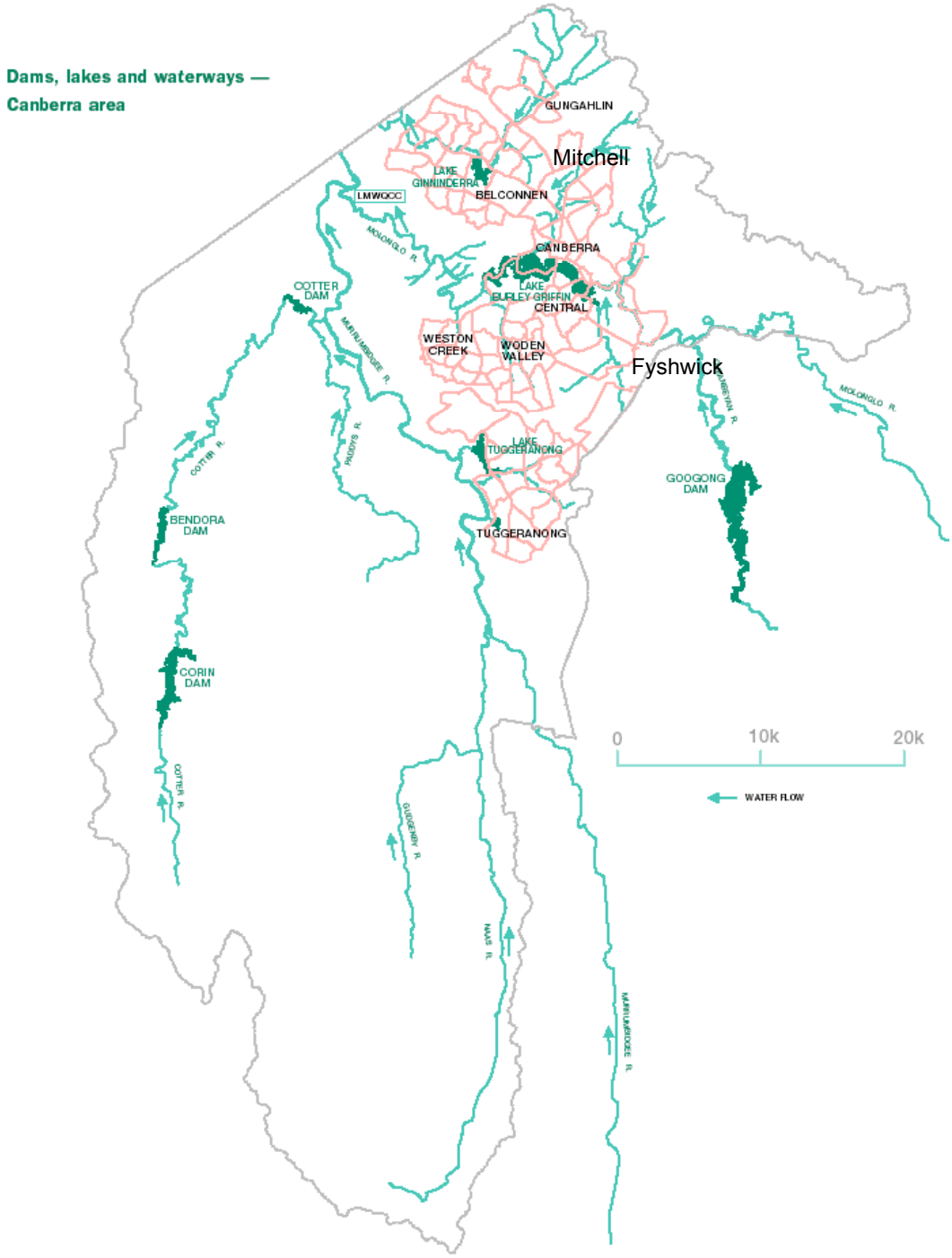
The provision of water and electricity were considered key essentials to life in the new city but equally important was provision for the removal of effluent waste. Sewer construction began at Weston Creek in 1915 and continued over some years, interrupted by a Royal Commission charged with examining Canberra's administration (Donovan 1999, p 20). The Weston Creek sewerage treatment plant, as shown in Figure 4.1, was

[45] With the increasing population it was in fact necessary to build an additional four dams. With the current drought situation political debates are again raging as to the need to build another.

completed in 1927, coinciding, as planned, with the opening of the provisional Parliament House (Donovan 1999, p 30).

From the beginning the bodies supplying water and electricity to the new capital were subject to changing political alliances, governance and reporting structures. For a short time between 1921 and 1924 the Federal Capital Advisory Committee was responsible for planning and development of Canberra (Donovan 1999, p 22-3). The Federal Capital Commission replaced this body in 1925 and an electrical engineer assumed responsibility for operation of the electricity supply (Donovan 1999, p 32). The electricity supply was regulated at this time by the Canberra and Jervis Bay Electricity Supply regulations proclaimed in 1924. Ever subject to political interference, the Scullin Labor government intervened in 1930 and abolished the Commission (Donovan 1999, p 39), then divided responsibilities for electricity and water and sewerage services amongst its departments. The Federal Capital Territory Branch of the Department of Home Affairs became responsible for electricity services and the Department of Works and Railways were given responsibility for water and sewerage services (Donovan 1999, p 39). Notwithstanding the numerous changes in the Federal Government bureaucratic structure this arrangement remained essentially unchanged for close on 50 years (Donovan 1999, p 295-6).

**Figure 4.3 Map of Canberra, Waterways and ActewAGL Sites**




ActewAGL sites at Fyshwick, Canberra (Civic), Mitchell, Tuggerong (Greenway), & LMWQCC,

Source: Adapted from ActewAGL Sustainability Report 2003

### 4.4.2 Moving Towards Relative Independence

Canberra was and is a largely public service town. Only recently have employment figures slipped below 50% public sector employment. Thus from the beginning ActewAGL and its predecessors were formed through the historical and cultural milieu of a public service town imbued with public service values, constraints and benefits.

In 1963 a statutory authority was established and ACTEA (Australian Capital Territory Electricity Authority) became responsible for the continuing development and maintenance of the electricity infrastructure in the ACT. This body was empowered to generate, purchase and transmit electricity, supply, maintain or repair electrical equipment used by the Commonwealth or its authorities and to determine charges for the supply of electricity or connection to that supply. The Department of the Interior and later the Department of Territories retained responsibility for ACTEA, although it functioned as a separate entity (Donovan 1999, p 79). During this period the Federal Government's Departments of Works and Housing and Construction respectively retained control of the water and sewerage services (Donovan 1999, p 295).

ACTEA, a semi-independent unit was merged with the Water and Sewerage Branch of the ACT Administration on the 1st July 1988, forming ACTEW (Australian Capital Territory Electricity and Water), a statutory authority. ACTEW became a corporation in 1995, although this continued to be an ACT Government owned company.[46] ACTEW retained many of the responsibilities of ACTEA but water functions had been incorporated thus increasing the responsibilities to include the collection and

[46] The advent of self-government in 1987 had removed responsibilities from the Federal Government and relocated them to be under State government control in the form of the ACT Government.

management of sewerage services, and the supply, promotion and management of water.

On paper the amalgamation of services seemed a simple and logical thing without even the necessity of physical relocation (Donovan 1999, p 156), however the reality proved very different. The water functions had previously been part of a regional office but after amalgamation found itself part of a head office and more directly exposed to political pressures. Further the two organisations possessed, and to a certain extent still possess, very different cultures, had different computer systems to which they were wedded, had different customer expectations and both felt under threat. Having functioned as a semi-independent unit for such a long time, ACTEA had a culture that included a full cost recovery focus, budgetary responsibilities and greater use of power and politics to aid their cause, whereas the Water Division was "steeped in public service tradition" (Donovan 1999, p 164 ), were much smaller in size than ACTEA and were accustomed to providing water for 'free' to their customers (Donovan 1999, p 166-7). Tensions were rife from the time a possible amalgamation was raised, through the process and then beyond. Senior management have experimented with various ways of accommodating the cultural differences including splitting the organisation along functional lines, along geographic lines or according to maintenance and assets.

Balancing the public service orientation of the former Water and Sewerage Branch with the relative independence of ACTEA had implications for power relations initially and continues to dictate who has power and influence in ActewAGL. This is discussed more explicitly in Chapter Eight (Power) of this thesis.

### 4.4.3 Joint Venture

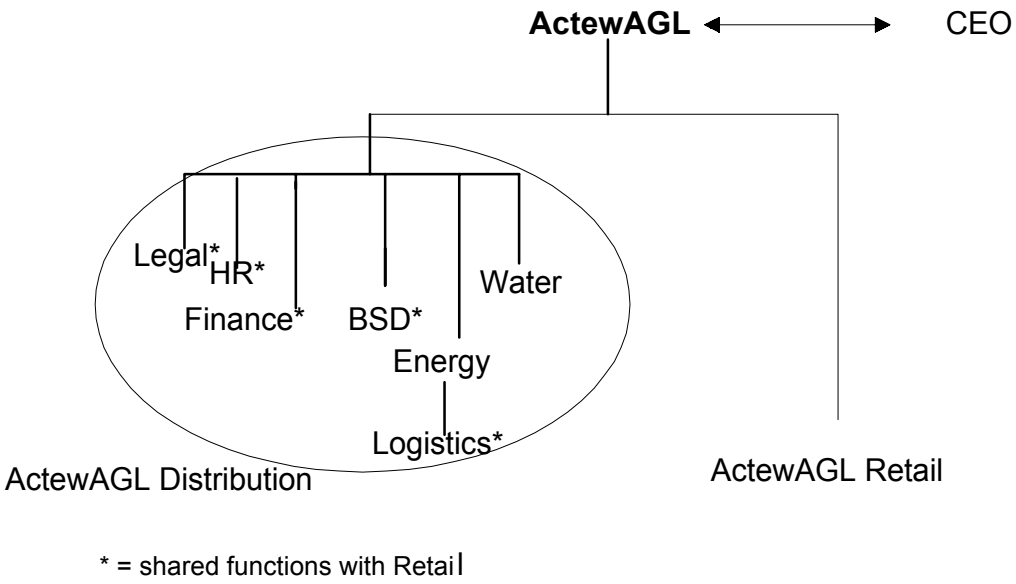
Being Government owned has advantages and disadvantages for ActewAGL and its predecessors, however when the possibility of privatisation of ACTEW was raised in 1998, there was a great deal of opposition. In the end the proposed sale was opposed in the Legislative Assembly (Donovan 1999, p 284-9).

Whilst the outright sale of ACTEW was blocked, the organisation and the government continued to pursue opportunities for possible mergers with other companies, the provision of water and sewerage services to neighboring communities and the possibility of expanding to other utilities (Donovan 1999, p 292). Eventually an arrangement was made with the Australian Gas Light Company (AGL). On 21st December 1999 ACTEW released details of a joint venture proposal with AGL (ACTEW 1999a).

"ActewAGL was established in October 2000 as the first utility joint venture in Australia between a major private sector group and a government owned enterprise" (ActewAGL 2003b). It is one of the few multi-utility companies in the world. ActewAGL, under one CEO, is organised as two partnerships, Distribution (which consists of the Water and Energy Divisions along with the corporate functions of IT, HR, Finance etc) and Retail, as shown in Figure 4.2. ActewAGL Distribution partners are ACTEW Distribution Limited and AGL Gas Company (ACT) Pty Ltd. The ActewAGL Retail partners are ACTEW Retail Limited and AGL ACT Retail Investments Pty Ltd (ActewAGL 2003b). Further diversification as a multi-utility

results from ActewAGL's relationship with TransACT and ownership of Ecowise Environmental Pty Ltd, as previously discussed.

**Figure 4.2 Structure of ActewAGL Post Joint Venture**




Before the formation of the joint venture, everyone was an ACTEW Corporation employee, apart from the four employees seconded from AGL (ActewAGL 2003c, p 21). On the day the joint venture was actually confirmed and signed off, any new employee became an ActewAGL employee. Most of the senior managers and many of the other employees are seconded to ActewAGL from ACTEW Corporation and once their contracts expire they will then officially become ActewAGL employees. This arrangement has implications for the counseling of employees, for entitlements and for such things as the legality of purchasing items and materials for each company, particularly for groups such as Logistics who serve the entire organisation, and as such serve Water and Electricity Divisions and also purchase things for ACTEW Corporation, Retail and Distribution.

## *4.5 Ownership*

ActewAGL's staff magazine acknowledges that, "many people find it difficult to understand the partnership structure of ActewAGL" (ActewAGL 2004e) and the ownership of ActewAGL remains shrouded in ambiguity. Ownership of ActewAGL is shared equally between AGL and the government owned ACTEW Corporation. The water and wastewater assets of the ACT remain public property as ACTEW Corporation retains 100 per cent ownership of these assets, including dams, water treatment plants, reticulation systems and so forth. ActewAGL provides water and wastewater services under contract to ACTEW Corporation (ActewAGL 2003b). The government also owns 50 per cent of the electricity assets with AGL owning the other 50 per cent. In this capacity should a decision be made regarding the electricity assets negotiations would have to occur involving the Government and AGL, a process negotiated through the two boards. However if a decision was on the cards regarding water, the ACT Government can essentially do what it likes.

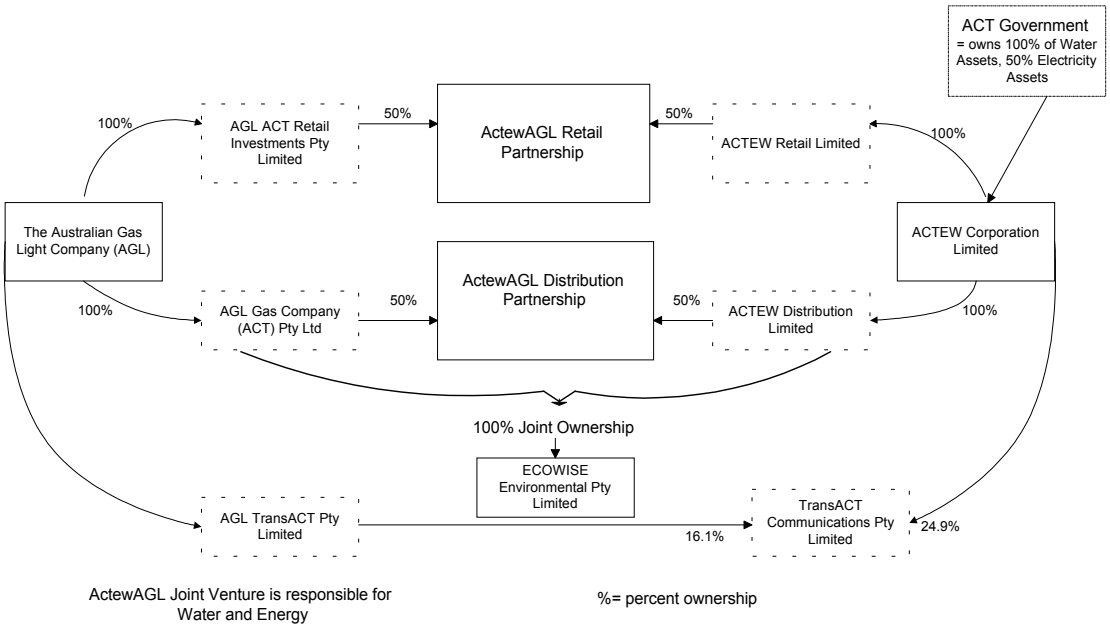
As far as the day-to-day operations are concerned, AGL is a shadow partner. Even people within the organisation do not know what AGL does. This is in line with AGL's involvement in the joint venture being essentially to learn about how to run a multi-utility company.

The organisation represents a hybrid of being partly government owned and partly privately owned. This means that there are a number of key stakeholders that have a great deal of influence over the CEO and the organisation itself. The CEO of ActewAGL is answerable to ACTEW Corporation, the ACT Government, AGL and the ActewAGL board, as shown in Figure 4.3. All of these actors have diverse and often

disparate goals and each has the potential to drive ActewAGL corporate strategy to an extent. As a result of the disparate goals of the organisational owners and the duality of government and private ownership, the organisation is able to legitimately engage in a wide range of activities under the auspice of the fairly loosely defined strategy. The key point here is that ActewAGL is a manager not an owner of the assets it operates, and thus has little ability to influence the strategic direction pertaining to those assets. ActewAGL is also subject to the constraints imposed on it by the government. Governments are traditionally focused on short-term issues related to their term in office. As such ActewAGL has little independence and governments who have a fixed term to accomplish policy agendas drive their strategic directions.

The amalgamation of Actew and AGL and the ensuing ownership structures, which are a combination of public and private, means that the organisation and the CEO have many masters and must balance many disparate demands. This directly impacts on the power relations in the organisation as discussed further in Chapter Eight (Power) and also affects how the organisation reacts to change, as discussed in Chapter Seven. Where the Government dictate that change will happen, often within the time constraints of a political term then Actew Corporation must respond. Often ActewAGL follows suit but not always.

**Figure 4.3 ActewAGL Reporting and Ownership Structures**



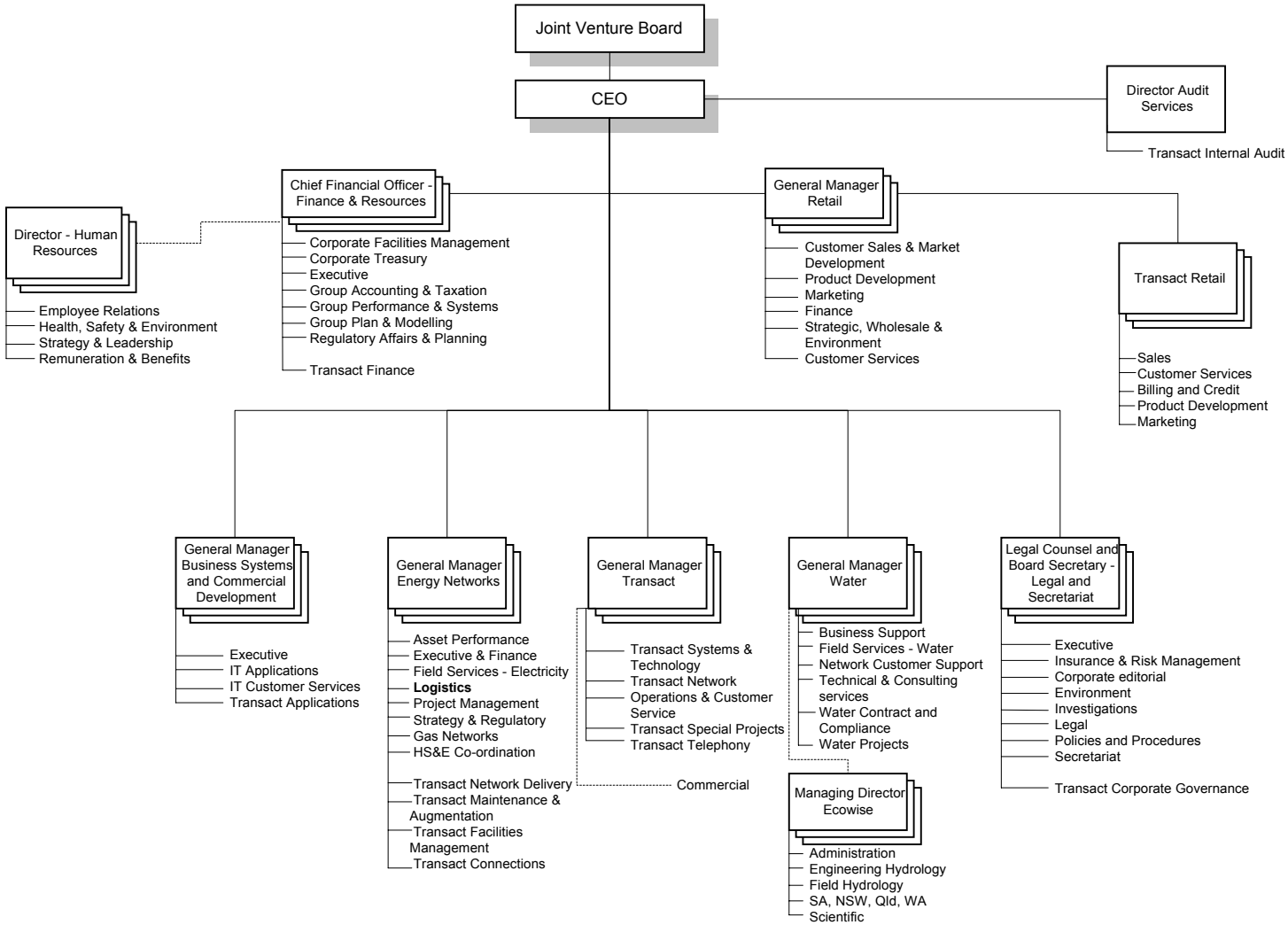

*Source: Adapted from ActewAGL Joint Venture Presentation Sept 2004*

## *4.6 Organisational Structure*

There are frequent changes to the organisation chart at ActewAGL, as discussed further in Chapter Six (Informal / Formal). At a local level, there have been at least 25 changes to the organisation chart in Logistics alone from 1998 until 2004 and at a macro level every CEO changes the organisational structure at least initially but often throughout their reign. When ACTEA and Water Services amalgamated the structure of the organisation was divided along the lines of engineering and operational functions (Donovan 1999, p 180) and then along the lines of Electricity and Water. A change of CEO meant that the structure was altered again, this time it changed to a division according to assets and maintenance which in turn split the town according to Northside and Southside (of the lake) with maintenance people working in the south or the north and the same with people who were dealing with the management of the assets. When another new CEO came in the organisation was changed back to being split according to water and electricity functions. Notwithstanding frequent tweaking of the organisation

chart to incorporate additional or changed functions such as the re-incorporation of the TransACT responsibilities, the organisation remains divided according to the two major functions of Energy Networks and Water Divisions, with some corporate functions such as Human Resources, Finance, Legal and Business Systems (Information Technology) serving the whole of the organisation. Figure 4.4 below shows the current organisational structure as at April 2004.

**Figure 4.4 ActewAGL Organisational Chart**



## *4.7 People and Places*

ActewAGL employs approximately 1000 people[47], of which over nearly 700 work in Electricity Networks and Water Divisions (with Ecowise Environmental counted along with Water Division). This figure has stabilised over the last few years however in 1995 there were approximately 1354 employees. A number of staff took advantage of the voluntary redundancy packages that were offered and the organisation lost 135 employees in 1998 when redundancies were offered with the additional incentive of $10,000 per person if they left within two weeks (Donovan 1999, p 274). This resulted in a huge blow to the organisational knowledge-base.

Of the approximately 1000 employees by far the most significant group, in terms of numbers, are the field officers. In June 2003 field staff made up approximately 368 employees, of which thirteen were female (ActewAGL 2003c, p 21). Traditionally ActewAGL and its predecessors have been a largely male dominated workforce (Donovan 1999, p 201,226), however this is slowly changing, particularly for administrative and general officers (ActewAGL 2003c, p 21).

The ActewAGL staff are spread over eight different sites throughout Canberra, as shown in Figure 4.1. The major concentrations of ActewAGL people are located in Civic (in ActewAGL House and TransACT House), at Mitchell, Tuggeranong (Greenway), Lower Molonglo (LMWQCC), Lithgow Street Fyshwick, Mildura Street Fyshwick, with small teams at Mt Stromlo and Googong.

[47] According to the 2004 Annual report this figure increased from 922 to 1092 in 2003/2004.

Being so spread out and with different focal points and broad areas of interest (e.g. electricity / water / corporate support etc) means that in order to get things done there is a greater tendency to rely on routinisation, as discussed in Chapter Five (Routines) and also on informal relationships to supplement the more formal instructions of what is supposed to happen, as discussed in Chapter Six (In/Formal). Managers and staff rely on relationships they have established over time to get things done and to interpret the instructions coming from Senior management and feed back to them, as shown in the Management Feedback model (Figure 6.3), discussed in Chapter Six.

## *4.8 Organisational Characteristics*

At various stages in its existence ActewAGL have displayed different characteristics and roles, moving from having a captive consumer market to having to be customer focused in a contestable environment and having to diversify its products in order to provide more sustainable environmental options. With changes in environmental concerns the organisation has recently moved to being co-provider of electricity and water with customers installing (subsidised) rainwater tanks and solar panels. Van Vliet notes each of these differentiated roles in utility companies but confirms the tendency to "observe hybrid forms of these roles …[with] all consumer roles described here [being] likely to co-exist in space and time" (2003, p 34-5), as indeed is the case at ActewAGL. All of these roles necessitate different organisational characteristics, although some endure across time, such as the ability to adapt to crisis situations and a focus on the customer.

The organisational characteristics discussed below form a large part of how work gets done at ActewAGL. They are important themes that I was able to identify in the data but also link to the data chapters. Adapting to crises is a necessary characteristic in facilitating long-term change through learning lessons of mistakes but also occurs due to a dependence on routines – when things are stretched people (and organisations) revert to routinisation to minimise cognitive effort and to allow things to get done. Just as things occur in a crisis due to routinisation, certain behaviours are perpetuated and endorsed in ActewAGL as a result of informal understandings about being for instance a good corporate citizen, this is discussed further in Chapter Six (Routines). Underlying behaviours is also a reward system where the power relations are such that people feel that ActewAGL looks after them.

### 4.8.1 Adaptability in a Crisis

Like all utility companies, ActewAGL displays considerable flexibility and adaptability in carrying out its business operations. The environment in which they operate is characterised by long periods of stability punctuated with occasional crisis brought about by windstorms, fires, floods and droughts. Thus the organisation needs to be flexible enough to adapt quickly to crises, to get over them and then keep on doing what they do well, that is providing electricity and water to the community. This is a characteristic of ActewAGL but is not unique to them, indeed as I have said all utility companies need to have this ability. As I write this the fourth hurricane of the season hits the Caribbean and the USA and the utility companies there are facing similar crisis situations with loss of power, interruptions to clean water supplies and damaged infrastructure.

### 4.8.2 Good Corporate Citizen[48]

ActewAGL as an organisation actively seeks to be a good corporate citizen (Donovan 1999, p 226). The organisation is committed to environmental issues, to providing sustainable energy alternatives, to promoting conservation and to encouraging participation of schools and of the community at large in initiatives that contribute to a sustainable future (Donovan 1999, p 269,278-9; ActewAGL 2004b).

The customers have always been important to ActewAGL and its predecessors. ActewAGL aim to reduce disruptions to customers and respond quickly to customer issues, indeed this is tied to the key performance indicators (KPIs) of the organisation (ActewAGL 2003c, p 19-21; ActewAGL 2004a) and to the incentive bonuses given to staff. The importance of the customers is evidenced in almost every public document put out by ActewAGL where the customers gain a specific mention and also in the monthly and annual employee recognition awards with a category for 'Community Awareness' and another for 'Outstanding Customer Service'. ActewAGL has frequently been the recipient of independent business awards from bodies such as 'Global Reviews', and Australian Business Excellence and Customer Service Benchmarking Australia (CSBA) for their outstanding customer service focus (ACTEW 1999b; ActewAGL 2001b; 2002a; 2003d; 2004; 2004c).

[48] 'Good Corporate Citizen' was a significant and recurring code in my analysis, yet this does not mean that everything the organisation did was shrouded in this ethos or that everyone felt the same way. That ActewAGL was seen to 'look after' people certainly affected the way individuals and the group felt about the company and even probably affected the way I perceived the company, but not to the extent that they were considered perfect – the analysis clearly shows that this was not the case. It would be an interesting aspect of ActewAGL to explore further, with additional data, especially to see if this was reflected throughout the organisation, particularly at the upper levels.

As part of being a good corporate citizen ActewAGL is heavily involved in sponsorship of community events, sporting groups and charitable causes. Sponsorship funds are directed to five key areas: charity, business, community (Donovan 1999, p 267), sporting and academic (ActewAGL 2003b). In addition to monies, such sponsorship also includes in-kind contributions such as assisting with putting up temporary light boxes for functions, running children's Christmas parties, promotion of ActewAGL through open days (Donovan 1999), entering teams in a variety of charitable events such as the 'Walk to cure Diabetes' and supporting the Asian Tsunami appeal.

ActewAGL is ubiquitous in the Canberra community, visible through sponsorships, advertising and their presence, which is heavily associated with water and electricity issues. The organisation works hard to maintain a community presence however this is assisted by the virtual monopoly that ActewAGL and its predecessors have in the Canberra community.

### 4.8.3 ActewAGL is a Good Place to Work

In addition to working hard to raise and maintain the organisational profile within the community, ActewAGL prides itself on being a good place to work and works hard to maintain that view with its employees. ActewAGL has a relatively low turnover rate and many people have stayed with the company for a very long time. Many people cite the reasons for their ongoing relationship with ActewAGL as being such things as: "Actew looks after me"; "their HR policies are excellent"; ActewAGL's "very good health insurance scheme" which enables them to "look after you when you are sick"; "the people" [are] "a good bunch to work" with / for, "the money" because, according

to one informant "outside the mining companies, [ActewAGL has] the highest paid Storemen in Australia" and "in the office, ActewAGL's ASO3s get paid up to five grand more than in the public sector"; "the flexibility is nice"; and the stability / "security would be one of the high things". Whilst not everyone is entirely happy, throughout the research period I heard again and again, "ActewAGL is a great place to work" or variations on that theme. Some people acknowledged that "despite some warts, it is one of the more progressive companies". By the variety of responses it seems that ActewAGL as an organisation has got the balance of incentives reasonably right, a major challenge for any organisation (Barnard 1968 [1938], Chapter 11) and that they are managing to motivate individuals and meet at least some of their needs (Nadler and Lawler 1995; Staw 1995). Overwhelmingly people simply said, "it is a good place to work". It seems that whilst "the organisation has its problems like everyone else, communication problems, arguments between staff and management," and so forth, overall as one informant said, "people are proud to work for ActewAGL because they are proud of their jobs and what they do and it is all a big family environment. …Nobody likes everybody but on the whole when you click with somebody you really get on well. It is just nice, it is a nice environment and it is a good place to work." As Donovan notes, "as well as being a good corporate citizen, ACTEW[AGL] remain[s] a good organisation in which to work, despite the irritations…" (1999, p 248).

Like many utility companies, ActewAGL has a strong safety culture involving "a shared commitment to think safely, to behave safely and to believe and trust in the safety measures put in place by the organisation" (Lee 1993 cited in Harvey et al. 2002, p 19). The commitment to safety is both an espoused theory, with a strong advertising

campaign and reinforcement from people at all levels, and a theory-in-use (Argyris and Schon 1978).

ActewAGL pay above average wages compared to the public service, the major Canberran employer and has a number of attractive incentive schemes. Incentive schemes include monthly and annual employee awards, an annual staff breakfast, and an annual monetary incentive bonus awarded to employees provisional upon meeting organisational KPIs and flexible work arrangements. The organisation maintains an active social club, and has done so since 1989 when the Water and Electricity social clubs were amalgamated (Donovan 1999, p 182-3), and supports various divisional and locational get-togethers and 'fun' activities.

## *4.9 Logistics Branch*

One such work group is the Logistics Branch of ActewAGL, where the research for this thesis was conducted. The following section will detail some of the characteristics and background information pertaining specifically to Logistics.

### 4.9.1 Location and Locale

Logistics Branch is located with Energy Networks on the organisational chart (see Figure 4.4) however the branch serves the whole of ActewAGL. This disconnect between the organisation chart and the actual roles of Logistics means that the Logistics Branch are both physically and organisationally a bit isolated. Physically the Logistics Branch is not co-located with the Energy Networks people at Greenway; they occupy their own space in Fyshwick. This space includes the Warehouse, with a few upstairs

offices and a demountable in which the Procurement Section and Contracts are located. Organisationally the roles of Logistics span the entire organisation but do not really fit with any of the predefined organisational tasks.

As part of the change management project, REMAP, there was a push to co-locate all functions that pertained to the whole-supply-chain model, as discussed in the routines and change chapters of this thesis. During this period Accounts Payables was moved from under the auspice of Finance to Logistics to be co-located with Purchasing (ACTEW 1996b; ACTEW 1996c). Historically this has worked well and thus both functions remain located in Logistics.

### 4.9.2 Logistics Functions and Structure

The Procurement Section, Contracts and the Warehouse all come under the auspice of Logistics. Logistics is responsible for purchasing, accounts payables, contract management, disposal operations, fleet services (managing the motor vehicle leasing contract), inventory management and warehousing. They are also heavily involved in systems administration and development of the accounting system, the works management system and a number of other systems, along with the associated training for such systems.

Logistics supports a relatively flat structure with approximately 30 people in the Branch, including approximately nine Storepeople. The Procurement Section employs around ten people and Contract Management employs three. Although many of the Logistics staff have been there for a long time, the numbers have been heavily reduced

as the result of process automation and moving away from manual purchasing and accounting systems.

The Storepeople form a self-directed work team and as such although they have a Team Leader they do not have a supervisor and are responsible for their own KPIs, division of labour and task planning. This was implemented in response to a series of dissatisfactions with the operation of the Warehouse. Management and the Warehouse staff engaged in a series of discussions, together and separately and then with some HR assistance and based on the success of self-directed work teams for the maintenance crews at Lower Molonglo Water Quality Control Centre (LMWQCC) (Donovan 1999, p 257), it was decided to trial self-directed work teams as an operational model, whilst attempting to improve the productivity, satisfaction and responsibility of the Warehouse. This experiment was being carried out during the research period.

The self-directed work teams work on principles that seem to be closely related to the philosophies espoused in the high performance work systems (HPWS) literature which promotes a

> "high degree of employee involvement or commitment through quality circles, autonomous work groups and enhanced training and development. [They] entail a high level of investment in human capital and this human resource investment is seen as a source of competitive advantage. … The emphasis, thus, is on developing a high employee involvement and high employee commitment…" (Allan and Lovell 2003, p 2).

Underlying the philosophy behind HPWS is that

> "workers are intimately acquainted [with] the nature of their own work and thus are closest to the problems that affect them and their co-workers. These workers are therefore ideally located to devise solutions to these immediate problems" (Allan and Lovell 2003, p 8).

The Storepeople rotate through a series of responsibilities such as shipping, receipts, deliveries, and discrepancies as well as through two sites, Mitchell and Greenway.[49] The aim of this was to familiarise participants with a variety of roles and to encourage them to work as a team. It was also hoped that it would increase responsibility and give

> "people a chance to learn about many of the functions that are necessary for the [Warehouse] to perform well, [to] operate on a participative basis, and because [it was thought that the process would] provide the individual [with] a chance to influence many of the day to day work place decisions" (Lawler 1982, p 286),

and would increase ownership of the positions.

### 4.9.3 Characteristics of Logistics

Logistics forms part of ActewAGL and as such also share a number of defining characteristics that the organisation itself possesses, including a strong customer focus, the desire to be a good corporate citizen and adaptability, especially in a crisis. There are a number of characteristics that are however particularly identifiable in Logistics. Such characteristics include strong problem-solving abilities, a certain passivity in attitudes of "I just do my job", coupled with a desire to improve and adapt systems and processes, and being very collaborative and helpful in dealing with day-to-day issues. The people in the Logistics Branch seem to share a pride in their work and in the organisation as a whole.

## *4.10 Conclusion*

The research discussed in this thesis was undertaken in the Logistics Branch of ActewAGL, an electricity, water and gas utility based in Canberra. This chapter

[49] Post field work and in response to recommendations I made in my management report and internal reflections this changed and the Greenway and Mitchell sites had permanent people assigned to them. The rotation period was also extended to approximately 6 months where it was 6-8 weeks during the period of the study.

provides a brief overview of ActewAGL, showing how it bridges the gap between government and private sector, as a semi-government, semi-privately owned utility company.

This chapter complements and expands on the introduction to the field site presented in Chapter Two. It outlines the historical basis of ActewAGL, the ownership and structure of the organisation as well as its functions. It highlights some of the characteristics of the organisation and of the Logistics Branch and further explicates the functions, location and processes of the Logistics Branch. The following chapters form Part Three, the data chapters of this thesis, exploring a number of themes that fell out of the research and which, when combined, provide an overall picture of ActewAGL.

# 5 Chapter 5 – Routines

## *5.1 Introduction*

Routines are how organisations remember by doing (Nelson and Winter 1982, p 99), as such they are an important aspect of modern organisational theory, although few people have looked at routines ethnographically. The concept of routines has been widely used and heavily studied with the founding authors being amongst the most quoted and influential works in management (Meyer 2001; Ramos-Rodríguez and Ruíz-Navarro 2004). However, rarely have routines been looked at from the perspective of a participant observer, although routines scholars acknowledge that "progress requires 'an army of ethnographers'" (Cohen et al. 1996, p 681). I, like Feldman (2000; Feldman and Rafaeli 2002; 2003) and Pentland (1992), have adopted an ethnographic approach to the study of routines in organisations because "the work generates richly suggestive results, and accumulation of such accounts, as in anthropology, provides essential grist for theory development" (Cohen et al. 1996, p 681).

This chapter is intended to contribute an exploration and testing of routines from within. This is the first instance that I am aware of where research into routines has been carried out by a full participant involved in the performance of the routines at an operational level, rather than from an administrative or purely observational perspective.

Very early on in my fieldwork at ActewAGL, routines were evident as a significant component of the field-site. By this I mean that in accordance with qualitative methods, the code of routines was heavily notated in my ethnographic notes. Routines are a significant 'code' from my ethnographic data but most importantly, in the field site they

emerged because this is how work is accomplished. Becker, Lazaric, Nelson and Winter acknowledge this when they say "routines are a crucial part of any account of how organizations accomplish their tasks in society" (Becker et al. 2005, p 775 ). The body of work on routines does not simply present a theoretical construct but supports the way I found tasks to be accomplished when I was immersed in the daily reality. The theory described what I was seeing.

In general my research supports the body of work on routines, however, it also contributes some additional points and clarifies aspects presented in the literature on routines. It is my proposition that routines may be viewed from two perspectives, one being that they accomplish some task, which is fairly stable, and the other that they describe *how* the task is accomplished, an aspect of routines which can be quite fluid. In accordance with this division, I contribute that organisational routines need to incorporate problem-solving as a characteristic and that if this is incorporated they are only self-actuating in terms of the task accomplishment, not in relation to *how* the task is enacted.

In this chapter, as in the others, I draw on the effectiveness of ethnographic methods combined with knowledge taxonomies (the Ethnography of Knowledge) to explore the theoretical construct of routines both in terms of the literature on routines and in relation to how routines are enacted in the field site. Through testing the utility of the Ethnography of Knowledge I suggest that in the case of routines, such a focus does indeed provide insights into the social setting. I begin by defining and historically situating the concept of routines. I then explore the various aspects of routines in relation to the field site and expand the discussion in the methodology chapter to include

an exploration of task complexity and a discrepancy analyses. The aim is to test and explore the existing theories on routines from inside the routine. I feel that the literature supports the ethnographic account and so I have incorporated the routines literature into the discussion of ActewAGL.

I have used *italics* throughout the ethnographic account to allude to the characteristics and roles of routines as they are represented in the literature, however I do not explain them in-depth until the end of the chapter. The purpose of this literary device is to enable the routines to emerge for the reader as they emerged for me, that is, prior to a complete understanding of the implications of the theory and through the ethnographic data. The ethnographic account came before the theory in the fieldwork, and thus I present it here in the first instance before a discussion of the literature.

I present this chapter as the first of the data chapters as it addresses local level issues in that routines are often local in the first instance, where the other chapters abstract more to a whole-of-organisation level. This chapter connects with the others in this thesis in that routines embody knowledge, especially the tacit knowledge needed to accomplish tasks. Routines also represent power relations through the concept of truce, have both formal and informal aspects and embrace both stability and change. Routines are how "organisations remember by doing" (Nelson and Winter 1982, p 99). They are both products of organisations and are how organisations function.

## *5.2 Where Routines Came From*

In the study of organisations, routines have become a core concept. A comprehensive review of the literature on routines noted over 400 individual works exploring the concept of routines from a theoretical point of view (Becker 2004). Yet routines, like in/formal, change and power, as discussed in the following chapters, are terms that are used by many people and explored by few.

Much of the organisational literature has been concerned with addressing how organisations perform as they do, yet there still no one single comprehensive theory that explains the functions of an organisation. This is probably because organisations are incredibly complex entities whose role in modern society is still not fully understood. Theories seeking an explanation have ranged from scientific management (Taylor 1911), the informal organisation (Barnard 1968 [1938]), to bureaucracy (Weber 1947), motivational factors (Maslow cited in Burnes 2000),(Herzberg 1984 [1966]), to theories of control (McGregor 1984 [1960]), contingency theory looking at environmental factors (Thompson 1967; Lawrence and Lorsch 1984 [1967]; Perrow 1986), through to organisational structure (Burns and Stalker 1961; Fayol 1984 [1949]; Crozier 1984 [1976]) and cultural factors (Kanter 1977; Peters and Waterman 1982).

Building on developments in organisational theory, including those emphasising the importance of programs (March and Simon 1958) and standard operating procedures (Cyert and March 1963), Nelson and Winter (1982) introduced the concept of routines, in their seminal work *An Evolutionary Theory of Economic Change.* As the title suggests, the aim was to apply an evolutionary perspective introducing realism into the study of socio-techno-economics as opposed to standard neo-classical economics in

which the organisation or the 'firm' is represented as a mathematical construct void of people and often void of the 'organisation'. For Nelson and Winter organisations have the ability to perform due to the routines that characterise them, to determine what is to be done and what skills are needed to perform these routines. Routines enhance performance. Indeed, an empirical study has recently shown that the ability to access routines is up to twelve times more important than organisational ownership, in so far as performance is concerned (Knott and McKelvey 1999). Like genes, routines are stable reproductions of patterns of behaviour, but they can adapt to a changing environment, passing on changed characteristics (Nelson and Winter 1982) and thus being a mechanism to cope with uncertainty.

## *5.3 Definitions and Governing Characteristics of Routines*

Although there is no clear definition of routines with many open questions still persisting, for the purpose of this chapter I adopt the definition provided by Nelson and Winter (1982), that is, routines are "*all regular and predictable patterns of [interaction and] behaviour in organizations*". They represent actions which are recurring, selectable and based in an organisational context (Cohen et al. 1996) and which, by definition, involve multiple organisational members (Cohen and Bacdayan 1994; Feldman and Rafaeli 2002). I chose this definition because it alludes to the way organisations adjust their knowledge and learn in response to selected pressures (Cohen et al. 1996, p 684). Further, it allows for the possibility of routines being conscious, unconscious, tacit and explicit. The 'in organisations' component delimits the study to organisations situating it within the vast realms of organisational literature, whilst indicating the collective nature of routines because organisations are made up of many actors.

The roles and characteristics of routines ably summarised by Becker (2003; 2004) allude to variations of this definition. The varied explorations all tend to emphasize in one way or another that organisational routines are "patterns, repetitive and persistent, collective, non-deliberative and self-actuating, of processual nature, context dependent, embedded, specific and path dependent" (Becker 2003, p 2). The literature also notes that the "roles routines are seen to have in organisations [are] to coordinate and control, provide 'truce', economise on cognitive resources, reduce uncertainty, lead to inertia, provide stability and enable and constrain, act as triggers and embody knowledge" (Becker 2003, p 2).

## *5.4 A Brief Overview of the Literature on Routines*

Markus Becker undertook an exhaustive analysis of the literature on routines and comprehensively discussed the theory in relation to the literature (Becker 2003). This review included over 170 citations and was to the best of his knowledge comprehensive with regards to the literature as it stood in 2003 (Becker 2003, n 1). He then reviewed and updated this in 2004, citing over 400 works, indicating the expanding nature of the theory of routines (Becker 2004). Given the representative nature of Becker's work, I use his papers as a basis from which to describe the major characteristics and roles of routines, as represented in the literature. These characteristics and roles of routines will be discussed after the ethnographic analysis.

Most of the routines literature uses routines to define and explain the existence, performance and functions of organisations. In this capacity routines are seen as

embodying knowledge, especially tacit knowledge in the context of boundedly rational actors situated in the history of the organisational environment, making routines context dependent. This view uses a meso-level of analysis where routines are used to try to examine complexes of organisations or industries and in which the routines form the base level of analysis. The literature rarely decomposes the concept further than the concept of routines itself.

## *5.5 Contributions of This Study to the Study of Routines*

Where much of the literature looks at routines from outside the routine, I do so from the position of being within the routine. My major contribution is not in developing new theory with regards to routines, although some theory development has become apparent in the ensuing analysis, but in empirically testing the theory of routines from within. "There have been few empirical investigations into the nature of routines" (Becker 2005a, p 250).[50] I do this using participant observation, the most suitable method for assessing routines because one of the criterion for routines is they must be observable (Cohen et al. 1996, p 672). Few authors have adopted this methodology in specifically observing routines (Feldman and Pentland are notable exceptions). Despite the appropriateness of the methodology, the "costs of observations are also at the extraordinarily high levels typical of anthropology" (Cohen et al. 1996, p 681) and so researchers of routines have tended to prefer to focus their attentions on other less 'costly' methodologies instead of an ethnographic approach.

[50] Some of the few empirical studies include Pentland (1992), Cohen and Bacdayan (1994), Pentland and Rueter (1994) and Knott and McKelvey (1999).

When viewed ethnographically, I suggest that routines may be viewed from two perspectives, one being that they accomplish some task and the other that they describe *how* the task is accomplished. Typically in the literature the two are conflated (Becker 2005a, p 251), although recently there has been a recognition that the two need to be studied individually (Becker 2005b). In a very recent paper Feldman and Pentland, in trying to re-conceptualise the theory of routines, use a similar conceptualisation differentiating between the ostensive and the performative aspects of routines (Latour 1986; Feldman and Pentland 2003). Roughly speaking the former represents the way the routine is viewed (sometimes from the outside) by people examining the routine and the latter is the way the routine is actually carried out. This is a particularly important development in that Feldman and Pentland in two separate studies, like myself, both adopted participant observation as their methodology for observing the routines in action. This division between the task and how the task is accomplished is similar to Weick and Quinn's differentiation between what one sees as an observer at the macro and micro level when describing organisational change (1999, p 362). The tasks to be accomplished or the ostensive aspects of routines (Feldman and Pentland 2003) are governed by predictability and include procedural memory that is "the form that stores the components of individual skilled actions – for both motor and cognitive skills" (Cohen and Bacdayan 1994, p 557). How the tasks are accomplished, or the performative aspects of the routines (Feldman and Pentland 2003), includes know-how, declarative memory or the ability to store facts, propositions and events (Cohen and Bacdayan 1994, p 557). I propose that it is from within and in this second aspect of routines where changes in routines occur, often without significant changes in circumstances. This premise supports and advances the work of Martha Feldman and

her colleagues (2000; Feldman and Rafaeli 2002; 2003) and stands in contrast to much of the literature on routines.[51]

This work also differs from that of other authors in that my fieldwork was in the capacity of one involved in the routines from an operational rather than a largely administrative position or observational perspective. That is, I was immersed in and involved in the routines on a daily basis for a period of eight and a half months during which I was 'working' as a Procurement Specialist and a Storeperson in the Procurement Section and the Warehouse, respectively, of the Logistics Branch of ActewAGL. These roles were operational in nature and consisted of all the tasks undertaken by Procurement Specialists and Storepeople in the course of their duties, some being procedural but many being governed by informal aspects as discussed further in the in/formal chapter. "Only by placing ourselves at the centre of an unfolding phenomenon can we hope to know it from within" (Tsoukas and Chia 2002, p 571).

## *5.6 Routines are Best Viewed Ethnographically*

Elite scholars in the field of routines have noted that an ethnographic approach is the most useful in researching routines in organisations. As Cohen, Burkhart, Dosi, Egidi, Marengo, Warglien and Winter note, an ethnographic approach "generates richly

[51] In a recent paper, Becker (2005a, p 251) notes that "much confusion [in the study of routines] stems from the conflation of the two levels of action and representation" and that advances in theorizing can be made by providing "a clear separation of the two levels of action and representation" (See also (Becker 2005b).

suggestive results …[and as such] field observation will always be of major value" (1996, p 681) in the study of routines.[52]

The following section provides an ethnographic discussion of routines at ActewAGL. This is aided by the italicised roles and characteristics that Becker (2003; 2004) highlights as being integral to the theory of routines. I shall follow this with a discussion of the individual roles and characteristics that form the basis of organisational routines as they are presented in the literature on routines.

## *5.7 Routines at ActewAGL*

Routines emerged early as an important code, both in terms of the number of notations in my NVivo analysis but also because many of the tasks in the Logistics Branch at ActewAGL are highly routinised. Routines are how the people in Logistics accomplish tasks and also how they know which work will be rewarded, as the literature would suggest (Kaplan and Henderson 2005). In the Procurement Section the work consisted of manipulating the accounting system to pay invoices, match orders and invoices, purchase stocked and non-stocked items, and deal with the problems and issues associated with these tasks. During my time in Procurement, including my initial training, I never used a manual and rarely saw codified instructions for doing the work. However, much of the work could be classified as highly routinised. We learnt how to do tasks, how to make the system jump but also how to jump through the system's hoops. These people rely heavily on organisational routines for getting things done.

[52] There have been few ethnographic or empirical studies of routines (see footnote 50). However as empirical studies are slowly infiltrating routines literature aspects of the literature is becoming contested. For example see (Becker 2003) compared to (Becker 2005a).

### 5.7.1 Learning the Routines: Training in Procurement

In ActewAGL one learns through situated practice and through "legitimate peripheral participation"(Lave and Wenger 1991). That is, as an insider by observing (initially at the periphery) the actions of experts in the environment and drawing on the communal knowledge of the group to gradually take on more responsibilities and carry out more complex tasks (Lave and Wenger 1991; Brown and Duguid 2000). Initially I learnt the routines through being assigned to a person who ran me through the processes and then gradually gave me more responsibilities and allowed me to do things myself, making mistakes as I went because, as informants said, "you only learn by making mistakes". Most of my colleagues seem to have been taught the routines in a similar way, through having a colleague who "showed us the basic bones and as things come up we'd ask one of the [people around] and see if we can catch on". I wondered about this and asked what I would do if I was in one of the regions[53] and received an invoice and how I would know how to process it. My colleague replied that I would need to learn first. I pursued this further and asked how they learnt the process – whether they were given a big thick manual or whether they were trained. My colleague replied, "you can't just give someone a big thick manual – no one would read it." Another colleague interjected and explained that some of the people in the regions had been trained and others learnt the process from them. For the people in the regions, learning to enter purchase orders, adjust them, and match them with the invoices is quite informal and often learnt through being able to drawn on the knowledge of the collective group or the distributed knowledge. Similarly in the Procurement Section, the purchasing of items and the

[53] 'Regions' is a term used to describe people situated in Mitchell, Greenway, LMWQCC or Googong, as shown in Figure 4.1. The field in the context of the field crews describes the Canberra environment, that is the 'office' of the field crews that are not desk bound but are on the road dealing with operational issues.

paying of ActewAGL expenses is largely taught informally, as discussed in the in/formal chapter. This relies heavily on the know-what of colleagues and their ability to explain better ways to do things, and on people or the system to pick up mistakes. Such an example of mistakes being picked up informally is evidenced in this extract of my ethnographic notes.

> One of my colleagues came to me with a problem but before he explained what it was he asked if I had a ruler, which I found in my drawer and gave to him. He then asked me to go into purchase order summary and into the order in question. He showed me that in the first instance I had raised a standard purchase order but hadn't changed the delivery dates that the item was required on. This meant that the supplier wouldn't be able to deliver the item in time, since the date had already passed. So that this didn't reflect badly on the supplier he asked me to change the promised date and the need by date (although if it was a supplier problem you only change the promised date so that the system records the error). He then pretended to hit me over the knuckles with the ruler. In the second instance he again picked up my ruler. He explained that I had made changes to the purchase order but hadn't re-approved the order so that when people tried to receipt it they couldn't. This was no simple process to learn, there were many little tricks and traps.

As shown above, learning the routines is a routine in itself. The routines associated with manipulating the system require *conscious thought* and prior *knowledge* of the system, of causal loops associated with actions and of the environment and players within it.

Despite the routinised processes, the way the processes are actually performed are vastly different from the apparently simple way that they are portrayed in the system. This is similar to the findings of Lucy Suchman, who also studied people involved in accounts and also found that the people had to "engage in continuous forms of creative improvisational reasoning [and that this is a …] negotiated and knowledge-intensive process (Suchman 2000a)." The *knowledge is embedded in routines*, the routines are not *self-actuating* in how they happen and the processes for picking up mistakes involve both the formal aspects of the system and the informal explanations and 'knuckle-rapping' of colleagues.

### 5.7.2 Effortful Roles and Tasks in Procurement

The roles of the Procurement Section as highlighted in the intranet appear deceptively simple. Following an information processing view, the Procurement Section is responsible for:

> "purchasing operations for both stock and direct charge purposes, this includes sourcing and negotiating to obtain the best price at the right time for the business, managing contracts and monitoring purchasing trends to identify opportunities where contracts may be negotiated to provide significant benefits to ActewAGL. [Further they provide] payment operations for the payment of supplier invoices within agreed payment terms and the payment of employee allowances, [outside the scope of wages]".

Within this brief some of the tasks are quite *repetitive* however they are by no means *self-actuating* or *conducted without conscious thought,* usually evoking cognitive knowledge.

People consciously think about how they will carry out the routine and *how* it will accomplish the task being undertaken. Many of the tasks in Procurement are governed by the accounting system that underlies its operation. Computer software can sometimes be highly rationalised and understood (Pentland and Rueter 1994) and as such the tasks associated with the system may be seen to be *repetitive* and highly structured. Yet the *repetitiveness* of the required task accomplishment, that is matching inputs to outputs and balancing the books, both actual and metaphorical, is juxtaposed with the significant license individuals have within the task, that is, in *how* the task is accomplished. As Suchman notes, these plans, or sequences of actions to achieve a desired outcome, are dependent upon the material and social circumstances (1987) and can change depending on circumstances or the interactions with the technology. For instance, although most people are familiar with the system, sometimes the figures on the system do not balance or the system does not behave as expected. In this situation although the task essentially remains the same, people are forced to reappraise the

situation and possibly find an alternative way of achieving the same task. They must use know-what, know-how and know-why in consciously exploring alternatives. Should situations be entirely *repetitive* and *self-actuating* they would all be the same and there would be no need to seek assistance. Yet people in Logistics at ActewAGL frequently display know-who by informally deferring to colleagues, as discussed in the in/formal chapter. Where tasks complexity is increased people tend to discuss their work with colleagues (Orr 1990; Pentland 1992; Orr 1996), in this situation routines are *not conducted without conscious thought* and are not automatic.

### 5.7.3 Routines in Procurement over Time

Procurement's role in the organisation has changed little over time, that is, it is responsible for purchasing items, paying accounts and managing contracts. Even though staff numbers have diminished so that the entire section now consists of thirteen people as compared to where they "had sixteen people in Accounts Payable at one point," "now there is only two", the section still completes the same set of tasks. Yet *how* the tasks are completed has changed, with the introduction of accounting software, on-going changes within the organisation and the routines. The *stability* of the task accomplishment (as opposed to *how* the tasks are completed) is due to the need for accurate accounts, good financial and contract management. The *change*, as discussed in the change chapter, is due to changes in the context, the technology and changes in knowledge as the organisation learns. All of the accounting processes used to be paper-based. Over time the organisation moved to a computer-based approach for these routines, finally settling on the current package. Prior to the current system, the Accounts Payables functions and the Purchasing functions

> "were two totally separate systems, there was the MSS system and at that point in time we did have [the current accounting-based system] Accounts Payable [module] but prior to that we had a system called CA (Computer Associates). … There were these things (well we still have MPOs – Manual purchase orders, which we are still trying to reduce, but prior to that we had things) called LPOs – Local Purchase Orders. … We had LPOs and we had another thing called standing orders. Anyway these LPOs were only to be used locally and they had a dollar value limit of $500 and what used to happen with those (and I am going back a long time now), they used to be put through the MMS system and then [one of the staff] used to go up everyday to Finance (they would drive up [to the city offices]) and bring all the LPOs that they had processed through the MMS system, we would then match them to invoices and put them through the CA system but nothing could happen…[because] … these systems didn't talk to each other, well they did but it was a three day process, if you wanted an LPO to be paid, you'd have to get it through the MMS system and it was updated that night, you'd then bring it up to Accounts Payable and Accounts Payable would process it and it would be updated in [the] accounts payable [system] that night and then there was a matching invoice process where they used to do invoice matching between MMS and Accounts Payable. And we used to do this for orders that were for $500 and less. …At some point in time we did analysis on the cost of that. It … showed that (I can't remember now but) in 40-60% of the cases it was costing us more to be processing all this stuff than the order was worth. …So at that point in time (and I am talking a long time ago), we cut out that it went through the MMS system, it just went through the accounts payable system. But in some ways we lost any control whatsoever because the purchasing people weren't seeing what was going through to think 'maybe we should set up a contract with this mob' or whatever."

(This then led to the move to co-locate Accounts Payables and Purchasing as discussed further in this and in the ActewAGL chapter). This example shows the *historical* and *context dependent nature of routines* but also that the overall tasks have remained fairly *stable* over time, being to pay the accounts. Yet *how the tasks are completed change* due to changes in the *embedded knowledge* in the environment. The move from a paper-based system to the use of an accounting system has changed the way the routines are performed but not the routines themselves. This change has created additional routines for data analysis and reporting but has reduced the labour and cost intensive process described above. These changes to the routines are emergent (Feldman 2000, p 613) and hard to observe at the time (Cohen and Bacdayan 1994, p 555) but with the value of the hindsight, shown above, they clearly show the changing nature of how tasks are accomplished and thus the changing nature of the associated routines. As Lazaric and Denis note, "Knowledge and its carriers are human and alive: the learning of routines is not a stable process but is largely driven by individual and collective willingness to change them creatively" (2005, p 893).

### 5.7.4 Path Dependency, Strategy and the Amalgamation of Functions

#### 5.7.4.1 REMAP and Strategic Direction in ActewAGL

Much of the strategic planning and change management for ActewAGL came out of the REMAP project. Historically, in normal situations, the decision-makers in the Procurement area have had a very good overall understanding of what the organisation does, how and why and how the section fits into ActewAGL as a whole, that is, the *context and path dependent* nature of the situation. They have know-what, know-why and organisational memory. REMAP (Re-Engineering the Materials Acquisition Process), which will be discussed further in the change chapter, "was a major re-engineering [project for] the whole-of-supply system within Actew". The project had a heavy focus on change management, and guiding the organisational direction in a number of key result areas, as discussed in the change chapter. REMAP was shut down before completion but the embedded knowledge from that project is still providing the strategic direction for many of the people involved. The project itself

> "was developed by the end of 1995. Throughout 1996 we did the systems evaluations and it was probably mid 1996 we decided on the [accounting] system we have now and throughout the rest of 1996 the project then looked at the ideal structure to support the process. … We did systems evaluations against the overarching process, which is the way we wanted it to work. There was a lot of interface going on because at the time they were trying to put in a works management system, which was called FMMS, so we were trying to work with that process as well. The purchasing [function] went in to production July 1997. … So '95 was the process, early '96 was the systems, late '96 was the structure. So come '97 it was all supposed to come together like some big force. (Both laugh). [TLD] But there are always hitches. [Informant] Yes. Throughout that time there was some change management going on. Direct charge purchasing went in mid 1997 …in mid '98 we put the inventory order management and all those systems in."

At the time the project reflected the past and future orientations of the organisation, it had considerable resources, spanned a number of years and produced a number of outcomes. "REMAP had a lot of influence on people's thinking".

### 5.7.4.2 Co-Location of Accounting Functions in Logistics

One of the outcomes of the REMAP project was the co-location of Accounts Payables with Purchasing as part of a whole-of-supply-chain view of organisations.

> "There was a school of thought that Payables is closely related to Purchasing and they wanted to try those two areas together. Payables is traditionally a Finance role and I am not sure how many companies separate their payables from their Finance group … but that is what we are doing here".

This strategy meant "it has been a lot better because you have face to face contact", indeed some informants felt that,

> "it was the best thing that could have happened. …Other companies that aren't doing very well are not separating their functions like this. What results is that we *own* the entire process, something that wouldn't happen if you had data entry type people just entering numbers in Finance – they'd have no ownership."

The co-location of the Payables and Purchasing functions under the auspice of Logistics served to produce ownership, informal relations and routines that are unique to that situation and *context dependent*. The co-location *linked the routines* of one group, the Accounts Payables area, with the routines of another group, the Purchasing area, and provided an overall *triggering* effect. Such a move could also be seen to encapsulate the characteristic of *routines coordinating and controlling* behaviour in that bringing the two groups together provided a means of monitoring the whole process from beginning to end, to locate and address holes in the process and allow the participants from both groups to *economise on cognition*. By co-locating related functions, Logistics routines became *embedded in organisational structures*.

### 5.7.4.3 Historical Path Dependency: Functional Amalgamation in ActewAGL

The *historical path dependency* of ActewAGL continues to affect the functioning of the organisation. The co-location of Accounts Payables and Purchasing worked very well because, as was the rationale for their combination, they were similar functions in terms

of the supply-chain process. Contract Management was included for the same reason - that the management of relationships, the main function of Contract Management, sits on the same supply-chain as the purchasing of the materials and the payment of monies to suppliers. In contrast, the incorporation of the Water functions in 1988 included two disparate functions and cultures into ACTEW, as it was then. The *historical* basis of this inclusion has meant that the Water Division and the Electricity Networks Division within ActewAGL have developed with *path dependencies* as to where they came from. Thus,

> "the organisation, management and culture of [what was in 1988] the Water Supply and Sewerage Branch differed greatly from those of [what was] ACTEA. The latter had long been operating as an independent organisation with its own budget and a focus on full cost recovery in its operations. The Water Supply and Sewerage Branch, on the other hand, remained steeped in public service tradition, where it had been a small cell within a large department and required a succession of approvals from different levels within the organisation before funds could be expended" (Donovan 1999, p 164).

Even now "Water is very bureaucratic" and as one informant said,

> "they still have a public service mentality. For example a couple of years ago they needed an upgrade to their heating systems. Facilities dealt with it and wrote a page brief on what needed to be done. One of the managers at Water said 'it will never get through unless it is this thick (indicating an inch or more), bulk it up'. So they spent six months or more bulking up this proposal so that it would [allegedly] get through."

The historical basis from which they derived and the embedded, distributed knowledge of each group continues to affect the way they operate and the routines they adopt, although this is slowly changing, as one informant noted,

> "Water and Electricity were brought together in 1988 and they remained extremely fragmented groups for a very long time. [With a change of CEOs] in about 1990 /91 his solution was to bring them together and anything to do with assets, be it water or electricity, the engineers dealt with and anything to do with maintenance the field crews dealt with. … Certainly even now the organisation isn't as fragmented as it was because at least now, administratively the organisation works the same way, whereas up until then Water still wanted to use their own HR system, the way they purchased things – like they used ACTEW books and everything but they had a different view of the world. The other thing was systems. The systems were different…. So to bring it all together was [that CEO's] solution to it, was to go across that way (gesturing horizontally). Then, … the town was split so we had assets people at Mitchell handling north-side and maintenance people at Mitchell handling north-side …[and the same in the south]. However it did get Electricity and Water together to some extent. So it did achieve that goal and it did bring them together in terms of system and culture – so it did work towards that. Part of what happened when the new CEO (after the one that brought them together) came in was to split Water and Electricity back. … But then it was really interesting because prior to [the joining of Electricity and Water in around 1990/1] there was a distinct way that Water worked or a distinct way that Electricity worked then it became a distinct way the Greenway worked or a distinct way the Mitchell worked. … Now we are back to Water and Electricity and things are

> much more streamlined but you will hear it that Water just don't tow the line, they just don't get on board."

This indeed was the case. Water was more problematic for the Procurement Section and thus routines evolved to deal with these people / issues.[54] The routines for solving these problems, of course, differed.

The routines associated with the operations of Water and Electricity differed supporting the notion that routines are *path-dependent and shaped by history,* organisational memory, local learning processes and cultural differences arising from those (Becker 2004, p 651). Water is as it was twenty years ago and so is Electricity in terms of their preferred modes of operating, despite the fact that there have been massive changes in organisational structure during that period. The *path dependency* of both Water and Electricity are so strong that despite *historically* based structural change each group reverted back to the preferred bundle of routines that had existed pre 1988. In this situation trying to create homogeneity of practices through the amalgamation of Water and Electricity divisions proved difficult because the local heterogeneity of the routines persisted (Becker 2003, p 14-15), as can be seen in the informant comments above. In this situation, the routines adapted incrementally in response to feedback about outcomes and reverted back to a preferred mode based on previous states (Levitt and March 1988; Cohen et al. 1996). Thus the routines for each area can be seen to be *stable patterns* reinforcing an *inertia* that doesn't reflect the change in circumstances. This *path dependence, inertia and stability are characteristics of routines*, as can be seen very clearly in the processes of the two divisions.

[54] I have noted earlier that the routines were *not self-actuating*, however there were some people in the organisation whose names *triggered* the almost unconscious engagement of *problem-solving* routines when they were associated with orders, invoices or processes.

### 5.7.5 Collective Sense-making in Procurement

People within Procurement *collectively* make sense of the routines and achieve things through their *knowledge* of the routines, the *context* and *historical situatedness* of the routine. That is, using Weick's (1995) sense-making criterion, the routines themselves are sense-making events in that they are social, ongoing, grounded in the collective identity of the group, are retrospective, are situated in action, are driven by plausibility and they are extracted by cues of the environment. Thus the process of making sense of the routines results in decision-making processes which in turn generates more knowledge which then is used to continue to make sense of the routines, and so the loop continues (Choo 1998, p 17-18).

The situation is that no individual has the ability to know the entirety of a process or a routine (March and Simon 1958, p 151) nor to understand the diverse *knowledge* held by all the individuals. Thus individuals have to engage in collective social processes of sense-making, often coming to conclusions through informal discourse (Choo 1998, p 67). Individuals within a work group, such as the Procurement Section of ActewAGL, all have individual knowledge, although this is combined in a *collective* way in the local *context* to produce routines that differ depending on that *context* (Cohendet and Llerena 2003, p 273). In Procurement this means that,

> "each person has a specific set of knowledge which isn't replicated throughout the branch. This means that there is no fat if someone falls off the twig and that there is no one trained up to replace them. This will only get worse as downsizing progresses".

Thus, where the knowledge is not replicated the group constantly improvises by engaging with one another to make sense of the knowledge they do have and to improve the processes. This leads to groups such as the Logistics people becoming skilled in the

development and improvement of system, such as the technological systems as discussed further in the change and in/formal chapters.

A particularly pertinent example of the importance of the routines not only *embodying knowledge* but also requiring know-what and know-why knowledge and a *conscious problem-solving* strategy to *change* is illustrated in the following informant comments.

> "When I came into this job what I found that there were a lot of people doing things day-in and day-out but there was very little control or processes in place to control the actual knowledge. I'll give you a good example, a simple thing like the supply of padlocks. We buy a lot of padlocks off [a lock company] and we sell padlocks to the public, I've got one in fact, they are very good, if you haven't got one you should get one. The idea is that you as a citizen can lock your meter box up to stop people turning it off, or to stop villains turning it off and then coming back the next day and knowing that you are away if it is still off, stuff like that. So some people like to lock their power boxes but you can't just put any padlock on it, it has to be a padlock that a meter reader can undo. So we have these padlocks and they are keyed in such a manner that a meter reader can unlock any padlock but you can't unlock mine and I can't unlock yours. So that is a very complicated keying process, in rough terms they are keyed alike but not alike. Now there is about 150 different combinations of these padlocks so the chance of two people having the same are pretty low, conceivable but low.
>
> Going back ten years or so we had a branch within Actew called Engineering Services Branch. It has since been abolished, sort of outsourced in fact they went across to Ecowise. They used to do the keying in the old days and we used to buy blank or ordinary padlocks off [the lock company] and they would re-key and re-jig them in their workshops. A very expensive thing to do but that's how business used to run in those days. Now the keying profile for all those was on a bit of paper, it wasn't on a computer anywhere. I can remember that one of the PO's (Purchasing Officer) had this and used to use it when he placed the order with [the locksmiths] to say we want these keying combinations. It was all in a particular code and locksmiths knew what that code meant. But that guy left. I can remember grabbing that bit of paper and thought 'My God if this gets lost!' About the same time Engineering Services Branch was disbanded so all the knowledge went out the door; it went with the guys and left the organisation. Two years later people were running around looking for it (the lock combinations) and I pulled it out of my filing cabinet. At that stage I said to [two colleagues] 'this is really urgent that we get this onto a contract'. One of the things I have pushed hard is to get things out of people's drawers and private filing systems and one of the spin offs of having contracts is that [a file is raised], you've seen them we have them in the compactus there, and then just about everything we do now is on files. So that piece of paper with the keying combinations is on file but it is now also typed up and held electronically.
>
> [TLD] So you retain that knowledge in the organisation.
>
> [Informant] That's right and that is a very good example of the ramifications of …if that ever got lost… maybe [the lock company] would be able to duplicate them because they've been doing it for such a long time but maybe not. The thing is that you can never change it because there are thousands of people out in the Canberra community that couldn't get in. You'd have to put out a public notice saying all the locks are now useless and if you've got a lock bring it in and we'll give you a new one. This would cost thousands of dollars and apart from anything else you'd never get people to do it so you'd be going around with bolt cutters and cutting off the locks when you were trying to read their meter and leaving them with a new one. So that's just an example of how knowledge which is pretty critical can get lost with branches disbanding, redundancies and people just moving on and all the rest of it. And if it is not properly controlled you are going to have real problems."

This story clearly shows the way *knowledge is embedded in routines*, even in *historical* routines, yet if it is held by individuals, especially tacitly, or explicitly but not available to the community, then the knowledge and the routines it enables becomes fragile and may disappear. Explicit knowledge may be long embedded and difficult to change, but it nevertheless can be lost. If that knowledge (or organisational memory) is lost, through the person who has the knowledge leaving or failing to pass it on, then the routine will cease to function smoothly. Alternatively, as the story shows, in order to keep the routine of the task accomplishment *stable*, either the *context* or *how* the routine is accomplished needs to be changed. Such a change and the *problem-solving* involved require an understanding of the overall processes and of the *path dependent* relationships between the routines and subsequently the implications that loss of knowledge will have. This informant was able to gain access to the lessons created through the *historical nature of the routine* (Levitt and March 1988), and so prevent the disastrous situation of the loss of knowledge. As an individual, he was able to *change* or "breathe life into the routine" (Feldman 2000, p 627) by putting the combinations on file, thus codifying the *embedded knowledge of the routine* and making it explicit and accessible to the *collective* group. He managed to avoid the costly process of having to relearn or recreate a routine. One of the main reasons that routines persist is because learning and relearning routines is costly (Nelson and Winter 2002, p 30).

### 5.7.6 Structures Facilitating Routines in Procurement

In an informal environment such as the Procurement Section, some structures, including performance management discussions and some meetings have been formalised to ensure predictability and stability in accomplishing organisational goals. Formal authority to get things done has been devolved to the work groups, allowing them to

solve problems through their distributed knowledge (Foss and Foss 2002) supported by organisational structures, such as performance management processes. In Logistics, the formalisation and improvisation of organisational performance management structures have become a routine in themselves.[55] 'Quality time' discussions are held between supervisors and their subordinates providing a routinised way of discussing problems, progress and performance issues. This feedback and communication is reinforced in the monthly Procurement team meeting, the monthly management review meetings and the weekly expediting meetings.

The expediting meetings allowed the participants to construct, enact and reinterpret events (Feldman and Rafaeli 2002), that is, to make sense of their environment (Weick 1995, p 142-44). They were established to,

> "get these guys (the Purchasing Officers) thinking, forward thinking in terms of projects that are coming up, because that is what [the new work's management system] will expect. If there is a demand put in for something needed on the 10th August, [the works management system] will demand that the stuff is there on the 10th August. So [the Purchasing Officers] are going to have to get it here somehow or other or the whole project will be put back. Manually that is what is happening at the moment, but at the moment all projects are being put back so it is all a bit blasé but [the routine of the expediting meetings] is refining the [process] week by week. … When [we] first started these meetings, which was about four months ago, some of the projects were being pushed out six months, now we are down to two or three weeks".

The background to these meetings was described by an informant and captured in this extract of my ethnographic notes.

> In the field there are materials that could hold up a project if they aren't supplied on time. Logistics used to keep a large inventory but this has been reduced because the cost of maintaining it is phenomenal. This means that in order to get materials, the field people or the developers need to notify Logistics prior to the necessity and these are largely governed by lag times. Sometimes the notification comes at short notice so it is necessary to expedite the orders manually through a process of ringing up suppliers etc.
>
> The Inventory and Warehouse Team-Leader goes to a fortnightly meeting at the branch level and the Operations Manager goes to a higher planning meeting once a fortnight. These meetings look at the process of resourcing projects to accommodate people, labour and materials.
>
> Thus the expediting meetings are a new routine developed (only a month old at the time of writing), aimed at overcoming the information / supply issue. This has been formalised and

[55] Performance management discussions between managers and subordinates are discussed further in section 6.5.5 in the in/formal chapter.

> made into a meeting so that the Purchasing Officers are accountable and have to produce a deliverable.
>
> The Operations Manager receives a summary report and each of the guys receives a detailed report with each of the outstanding items on it. This allows people to concentrate on the items that have the longest lead times, such as transformers, cables and columns (poles) which sometimes have lead times of up to ten weeks.
>
> The [works management system] is a planning system which the field crews will fill in and will include allocations for labour, materials and job requirements. This will, (once operating) automatically generate a purchase order on the supplier if things aren't in stock. Currently requests are received over the counter in the Warehouse, which is too late to account for lag times.

The expediting meeting is a developed routine clearly showing the role that routines have in *co-ordinating and controlling* the processes in organisations as well as the *truce* of motivation and governance that allows the process to succeed. The meetings themselves then *link* to the expediting routine and to the routines enacted by the field crews and the Project Officers. The expediting meeting routine shows a desire to improve processes and the willingness to *change the routines* to accommodate these improvements or adapt to changing circumstances (Feldman 2003; Feldman and Pentland 2003). Such improvements assume an understanding of the larger organisational *context* and what the organisation does, why and how (Feldman and Rafaeli 2002, p 317) (and thus are also *processual*). Changing organisational routines will be discussed further in section 5.7.10 of this chapter.

### 5.7.7 Knowledge in Routines and People in Procurement

The people within ActewAGL rely on know-how, know-why and know-what for carrying out routines, because *knowledge is embedded in routines*. Yet despite the heavy reliance on such knowledge, typically, there are no processes in place for capturing the knowledge. Repeatedly people left the organisation and then returned shortly after, often on contract. For instance, one person left, "but now (only a couple of weeks later) he was back because he had started the stuff with [one of the dams] and so had to come back because there was no one else [with the knowledge] to do it". When people that

have such *knowledge* leave, the routines fall down due to a loss of organisational memory (Nelson and Winter 1982, section 5.1) and so the organisation makes moves to reinstate that knowledge source, to ensure the *stability of the routines*. This is because expert knowledge typically has tacit elements (being embodied in the heads of individuals in the organisation and not put in structured documented form) (Davenport et al. 1998, p 45) and unless explicit efforts are made, it is not easily transferable.

Many of the people in Procurement (and Logistics generally) have been in the organisation for a long time and are very knowledgeable, resulting in them becoming the 'go to people' for assistance with accounts, the accounting package or for information about who to go to for solutions to problems. They have a reputation for being able to find things and for whom "nothing is a problem …[and from whom one] never ha[s] a problem retrieving anything from". The distributed or collective knowledge enables this deference, despite their physical and functional isolation from the rest of the organisation, as discussed further in the in/formal and power chapters. In terms of function they "tend to be a little bit isolated here in terms of the mainstream organisation," yet they maintain links with the whole organisation and are relied on in part due to their extensive knowledge.

### 5.7.8 Inertia, Passivity and Performance in Procurement

Some routines develop to counteract negative feedback, and some routines in Logistics continue to exist despite negative feedback. On a personal level, some staff at Logistics have adopted a passive stance allowing them to get things done less stressfully. Many of the staff have been with ActewAGL for a long time and are quite *inert* about their role

in organisational operation with comments like "I am not doing anything until I get some authorisation on this" or stating that they don't care about issues that they obviously do care about, as illustrated with this comment:

> "If they did it I would retire. You can't be going sticking your nose in other people's business, you just have to do your job and not worry about other people making mistakes. I don't worry about other people's business I just do my job and keep my nose clean."

Such attitudes provide a coping mechanism to deal with *uncertainty* and allow a way of dealing with cognitive dissonance (Festinger 1957). The attitudes reinforce existing routines in that people escalate issues to someone with more authority or frame future behaviours, as in the case of keeping your nose clean to keep out of trouble.

Some of the routines themselves show *inertia.* Such inertia can be seen in the manual purchase order routine, as this extract of my ethnographic notes illustrates.

> "In the old days Accounts Payables used to have a full time person to open the mail because of the number of Manual Purchase Orders (MPOs) that were received both because there was more work involved in processing them and because they were problematic. Recently the aim has to been to get all purchasing done through raising a purchase order on the system. As a result of this there is a significant statistical difference between the number of MPOs last year compared to how few there are this year."

Everyone is supposed to raise a purchase order on the system when ordering items, but one of the personal assistants to a senior manager

> "refuses to do it, no one can tell her to do it. [Even a] big boss couldn't tell her to do it. [There are] some people you can't tell to do things. But it is not my job to tell anyone to do things. I just do my job. Someone did try to tell everyone, it nearly sent them mad, - mental. They went mental."

As such, through her and others refusal to do the purchase orders in the routine way a sub-routine developed as part of the *truce* of this situation. To get around the situation the Procurement team raises a manual purchase order for these people, although this is not the routine way of paying for purchases. The sub-routine is dysfunctional. However it has set in because despite the counterproductive nature of the routine it is easier to complete the task themselves than to fight with powerful people in the organisation. This process has been going on for approximately eight years, showing the *inertia* even

a dysfunctional routine develops. The task accomplishment continues in this way and no one changes it. This sort of inertia is characteristic of routines, often existing even in the face of negative performance feedback (Becker 2003, p 20; Becker 2004, p 659) so providing a degree of stability.

### 5.7.9 Stability and Change in ActewAGL Routines

S*tability* is noticeable in the tasks of utilities. Such stability, as discussed in the change chapter, is noticeable not only in ActewAGL but widely acknowledged by other authors that refer to the "stable and predictable industries, such as most utilities" (Sutcliffe and Weber 2003, p 76). ActewAGL adopt many different technologies but the core technology and competencies required to deliver water and electricity to the community change very little. My own instruction of the fundamentals of transformers was based on a 1950s model. Due to the *stability* of the technology people gain know-how *knowledge* in the form of skills and expertise as well as understandings or know-what of how technical equipment works. That *knowledge* remains valid throughout their career. Of course this *knowledge* is individual, although much of it is explicitly available, but within it resides tacit knowledge in the form of individual preferences. This can account for the fact that the organisation stocks over 91 different types of transformers and padmounts – requested by "engineers and techos identifying items that can be changed, by them approaching the company representatives" but most of these *changes* are minor and the underlying technology itself is quite *stable*, as are the tasks associated with the maintenance and provision of these services. Thus routines dealing with this *stable* technology emphasise the *context dependent nature of routines*.

### 5.7.10 Changes to Routines in Procurement

The infrastructure technology, the staff turnover and the tasks (and routines) associated with the provision of electricity and water to the community remains relatively *inert or stable*, but within the operations of Logistics, in particular the Procurement Section, they do indeed *change*. In the Procurement Section *changes* are constant, particularly in how routines are carried out. Many of these *changes* occur as a means of *coping with the uncertainty* of new technological systems employed throughout the organisation, frequently and often without being given time to bed down before being superceded, as discussed in the change chapter. Because of the complexity of the accounts / purchasing system people learn one of many ways of accessing and understanding the system and tend to stick with that. Yet there are some people in the Procurement Section (and also in the Warehouse) who have adopted an experimental attitude to the system and who take it on themselves to "look at the system and see what can be done", as discussed in the in/formal chapter. This experimental attitude has become a routine in itself where certain people are particularly savvy with the technology are

> "trying to say to [their colleagues] that it is their system as well so instead of just using it as they have been trained, to question it. [As such a number of people] have questioned it a number of times, added some things, found a couple of things",

and have led to the development of new functionality within the system. These *changes* often come from people within the team making a suggestion and then this is looked into and passed onto the team that deal with the system centrally. If it is too hard for them, they pass it onto the technology company and eventually, if it is possible, the changes get made to the system. This process is routinised and it is *collective* in that virtually all people in Logistics are aware of how they could initiate changes they wished to make. These *changes* are systems changes or planned *changes* – one of the ways that adaptation can be achieved in an organisation (Moorman and Miner 1998, p 705).

Yet other *changes to the routines* are occurring continually, initiated by individuals (Moorman and Miner 1998, p 703). The changes are created at the individual level and passed onto colleagues thus becoming *collective* in nature. Individuals have a great deal of freedom in deciding what actions they will take in particular situations. This freedom extends to the routine of paying erroneous invoices where mistakes have been made in the raising and /or receipting of them. Such freedom is a source of power, as discussed in the power chapter. As part of the process of ensuring that a reasonable degree of accuracy is achieved with regards to paying invoices the team have been instructed that "if they (the invoices) don't have GST included (because they should) don't pay it but send it back to [the company] and ask them to make another invoice". Yet in many circumstances individuals changed this routine and simply calculated the GST themselves and then paid the invoice, thus *economising* on work for the Procurement staff and for the supplier company and allowing timely payment. Such changes to the routine are *circumstantial* or *context dependent*, involve *problem-solving* skills and the application of tacit and explicit *knowledge* and are dependent on individual know-what, know-how and expert knowledge.

*Changes to routines* through *consciously* evoked *problem-solving* are also evidenced in situations where individuals within ActewAGL (outside of Logistics) make errors on their purchase order entries in the system. The general practice is to raise a purchase order for goods before they are purchased and for the work units to enter this into the system, thus creating codified and explicit *knowledge*, and to have it approved at the

time depending on delegation levels of the individuals.[56] Once the work is done or the goods are received the supplier sends an invoice (usually) to the person in the ActewAGL division who ordered the goods or services. This person is then supposed to correct the purchase order amount if it differs from the amount on the invoice, receive the goods and receipt the invoice. In the case of auto-payment suppliers the supplier is then paid via Electronic Funds Transfer (EFT) but if they are not an auto-payment supplier then the system prompts the person to send the invoice to Accounts Payable in Logistics for payment. Sometimes the people in the divisions initially raise the purchase order for a nominal amount, say $1, where the cost is unknown, or they might include GST in the purchase order which is supposed to be a pre-GST price or make other such minor errors. For instance at one point I received an invoice which had been receipted but for which there was an additional freight charge. I asked a colleague if I should send it back or email the fellow to whom it belonged. She said to email him but not to worry about sending it back to him so that he could amend the amount and then send it back to Procurement, as it wasn't worth the hassle for $9.50. In this instance the Accounts Payable people would amend the price themselves and then release and approve the order when it came up 'on hold' the following day. The colleague said that as the fellow who had made the error did not do invoices often he probably would not know the system well so it was not worth giving him a task he might not be confident in completing. Sometimes you send it back, "it just depends who it is".

Thus it can be seen that the routines within Procurement are *processual*, *context dependent* and that they depend on various kinds of *knowledge* (individual and organisational, tacit, explicit, codified, know-how, know-what and know-who and

[56] Although, some areas such as Facilities Management, raise them after the event when they receive an invoice for the work done.

information) and the *problem-solving* skills of the participants, as well as the ability to solve organisational problems based on "the successful solutions to problems solved by the organisation in the past" (Cohendet and Llerena 2003, p 274). In many cases the understandings of what has gone before is gained through the informal interactions, discussed further in the in/formal chapter, through problem-solving efforts which are both communal in terms of them being based on distributed knowledge (Foss and Foss 2002), and individual and through *historically* grounded understandings of the organisation as a social setting.

An understanding of performance and competences in the process is important not only in the carrying out of the routines but also in the participant's ability to *change the routines depending on circumstances* and the most efficient way to achieve results given those circumstances. This ability to *change the routine* is evidenced in many examples of similar situations where you could be told anything from "no don't [amend the system]. Send it back to him because he is quite sloppy all the time with his invoices and I am sick of fixing it up for him", to "change it to $170 [from $165] and I'll approve it for you tomorrow" to "he's a fieldworker and he won't respond to you if you send them something. Send a note to [the administrative officer in the area] and she can raise an order and 'give the guy a kick up the bum' (because he had told a supplier he does not give purchase order numbers he just processes it)".

These responses show not only that *routines change* and can be changed by individuals *depending on the circumstances*, but also allude to some of the power relations and organisational *truces* in the organisation. Sometimes routines persist because conflict is costly and conflict can be avoided by sticking to a routine (Nelson and Winter 2002, p

30-31). Sometimes routines represent power held by individuals, exercised through the ability to change the routines and respond to recalcitrance or tardiness in other individuals. Certain people, even sometimes people relatively low in the hierarchy, have power to metaphorically 'kick [people] up the bum'. People in Procurement either have the power to do so themselves in some instances or to utilise others to get them to do it. Where this occurs the routine as a *truce* is evidenced in that despite the formal hierarchical structures of the organisation, people will be motivated and governed by the actions of certain people within the social structure of the organisation and that intra-organisational conflict will be controlled (Nelson and Winter 1982). These uses and recognition of power and *truce* will be discussed further in the power chapter.

The ability to change the routines and have those changes institutionalised shows the importance of individual and collective agency in the routines. Routines are *collective* but individuals within that collective perform the routines, interact with the environment, have an ability to draw on the past, imagine the future and to respond to present circumstances as a reaction to the past, foreshadowing the future (Emirbayer and Mische 1998). Individuals have a choice and are able to change aspects of routines in order to improve efficiency, however they do not act alone but within the context of the collectivity - sometimes these changes become part of the adapted routine within the collective context (Feldman and Pentland 2003).

### 5.7.11 Adapting Routines to Deal with External Issues

Sometimes changes can occur in routines through events that could not possibly be planned, such as the natural disasters that ActewAGL coped with in 2003. At the

beginning of 2003, the Canberra community experienced one of the worst natural disasters in its history with the advent of the devastating bushfires that severely hit the western suburbs of Canberra. This event brought the ActewAGL staff together in way that created "amazing teamwork". Yet, consistently my colleagues reported that the fires brought people together but afterwards "it was like the fires never happened". People just got on, did the job that was required and then reverted back to their usual work practices. This was also evident in some large windstorms that hit Canberra and the South Coast in August of the same year. As with the fires, ActewAGL staff got on and did what needed to be done. During this time the storms were a topic of conversation, but afterwards it was again as if they never happened. In both these *crisis* situations, the normal routines did not apply, everyone helped out "wherever it was needed, everyone was doing it", people were undertaking roles that normally were outside their repertoire of tasks, Purchasing Officers "couldn't get parts, we lost a lot of equipment, we stopped counting at 990 poles … we had stuff coming from everywhere, it was madness", cost did not matter and people just did what was needed. Such crisis situations are indicative of the way *routines change in a crisis* and the way routines help to *reduce uncertainty* by enabling decision-making in situations that are characterised by environmental turbulence (Becker 2005a, p 749-50). In such uncertain situations, "routines make an important contribution to actors' ability to pick a course of action" (Becker 2004, p 657). ActewAGL has done some things to formalise these changes in routines such as writing a lessons learnt document and preparing a crisis plan, but mostly the view is that "two weeks later it was like they never happened", thus showing the way routines revert back to the *stable and inert*. Such lessons learnt processes and the subsequent change to routines next time a crisis occurs shows a propensity for routines to change based on trial and error experimentation (if crises can be viewed as

experiments) (Cyert and March 1963; Cohendet and Llerena 2003), but also shows how the *knowledge embedded in the routines* can be made explicit in such crisis situations.

Routines and reciprocity play an important part in allowing ActewAGL to cope with unforeseen situations. ActewAGL know bushfires, floods, droughts, system overloads etc will occur, as one informant said, "it is just something that happens in our industry. The same with storms, lightning etc." However, when such a crisis occurs, ActewAGL draws on the support of the community, suppliers and other utility companies. This is possible because of a degree of reciprocity that is established between all of these groups and because of established relationships.[57] Through such relationships *truces* are enacted. For instance during the fires, ActewAGL was assisted by utility companies from all over Victoria and New South Wales, although these companies are ActewAGL's direct competitors. When the windstorms hit, the South Coast was more severely affected than Canberra, so ActewAGL reciprocated and sent crews to Wollongong to help out even though ActewAGL were already stretched. This was all because "we owe these guys big time" as a result of the help they gave during the January 2003 fires. Partly these responses were reciprocal and partly they were because ActewAGL worked hard to maintain their good corporate citizen persona, as discussed further in the in/formal chapter. Further, when for instance a Purchasing Officer rings a supplier attempting to expedite a late item the relationship that has been established will (hopefully) mean that a *truce* is made and the supplier will attempt to get the items out to ActewAGL, thus assisting with the *problem-solving* the officer is engaged in.

[57] The law of reciprocity allows things to get done where there is no direct relationship of authority. This relies on mutual exchange processes and is only effective when a person or group is able to offer something that the other person or group needs. This increases the power of the group able to provide others with their needs, as discussed in (Cohen and Tushman 1995).

### 5.7.12 Problem-Solving in Procurement

In Procurement, *problem-solving* is necessary to deal with the complexities of the systems and the different ways processes can be approached. Whilst the front and back ends of the processes in Procurement are relatively stable, requiring matching of the input and output amounts, as discussed in the in/formal chapter, the way this can be achieved varies considerably. As one informant noted,

> "there are different ways that you can do it. There are different ways that you can process purchase orders for instance. Like you can do it via preferences prior to actually doing the purchase order, which basically sets up all your dates and costings and that sort of thing and then do the order, or most people in the organisation do the order and then do the shipment and distribution information. There are different ways you can process it. It really depends on the situation, some orders you are better off doing with the preferences some you aren't".

This is the case for many of the processes where "there are so many different things that you're told that you don't know which is correct" thus you can go to three different colleagues and "they will all have their preferred way of doing things and will enter through a different route." People adopt a strategy of "doing things in the way [they are] comfortable with" and informally ask colleagues when they hit a complication or when their own strategies are incapable of providing answers. These routines are dependent on the *collective* community in which they are created, endorsed and supported (Cohendet and Llerena 2003). Deciding on whom to ask and being able to identify when the routine is not producing desired outcomes, requires *problem-solving skills* and *conscious thought* in order for the task to be accomplished. As a strategy, this reliance on informal channels and established networks, allows the people enacting the routines *to economise on cognitive resources.* No individual in an organisation can know everything about the operations of the business (March and Simon 1958). Through adopting different strategies to solve problems and informally conferring with colleagues when in doubt, the organisation is able to gain access to a much wider collection of alternatives and to attend to more organisational goals simultaneously (Cyert and March 1963), by drawing on distributed knowledge.

In all cases knowledge of the *processes* and of how to obtain the best results, as well as *problem-solving skills* are necessary to decide which strategies provided the most useful access to the system and the most appropriate answers for arising issues. This *knowledge* is often called know-how. When the individual's *knowledge* doesn't meet the requirements of the task, they draw on know-who in order to obtain the knowledge needed for task completion. Such *knowledge is embedded in the routines of an organisation*.

The routines of purchasing and paying are relatively *repetitive* in what is achieved however, they also rely on problem-solving. Every invoice and every purchase presents individual *problems* that need to be *thought about* and analysed for the most appropriate method of solving them. In their repetitive capacity the routines represent processual knowledge. However in the way they are carried out and thought about they represent the cognitive view of knowledge and know-why. For example, each day the Purchasing Officers get a series of email alerts notifying them of the need to raise a purchase order for items that have been forecasted for upcoming jobs. They check whether the items required are on contract agreements and if so if they have been purchased recently. If they are neither on contract nor purchased recently it is necessary to request a quote from the supplier. If they have been purchased recently, the Purchasing Officer enters the details onto the system and a purchase order is generated. If the supplier is an auto-fax supplier the purchase order is automatically faxed to the supplier thus setting in train the acquisition of the product. If the supplier is not on the auto-fax arrangement on the system, the purchase order needs to be faxed manually to the supplier. Should an item then fail to arrive on time, arrive faulty, be deficit (or excess) in amount or not be able

to be supplied, the Purchasing Officer then needs to assess the problem and make moves to fix it. When *solving a purchasing problem*, the process could involve ringing the supplier, ringing other companies to see if items could be sourced from elsewhere, "going for a wander into the store (Warehouse) to see if items have been receipted", ringing the specifying officer to see if the item meet with standards, or going out to other ActewAGL sites or supplier sites to "try and sort it out". Thus the possibilities for each order are wide, varied and depend on the stimulus received for determining the way the routine is enacted. Each sub-routine within these routines may *link with and initiate or trigger other subsequent routines*. In every situation there are many possible action alternatives, or grammars for action (Pentland and Rueter 1994; Pentland 1995) and these are neither predictable nor necessarily repeatable. The choice of action is *context dependent* and requires the individual to engage in *problem-solving* strategies in order to carry out the tasks within the routine or set of routines.

Similarly, paying an invoice may include consulting with the Purchasing Officer, or with the suppliers, calculating amounts that are inconsistent, sending emails to get approval to increase or decrease the amount on the system, searching for invoices to see if they have been paid, or trying to sort out overpayments. These routines are not *self-actuating* and void of conscious thought, despite their often *repetitive* nature. Much of this involves "detective work" or *problem-solving* involving individuals and groups, as discussed in the in/formal chapter. The officers themselves often state that "anyone could do my job" yet they are well aware of the *problem-solving* nature of their tasks and the extensive supplementary knowledge needed to do their jobs (Kusterer 1978).[58]

[58] Kusterer (1978) also found that many of his informants initially undermined their roles suggesting that they did not require any special skills or knowledge but actually found that the subjects of his research possessed basic knowledge of procedures to carry out routine tasks but also extensive supplementary knowledge which included the know-how necessary to handle obstacles to the routine work, just as the

This awareness is evident in the indignation felt when many of their jobs were reclassified and described as 'data entry' positions.[59] The

> "perception [was] of Procurement as a bunch of rubber stampers. This perception came from people who should have known better. On the one hand they are telling us that we should be professionals and on the other they are saying you are rubber stampers, just data operators".

For many people, such a classification still smarts, and justifiably so because the positions actually require extensive *knowledge* and *problem-solving skills* –the routines are not *unconscious repetition* that is mechanically actuated but require *conscious thought.*

### 5.7.13 Historical Influences on Routines in the Warehouse

The Storepeople operate in a self-directed work team, which is a *collective* arrangement whereby the responsibilities for operation are removed from the hierarchical structure of the organisation and handed to the collective. The bundle of routines of the old way of operating, with a supervisor, a hierarchical structure and one person being responsible for individual tasks, *changed* with the catalyst of dissatisfaction. However, like the Water / Electricity amalgamation example discussed above, the routines governing the Warehouse are *path dependent* and *driven by history*. The *inertia* and *stability* that was created by the previous management structure of the Warehouse meant that people felt that the self-directed work teams did not really work. It was felt by informants that many of the participants lacked the motivation to make it work preferring the idea of managing themselves but actually wanting the direction of a supervisor. Thus over time they reverted (unconsciously) to the previous mode of management, even though this

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people in Logistics have. Much of this knowledge is not detectable to the untrained eye and thus in terms of the knowledge taxonomies is know-what.

[59] This occurred some years ago when the organisation was in a state of flux and was reeling from some fairly major organisational changes. These changes included the implementation of a new computer system, organisational restructures and the associated downsizing of 1998. During this period, as a result of an incentive bonus offering $10,000 to those who left within two weeks, the organisation lost over 135 people in two weeks.

had been shown to not work effectively, that is reverting to routines that exist even in the face of negative feedback (Becker 2003, p 20). This can be seen in the co-ordinator roles. When people rotate to the co-ordinator position, they often adopt a 'management style' similar to a supervisor rather than a colleague or a co-ordinator. Yet,

> "supervising a self-managed team is very different than supervising a traditional workgroup. As a result, the supervisors often do not adapt and are not effective in [the] new system. Training can help some, but it still turns out to be a difficult position to fill and perform" (Lawler 1982, p 302).

The self-directed work teams also brought *changes* to the routines of how tasks are allocated for the Warehouse staff. With the aim of encouraging multi-skilling and *economising on cognitive resources*, through allowing the staff to access the *collective knowledge* of the group and of the routines themselves,

> "the Warehouse staff rotate into receipting positions, along with all the other positions. There is someone on receipts, someone on deliveries, [someone dealing with discrepancies, someone acting as co-ordinator and another being responsible for shipping], someone at Greenway and one at Mitchell and two or three people on issues. In all there are nine rotating positions." … "Initially the rotations started at six weeks but they decided that this was too short and so extended it to eight weeks."

Given the *context* of staff dissatisfactions, the routine of rotating staff was initially developed as part of the *historical and path dependent* process of changing the way the Warehouse ran. The routines associated with rotating positions, including learning new roles, handing over previous roles and of meeting various competencies associated with each position serve to *co-ordinate and control* the tasks and provide direction to individuals.

The development of the rotations routine ensures that *change* occurs however the learning is not embedded. The routine fragments the responsibilities in that people only spend $1/9^{th}$ of their time in a job they and are likely to forget how the individual

subroutines in the Warehouse occur. As a consequence they are unable to build up expert *knowledge* in any one area as shown in this informant comment.

> "Everyone is expected to know a little bit of everything and the rotation is that quick you are probably not in it for long enough to see all the facets of how that job works. You might be in say receipts for example and for your eight week period that you are in receipts, you might get something in that is only ordered once a year and you've never seen that and you don't know what to do with that particular item. Unless you go in and read the procedure about what is to be done about that particular inventory item, or ask around, you are going to be between a rock and a hard place."

The routine of the rotations increases individual *knowledge* of the whole Warehouse but also represents a trade-off in that it lowers the *embedded knowledge* of each of the *interlinked* subroutines. The sub-routines remain relative *stable* but because people rotate rapidly it is difficult to build up expert knowledge and so the *history* of each of the sub-routines is lost. Thus the *interlinked* nature of all the Warehouse routines results in the overarching rotations routine becoming *inert*, in that it continues despite the negative effect on all other routines. As with many organisational routines, this routine and its benefits and disadvantages are not purely black and white.

By making explicit the knowledge that would otherwise remain tacit, (it being the knowledge associated with expertise) it was hoped that *truces* would develop and the group would act *collectively* as a cohesive unit. Whilst this occurred to a certain extent, the rotations created "Jack[s] of all trades, expert in none" where "you don't know is in charge and when you ask it is someone different each time and there is no ownership", thus there are some tasks that do not get done. The *truces* established as a result of the routines are more orientated towards the individual rather than the *collective*, because "they are all batting for themselves". As such, *procedural or processual knowledge* is made explicit but much of the *knowledge* remains tacit, in the heads of individuals.

### 5.7.14 Complexity and Conscious Thought: Warehouse Roles and Tasks

Just as in Procurement, the intranet-based statement of the role of the Warehouse fails to identify the vast complexities of the tasks and assigns them incorrectly to the realms of the *self-actuating*. According to the intranet site, the role of the Fyshwick Warehouse and sub-stores is to provide services to the whole of ActewAGL incorporating "receipting, issuing, cross docking, consolidating, and stocktaking" the Warehouse inventory. This classification implies very routinised processes and simplifies them to mindlessness. Yet the routines that I saw and was involved in are neither *mindless* nor *unconsciously enacted* but require extensive *problem-solving skills*. The processes within the tasks are quite *repetitive*, consisting of picking items from pick slips and packing them for customers, creating requisitions for over-the-counter customers and picking those items, receiving, receipting and putting away incoming items. The Warehouse is structured according to a series of numbered bays consisting of numbered shelves. The high moving stock is located closest to the entrance, the receipts and packing benches and the slow moving stock is located further away. Picking items requires locating the bay, shelf and bin numbers from the pick slip and then counting out the required quantity of items, recording the number of items picked on the pick slip, signing and dating the pick slip, packing the goods and placing the pick slip in the Shipper's tray. The Shipper then records the items taken on the system and 'ships them', recalculating (via the system) the number of stock items on hand. Each *routine is linked to another* and the whole process is interconnected and quite complex, as discussed in section 5.7.19 of this chapter.

The *processual* and *repetitive* nature of the routines in the Warehouse is similar to most inventory management processes, as shown through other studies, such as March and

Simon's illustration of programs (or routines) enabling the facilitation of recurring events in a similar system for inventory control (March and Simon 1958, p 146). This process should be *self-actuating* and in many warehouses the process is highly routinised and even automated. Some tasks are quite tedious and could be automated, but it is important to consider which of these tasks require conscious decision-making before automating them outright (Suchman 2000a).

Although the routines are *repetitive* and *processual* in nature, just as in the Procurement Section, the routines in the Warehouse are not *devoid of conscious thought*. Within the routines, there is potential for various problems to arise and the subsequent need to then *solve these problems*, thus removing the *self-actuating* nature of the tasks. Some days my colleagues and I would spend almost the entire day dealing with complications with a requisition, locations, cable discrepancies and non-stocked items or items in incorrect bin locations. The processes within the Warehouse are quite complex and although each of the tasks within the routines is fairly *repetitive* and *predictable*, the stimulus for action at the fuzzy beginning and end of the processes varies considerably, as opposed to the Procurement Section where the front and back ends of the processes are *stable*.[60] Where the stimulus changes, the "performance programs" (March and Simon 1958) or the way programs (or groups of routines) are nestled together changes. Where the Warehouse staff encounter a changed stimulus (Pentland 1992; Pentland and Rueter 1994), perhaps in the form of a different or unusual request from a customer, they are

[60] The fuzzy front and back end of the processes are explained further in the Informal / Formal chapter. In brief this refers to the different ways the processes are perceived in the Warehouse compared to the Procurement Section. In the Procurement Section for instance the beginnings and ends of the processes are defined and governed by good accounting practices and thus they are rigid. In the middle of the process however the Procurement Section staff have a great deal of flexibility in how they deal with situations, different people's issues and the way they can solve problems. In contrast, in the Warehouse the processes are fluid and uncertain (and thus fuzzy) at the beginning and end, dependent upon customer requirements, project dates etc, however in the middle the processes are governed by strict procedures and linear checks; - there is little flexibility.

forced to adopt *thoughtful problem-solving* and *deliberation* so as to solve the problem and respond to the stimulus. These stimuli are in themselves non-routine, not *predictable,* but the action group, or grammar for action (Pentland and Rueter 1994; Pentland 1995), that is initiated can be seen to be made up of *patterns*, and thus constitutes a routine. Some of the issues in the Warehouse are related to the system used for managing the Warehouse being accounting-based and thus its functionality is inadequate for warehouse / inventory management, however some of the issues are related to the nature and complexity of the tasks, and some are related to the *historical* situation where there are numerous already existing discrepancies, as will be discussed later.

### 5.7.15 Co-Ordination in the Warehouse: Checklists and Procedures

The Warehouse operations are largely *process driven* with a number of *co-ordinating and controlling* devices such as checklists and procedures used to ensure that the *routines are interlinked* with and *trigger other routines* and *economise on bounded cognition* or the thought individuals have to put in to make the routines function effectively.

The routines in the Warehouse revolve around the clearly defined *processes* and principles surrounding inventory management. Procedures and work instructions exist for virtually all processes in the Warehouse and the self-directed work team has a number of Key Performance Indicators (KPIs) that they are supposed to meet each week and each month. These are reported back, as per the formal systems reporting line in the

communication / feedback model shown as Figure 6.3 in the in/formal chapter. The monthly checklist forms part of these KPIs and

> "was devised as a way of ensuring that the self-directed work teams continued moving towards their goal. [Because, according to some informants] the biggest problem with the self-directed work teams was that there is no responsibility and that despite the direction [of the checklists] the guys do not do the tasks. … The supervisor used to allocate teams to do particular tasks but in this climate [of the self-directed work teams] they just do not get done".

The monthly checklists consist of various "housekeeping tasks [including] dusting shelves, rearranging bins, sweeping floors and generally tidying up" as well as spraying weeds, checking the forecasted area, running the open batch report,[61] doing returns, checking perishable items for use-by-dates, forecasted projects and the direct charge items. This checklist is *linked with the routines* on the daily checklists, on which "there are five daily tasks to complete, including: picking, receipts, MRVs (Manual Return Vouchers), shipping and CMRs (Cable Movement Record) done and items binned (put away)". These feed into the monitored and reported KPIs. Thus in addition to the checklists *acting as a co-ordinating and controlling* devices, *economising on bounded cognition*, they also provide direction in an uncertain situation, so *reducing uncertainty* (Becker 2005a). The checklists represent explicit, codified knowledge highlighting formal tasks and routines that need to be done.

For each of the tasks associated with the Warehouse routines there are procedures and work instructions, which are necessary for the smooth operation and *co-ordination* of tasks. Procedures fall into the category of being codified *knowledge*, being written down. To interpret them requires an information processing view of knowledge where a single cause is attributed to a set of effects rather than a set of causes for the set of effects (Nightingale 2003, p 164). They thus form procedural knowledge, illustrating the

[61] The Open Batch Report details any requisitions that have been raised but not completed through the shipping processes, that is, they remain still 'open'. Such 'open' requisitions often represent potential problems that may need to be investigated.

*processual* nature of the Warehouse routines. However, "most of our procedures are very very long winded and not easily read and not easily followed", particularly for "practical minded Storemen" who "didn't have any experience with procedures until [they] came here", or at least not formally. The procedures have become so prolific, as discussed in the in/formal chapter, that there is a belief that everything can be procedurised. This notion fails to recognise the *truces* that exist, devalues the *problem-solving* nature of many of the tasks, individual tacit knowledge and the *cognitive effort* needed to interpret the routines. It assumes that if people follow the routines and prescribed rules there will be no errors. However, although the routines are *collective* and the knowledge needed to make them work is distributed, the procedures are written by one person and carried out by individuals acting and thinking about them independently and so the obviation of errors can not occur due to unquestioningly following the procedures. It also fails to recognise the inconsistencies between the ways written rules often fail to inform actual practice (Cohen and Bacdayan 1994, p 566), the way rules always need to be supplemented by judgment in order to be applied (Becker 2005a, p 253) and the incompleteness of rules generally (Reynaud 2005, p 853). Such a view also neglects to acknowledge that for many of the staff in the Warehouse, heavily procedurised processes are not their preferred modus operandi. In some cases this means that the participants will fail to internalize the knowledge embedded in the performance script or procedure because such scripts are too detailed to be effectively executed or that they are incomprehensible to or unusable to their audience (Foray and Steinmueller 2003, p 305), this will be explored further in the complexity analysis later in this chapter.

### 5.7.16 Knowledge and the Information-Processing View in the Warehouse

At ActewAGL, the view of the tasks involved in the Warehouse is very much an information processing view (Nightingale 2003) where "it is all black and white" and "system driven", although the reality is a situation which involves *problem-solving* and individualist attitudes and *decision-making,* as discussed in the in/formal chapter. In the Warehouse where processes are seen to be lacking complexity, there is a tendency to try and procedurise everything, irrespective of complexities, as discussed. The rigidity of the accounting system and the reporting structures within ActewAGL contribute to this view. In this situation, rather than autonomous relations developing, the Warehouse operates under the auspice of a military / hierarchical model, despite the self-directed work teams.

This incongruity between the way the Warehouse is seen to operate and the way it actually operates reflects the observations made by a number of authors in their ethnographies of work (Suchman 1983; Orr 1996; Suchman 2000a). In practice the account of work practices are often anything but the blind following of procedures and despite the view that people are assumed to be completing tasks according (Suchman 1983; Brown and Duguid 1991) to *self actuating* procedures, in reality they utilise *problem-solving skills*, encounter unforeseen situations and re-interpret the 'rules' according to the situation. The writing of the procedures or creating a plan abstracts a harmony and a rationality that is imposed post event (Suchman 1987, p 52), and thus the procedures could be seen to reflect Bourdieu's (1977, p 79) *opus operatum* – that is the finished view which ignores the constantly changing conditions of the process itself (Brown and Duguid 1991, p 41). Whereas the reality faced by the Warehouse people, their *modus operandi* (Bourdieu 1977), actually includes other non-canonical practices

(Brown and Duguid 1991) such as the tasks having fuzzy front and back ends, the divergent requests of numerous actors, having to deal with various power plays and operating within a reporting framework and complex web of *inter-connected routines*. In contrast with the clarity of input signals and the assumed rationality of procedures, routines are a process not a clear set of steps. Following routines involves *cognitive processes* involving *patterns of action* and interaction being matched to the circumstances, they *economise on bounded cognition*.

In the Warehouse many of the processes are complicated, require a *cognitive effort* to understand and are very lengthy and it is a matter of several

> "things happening at the same time and to try and keep focused on all of them and not lose track of one of those 5 million steps you were meant to do and the 500 pieces of paper that were meant to be with it – to keep track sometimes gets a bit difficult".

### 5.7.17 Product Knowledge in the Warehouse

Procedures are codified and explicit but much of the *problem-solving nature* of the tasks in the Warehouse is associated with the incredible, tacitly held, product knowledge that the Storepeople develop. Product *knowledge* is so important that it is tied monetarily to one of the competencies the Storepeople have to meet. This formally includes knowledge of storage, characteristics and handling of materials, quality control, reporting damaged goods, knowing stock locations[62] and being able to identify items with some understanding of their use. Informally it includes remembering stock codes by heart, or remembering how much cable is on a drum or the location of a particular item.

[62] Kusterer (1978, p 96-8) also notes that warehouse workers know the locations of thousands of different stocked items without consulting the catalogues.

> "As an example, we will get customers come into us over the counter and they will say 'What do you call those things that we use with the stays?' A new staff member wouldn't know what they were talking about …but we know what they are talking about just by their description of what they say they are after and we can quite often say 'Is this the thing you are after?' and they will say 'Oh that is what it is called, what is the stock code for that' and we [are able to tell them], we just pick it up … with on the job training."

This is also picked up through "walking around and taking notice of what people are ordering. 'Receipts' is also good for that because you see the items as they come in." Formally, management

> "says you can look this up on the computer, but if someone comes in and asks for something that looks like this (makes a shape with his hands), you might have an idea but you can't look up (repeats the shape) on the computer."

Clearly the routines performed require *expert product knowledge*, and *embody knowledge,* usually tacit knowledge. As one informant acknowledged, "there are a lot of people in this organisation that might have a minor level job but they have a great deal of influence on how the system works and [a great deal] of product knowledge", that is, they and the knowledge they hold are important for carrying out organisational routines.

The product knowledge assists with dealing with the *uncertainties* presented by customers, so much so that this has become a routine in itself, in that the Warehouse staff do not know when trucks are coming in and then have to cope with various possible scenarios when the customers do come in, as shown in the complexity analysis in Appendix Two.

### 5.7.18 Inter-relations and Inter-linked Routines in the Warehouse

Warehouse processes are complicated by the *interlinked routines* of the customers themselves. As discussed in the in/formal chapter, the field crews *collectively* manipulate the system in the Warehouse, ignore the chastisement of the Storepeople to

not pick their own items and not record their whereabouts or the reason for their visit. When it was decided to log their visits the field crews acted *collectively* in not complying, writing down bogus names and reasons for being there, as discussed further in the in/formal chapter. The field crews also behave *collectively* in the way they use the Warehouse as a way to legitimately waste time.[63] Frequently they come in and sit around for some time or put in over-the-counter requests in a staggered fashion so that the Warehouse staff enter them, collect their items and then are forced to go through the whole time consuming process again because someone allegedly forgot an item. Some of the field staff come in two or three times per day or "go from Mitchell store to [the Fyshwick] store to the Greenway store" for items that could have been sourced from one, simply "because it looks like they are working and they are not". The Warehouse staff are aware of this but because of the *collective*, *historically* and culturally situated actions of the field crews the Warehouse staff have little power to stop this, as discussed in the power chapter. Even threats in response to some rudeness or other such as, "watch it mate or you'll go directly to the back of the line", had little effect with the response being, "like I care". This is indicative of both *truce* like arrangements of routines as well as the *collective nature of routines*.

### 5.7.19 Complexity in the Warehouse: An Analysis

In order to assess the routines in the Warehouse I conducted a process / task analysis which broke up some of the major routines, into the number of individual and linked steps in each task, as discussed in Chapter Two. In a similar way, Pentland (1995) used

[63] This is not to say that the field crews are the only ones that engage in such practices – they are not, indeed one of my colleagues half jokingly described another as 'Blisters', that is they "come out after the work is done". Such practices occur frequently in most workplaces and as I suggest in the in/formal chapter of this thesis, such discussion, banter and work avoidance often enhances the informal relations needed to ensure the effective running of the organisation.

Goffman's definition of 'moves' (Goffman 1981, p 24) as the basis for breaking down processes and their related or connected sequences of action.

Such sequential variety increases the necessity for *problem-solving* and shows that the associated routines are not carried out in a *self-actuating* manner but are actually *triggers* for *other interlinked routines* to occur. In the Warehouse, just as in Pentland's (1992; 1994) study of hot lines / technology-based help desks, the steps represent a minimum number for each process. If the process involves for example collecting multiple items, multiple types or lengths of cable or variations in the way the task can be accomplished then the processes become more complicated and there is a greater possibility of sequential variety (Pentland 2003). Further work could be done on sequential variety in processes, as some scholars are beginning to acknowledge (Becker 2005b). Below is an extract of the table showing the number of steps involved in some (but not all) of the major processes involved in Warehouse operations. The full table is shown in Appendix Two.

**Table 5.1 Process / Task Complexity Analysis**

| **Process** | **# Steps** | **Linked steps and processes** | **Links to other actors** | **Forms** | **Reference** | **Ethnographic Notes** See also Node 'Complicated' |
|---|---|---|---|---|---|---|
| Cable Movement | **37 (**NB This figure excludes the steps involved in CMRs which are also essential for a successful Cable movement) | CMRs, Transact Cable Movements, See also Log 8.6.P1 Receipts, Requisition Enter, Shipping, Project Issue, Project Returns | -Field crews<br>-Energy Networks<br>-Storepeople<br>-Shipper | Requisition, CMR | Log 8.6.P10 Cable Movement, Log 8.6.P10.W1 Cable Movement Flow chart | 430:3, Node - Cable[64] |
| CMR (Cable Movement Record) | **23 (**NB 23+37 for cable movement = **60)** | Cable Movement, Transact Cable Movements. See also Log 8.6.P1 Receipts, Requisition Enter, Shipping, Project Issue, Project Returns | -Field crews<br>-Energy Networks<br>-Storepeople<br>-Shipper | Requisition | Log 8.6.P10[65] Cable Movement, Log 8.6.P10.W1 Cable Movement Flow chart | 430:3, Node - Cable |
| Picking | 8 for picking +16Reqs + 8SIRs +7-8 for forecasted = **40** | See also Log 8.6.P10 Cable Movement, Log 8.6.P8 Transformers, Enter Req, Over counter Req, Issues, | - Field crews<br>- Energy Networks<br>- Shipper | Interim Pick slip, Requisitions | | 423:1, 434; 6[66] |

[64] Nodes refer to the Nvivo nodes / codes
[65] Codes such as Log 7.5P1 refer to the internal number given to procedures and work instructions in Logistics..
[66] Codes in the ethnographic notes column refer to the page and paragraph numbers of my ethnographic notes. Eg. 413:4 refers to page 413, paragraph 4

As can be seen above and in the expanded version in the Appendices, many of the routines enacted in the Warehouse involve numerous steps, are quite complicated and very convoluted, largely due to the variety in possible connections, *interlinkages* and variations in the tasks. Complex routines can no longer be *self-actuating* because they require interpretation of codified *knowledge*. People draw on their individual *knowledge* of the routines, the associated artifacts and the constraining or enabling circumstances to make decisions (Suchman 1987). These decisions may or may not be the same decision a colleague would make and thus further complications and variations arise. Further, virtually all the routines in the Warehouse have multiple steps. To illustrate this point, I will draw on the routine involved in successfully carrying out a cable movement.

Cable of various sizes is stored in the Warehouse and in the adjacent yard. The cable itself is usually marked at intervals with the meterage and these figures are used to assess how much cable remains on a cable drum. Depending on the size of the cable, the drums hold anywhere from 250 to 5000 metres, thus it is necessary to know how much is supposed to be on the drum in order to be able to calculate how much remains after a transaction. Field crews and TransACT employees come into the Warehouse and collect certain types of cable for particular jobs. Sometimes the cable, especially the smaller sizes, are cut to size by the Storepeople, however sometimes the customer takes the whole drum on their truck and returns what they do not use. When this happens they may use some cable on one job and some on another job. Due to the high monetary value of cable and each project having a different cost code, it is important to record the amount taken, the amount returned and the amounts used for each project. This is done manually on the paper-based CMRs (Cable Movement Records), with a copy given to the customer and the original stored in the ‘drums in the field folder’. The Shipper then enters the figures onto the system. When cable is returned, the hard copy of the CMR

needs to be found and amended (this may be in either be in the 'drums in the field folder', in the filing cabinet under 'completed CMRs' or for smaller cable in the filing cabinet for 'cable in the warehouse') and whatever is returned needs to be credited from the project it has been signed out to and debited from another project if two or more projects have used the same cable drum.

The aim of the cable routine, described above, is to have all the records matching the amount of cable on the numbered cable drums in order to successfully manage the inventory as well as meeting the accounting needs of the organisation. However, the process itself is very complicated. Simply to fill in the CMR, as can be seen in the table above, requires twenty three individual steps – assuming that the routine only involves one length of cable to one project. This increases dramatically if multiple projects are assigned cable. Given the twenty-three steps for completing the form and the multiple actors involved in the process, each CMR becomes increasingly complex and the opportunities for error increase accordingly. Yet, completing the CMR is only one of a series of *inter-linked routines*. In order to complete the process, the routine must incorporate the CMR routine and include the *interlinked* steps from the cable movement routine, a minimum of thirty-seven further individual steps. Thus the entire routine to complete a cable movement requires a minimum of sixty individual steps.

Breaking the process into smaller and smaller chunks makes the process appear to rely more on the information processing view of knowledge but in actuality, as in the process of modularisation the more complex and extensive the procedurisation efforts the more possibilities there are for unanticipated mismatches to occur which result in an overall lowering of performance (Ethiraj and Levinthal 2004), or produces a form of

*inertia*. Given bounded rationality / cognition (See Nelson and Winter 1982; Kaufman 1999; Loasby 1999; Foss 2001; Foss 2002) etc , where for example, people can only retain seven plus or minus two concepts in their head at once (Miller 1956, 1992) and can only conceptualise the effect of two causal loops from an action (Sterman 1994), there is a strong chance that errors will arise. Typically a routine acts to *economise on the cognitive efforts* people have to put in to achieve a given task, thus freeing up decision-making capacities (Becker 2005a, p 750) for other tasks. In the case of the cable movements, the procedures are so complex they require significant *active thought* by the participants, thus the complete process cannot be encapsulated in one routine. Instead it can be thought of as a bundle of routines, but in saying that, this bundle of routines increases the cognitive effort involved in completing the task. In this situation, the procedures in formalising the routines increase the cognitive effort involved and because the easily automated and complicated processes are manual, there is a lot of scope for mistakes, rework and fault.

### 5.7.20 Discrepancies in the Warehouse

Some people attribute the high rate of discrepancies to the informal attitudes of the participants to the procedures, however I believe that the discrepancies exist because of the complexity of the procedures, the number of *linkages between the routines* and the lack of what Tichy, Tushman and Fombrun (1979, p 514) note is pre-programmability of complex tasks. In order to assess the discrepancies, in the role of Shipper (who receives codified information from everyone in the team in the form of requisitions on a daily basis) I was able to record the discrepancies, who made the mistakes and the frequency of types of mistakes on a daily basis. From this I was able to conduct some basic statistical analysis, which confirmed that the number of discrepancies is quite

high, particularly for tasks that are relatively *repetitive* and which should be *self-actuating*, such as dating and signing requisitions or CMRs. This finding suggests a lack of attention to detail rather than an inability to complete the tasks. Combined with the process / task complexity analysis, discussed above, the discrepancy analysis confirmed that where task complexity is greater there is a higher number of mistakes. People in both Procurement and the Warehouse make mistakes but in Procurement the system largely catches these and they are fixed up with the help of colleagues. In the Warehouse, there are a number of discrepancies, running at an average of over 100 identified mistakes at any one time and any number of unidentified mistakes. My analysis revealed that all Storepeople make mistakes, these were spread across the board with most systems mistakes being on CMRs and most of the other mistakes being related to lack of attention to detail, thus the *processual* nature of the routines allowed parts of them to be conducted with *little conscious thought*. During the data collection period, there was only been one day where no mistakes were made. I personally tried very hard not to make mistake but I, like my colleagues, also made mistakes. Personal error rates of participants were on average between 12-18% of all requisitions passed onto the Shipper. The best performer (and that was not me) still made more than 5% of errors as a percentage of the overall shipments. I have argued the routines are not *self-actuating* but require conscious thought and this is true here, despite the 'lack of attention to detail' mistakes. Parts of the routines are *repetitive* and have elements of *self-actuation* within them, however when viewed as a whole of routine, the routines are not *self-actuating*. The front and back ends of the routines in the Warehouse require *problem-solving* skills to ensure that the tasks can be completed, conscious thought is needed to *inter-link the routines* and to *know-what* to do in a particular situation.

Whilst 75% of errors were due to a lack of attention to detail, I was additionally able to assign two other sorts of errors, being systems-based errors and errors related to lack of control of processes, including process complexity. Some mistakes I believe can be attributed to processes requiring input from multiple actors and thus the need to enact *truces*, as shown in the complexity / process analysis (see Appendix Two). Such routines may require forms to be sent or faxed to various people, including Energy Networks, the Team Leader etc, thus again creating a situation where a step or multiple steps could be missed. Most of the frequent mistakes are relatively minor; failure to include quantities, dates, signatures etc, and thus these often go unnoticed initially. That is until there is a problem and then the omission becomes significant, requiring further *problem-solving skills* and *conscious thought* to remedy the issue. This sits well with the theories on routines being *non-deliberative* where we are usually not aware of them as long as the routine runs smoothly but become aware of them when they do not (Becker 2003, p 9).

Discrepancies are a significant issue in the Warehouse, they are a focus of every team meeting, are the subject of an individual's arduous role and are a cause for reproach or praise, yet I wondered if maybe the discrepancy rates could not be improved without changing the processes of the Warehouse in their entirety. The numbers of errors, although they haven't gone down, haven't increased dramatically either. A number of informants felt that "the perception is [that the discrepancy rate] has gotten worse, probably because we are counting more regularly", but in reality "I think we have always had discrepancies, even before [we] started counting them".[67]

[67] Many of the discrepancy problems could be solved by the implementation of readily available warehousing technologies such as bar-coding, however there are significant cultural, financial and power issues preventing this from being a viable solution at this point in time. In the absence of such solutions,

## *5.8 Routines in the Literature*

The ethnographic descriptions above present routines in the context of ActewAGL Logistics Branch and through the use of italics show some of the characteristics and roles that routines serve in organisations. I have placed the ethnography before the analysis of the literature on routines for two reasons. Firstly, it shows how the theoretical construct of routines emerged for me as a researcher. Secondly, the literary device brings the ethnographic account into prominence and shows how ethnographic techniques can be used to successfully explicate routines. Becker notes it is "not possible [to understand routines] without being an insider to the group" (2003, p 14) as either an active participant in the routines or by having access to people prepared to share the historical reasons behind the original contexts. I was an insider and have demonstrated the theoretical construct of routines from within.

Although a "comprehensive, clear and explanatory powerful concept of routines" (Becker 2005a, p 257) is still difficult to come by, Becker (2003; 2004) derived a number of characteristics and roles or effects of routines in his comprehensive review of all of the major literature on routines. I take Becker's work to be a thorough analysis of the literature and use that as a current basis from which to explore the literature on routines. The following section highlights these characteristics and roles.

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the discrepancies continue to be an issue but one that can only be tweaked around the edges not explicitly solved.

## *5.9 Characteristics of Routines*

The following section discusses the seven characteristics of routines, as they are categorised by Becker (2004) in his review and analysis of the literature on routines. Becker notes the characteristics of routines as being that they are 1) repetitive or recurring, 2) collective patterns of interaction, 3) often viewed as mindless or self-actuating but may equally validly be viewed as effortful accomplishments, 4) processual 5) context dependent, 6) path dependent and 7) triggers for other routines.

### 5.9.1 Routines are Repetitive

Routines must be repeatable for them to be routines (Becker 2005a, p 255). Without repetition the concept becomes void. “In fact, one would be hard pressed to call something happening once a routine” (Becker 2004, p 646). Empirical studies have supported this notion (Pentland 1992; Pentland and Rueter 1994; Cohen et al. 1996; Knott and McKelvey 1999).

### 5.9.2 Routines are Collective

Routines are collective (Nelson and Winter 1982; Cohen and Bacdayan 1994; Cohendet and Llerena 2003; Hodgson and Knudsen 2004), in that they involve multiple actors (Feldman and Pentland 2003) who are linked by their interactions. The involvement of multiple actors means that the knowledge drawn on is distributed (Cohen et al. 1996; Tsoukas 1996). The total knowledge-base is more than the sum of the parts, that is, when knowledge is combined, the results are more than the individual knowledge could ever be. No individual could know all everything about an organisation or an organisational routine but when that knowledge is combined with that of their

colleagues the knowledge becomes more complete. Collectivity also ensures the more effective operation of communities, particularly in relation to knowledge sharing. Thus the "community member feeds [the community] with his / her experience and, in turn, relies on the knowledge capitalised by the community to carry out his / her activity" (Cohendet and Llerena 2003, p 282).

Empirical studies concentrating on the collective nature of routines (Weick 1990; Cohen and Bacdayan 1994; Pentland and Rueter 1994) have found that when people act collectively the outcomes are superior with more possible variations than if people act individually. Indeed Weick (1990) noted that routines are disrupted when participants act individually rather than collectively.

### 5.9.3 Routines as Mindless vs. Effortful Accomplishments

Routines can be seen to be non-deliberative and self-actuating, that is, they are executed in a virtually automatic manner with individuals following them without needing to devote conscious or explicit attention to them (Becker 2004). The premise is that individuals carry out routines without devoting conscious attention to the way that they are enacted. The routines are carried out without articulation but through knowledge held in the minds of individuals and so they usually run smoothly. They are largely based on tacit knowledge.

Such a premise is becoming increasingly controversial, with the theory being divided between those who believe that routines are characterised by 'mindlessness' (Ashforth & Fried 1988 cited in Becker 2004, p 648) and those who see them as 'effortful

accomplishments' (Pentland and Rueter 1994, p 488). The differentiation appears to be between conceptual papers in the case of the former and empirical papers in the case of the latter (Becker 2004, p 648). Increasingly empirical papers assert that routines are not mindless but can be changed and do require participants to engage in active thought processes in carrying them out (Pentland and Rueter 1994; Pentland 1995; Feldman 2000; 2003; Feldman and Pentland 2003). It seems that the difference not only relates to empirical studies but also is focused in particular on studies utilising participant observation. Participant observation allows the researcher to be able to see what goes on within a routine,[68] that is, *how* it is enacted, as opposed to the more helicopter view of studies that do not involve participant observation and so see only the *task to be accomplished* instead of how it is accomplished.[69] Certainly the routines I dealt with, from the perspective of a full participant, did not appear to be self-actuating or non-deliberative, but required conscious thought and well developed problem-solving skills. They were "not mindless but effortful accomplishments" (Feldman 2000, p 613). From external to the routine they appear to be non-deliberative but from *within* the routine (or when one observes the routines directly), they are often not self-actuating in that participants exercise problem-solving skills in determining *how* to accomplish the task.

### 5.9.4 Routines are Processual

Routines are related to organisational performance, which is produced by process, therefore routines are processual in nature (Becker 2004). Analysing the processes involved in routines provides understandings of performance and competence in the

[68] Participant observers can see what goes on within a routine even when they are observing participants as Feldman and Pentland were. Although my findings reflect what they found, my study takes this a step further by exploring routines from the perspective of being involved in the routines, rather than observing them from an administrative or observational perspective.
[69] Looking at how tasks are accomplished has been neglected in much of the literature, as noted by (Barley and Kunda 2001). The routines literature is beginning to address this dearth (Becker 2005b, p 819).

organisation (Becker 2003, p 9). The literature identifying the processual nature of routines addresses issues of maintenance, speed of execution and decay of routines, reaction time, time lags and delays, staff turnover, frequency of shifting from one routine or set of routines, environmental change, quality and volatility of information and decision-making environments (Becker 2003, p 9; Becker 2004, p 649). Due to the processual nature of routines they are useful for explaining change in organisations because routines enable us to detect novelty and make connections between the organising processes and the organisation itself (Becker 2004, p 649). Such processes and the relationship to change have been observed in empirical work on routines (Weick 1990; Cohen and Bacdayan 1994).

### 5.9.5 Routines are Context Dependent

Context-dependence, embeddedness and specificity are important for routines (Cohen et al. 1996). That is, "routines are embedded in an organisation and its structures, and are specific to the context" (Becker 2004, p 651) in which they reside. This embeddedness and the interlinkages of routines allows the routine to be applied in a particular context (Becker 2004). Context matters because routines can only exist within a given context (Cohendet and Llerena 2003, p 275) and they lead to the differentiation between routines in different situations and allows for the "formation and development of routines as a community-dependent", social process (Cohendet and Llerena 2003, p 273).

Where routines are removed from their context and applied to another unrelated context, transferability will be limited, and the routine itself may well become meaningless. Thus the possibility of knowledge and routine transfer is greatest within the relatively

homogonous environment of the firm (Kogut and Zander 1992) and routines are only transferable to a different environment to a limited degree, especially as they are bound by procedural (not declarative) knowledge (Cohen and Bacdayan 1994).

The context dependence of routines can be found in the specificity of environmental factors, the historical and local situation. “Historical specificity derives from the fact that whatever happens does so at a certain point in time”(Becker 2004, p 651), framed according to related historical factors. Local specificities are the outcomes of local learning processes and allow for the enactment of routines in a locally specific context.

### 5.9.6 Routines are Path Dependent

Just as routines are context-dependent, they are also path dependent and are shaped by history (Nelson and Winter 1982; Levitt and March 1988), being built on the past and developing according to where they have come from (Becker 2003, p 14; Becker 2004, p 653). That is, their previous state provides incremental feedback about outcomes and provides the basis for future iterations of the routines that develop (Levitt and March 1988; Cohen et al. 1996). The context in which the routine sits allows it to be enacted through the application of specific rules, which only apply if the given context is the same. Where the context is different the sequences of action that constitute a routine will not necessarily be applied by the participants in the same way. Thus elements of interpretation and judgment come into routines because participants are able to apply the knowledge that they have in order to be able to determine what routines to perform in a particular situation.

The historical path dependent nature of routines means that in order to understand the routines enculturation and memory of the historical processes are required (Becker 2003, p 14). This means that without knowledge of the reasons for taking a certain historical path, it is almost impossible to reconstruct the situation and apply solutions to the problems of the original situation (Becker 2004, p 653). Historical path dependency has implications for research into routines, and these are best addressed through participant observation or at least having insights into the historical milieus of the situation.

### 5.9.7 Routines are Triggers

Routines are triggered by and may trigger other routines, including problem-solving or the need to engage in problem-solving. The interlinked nature of the routines and the way a routine may trigger another requires that the whole ensemble is present in order for the routine to be applied to a situation.

This interconnection allows organisations to react to interruptions or negative feedback in the routines (Becker 2003, p 23), to seek alternative routines from external cues, or to react to actor-related triggers (Becker 2004, p 653). The triggering effect of routines also allows participants to engage in problem-solving and deliberation to determine *how* the overall task will be accomplished when there are alternatives. These connections allow sequences of actions to be regarded as patterns of behavior thus explaining the routine nature of some apparently non-routine tasks like attending to customer needs on a help desk (Pentland and Rueter 1994; Pentland 1997) or doing “detective work” on non-standard issues that arise.

## *5.10 Roles and Effects of Routines*

In addition to routines possessing a number of characteristics, Becker (2004) also summarises routines as being important in that they have a number of effects in organisations. These include the ability to co-ordinate and control, provide truce, economise on scarce resources including cognitive resources, reduce uncertainty, create stability and embody knowledge. These will be discussed in the following section.

### 5.10.1 Routines Co-ordinate and Control

The first of these roles or effects is that of co-ordination and control. Routinisation means that tasks can be performed smoothly – this is evidenced when the routines are interrupted and co-ordination of the tasks breaks down. Routines co-ordinate in a number of ways including by giving regularity, unity and systems to group practices, by making simultaneous activities consistent, by providing decision-making knowledge available to actors and by providing instructions in the form of programs (Becker 2004, p 654). Becker notes that routines are more efficient than contracts as a co-ordinating device (2004, p 655) but notes the way co-ordination could lead to control (Cyert and March 1963). Informal structures ensure the smooth operation of organisations, as discussed in the in/formal chapter and are important because they are related to the co-ordinating role that routines play in the operations of the organisation. These are not immediately obvious until they fail in their co-ordinating role or that role is interrupted.

Empirical studies have shown that routines are up to twelve times more effective in co-ordinating and controlling behaviour than residual claims (or perfect incentive alignments) (Knott and McKelvey 1999, p 377).

### 5.10.2 Routines Provide Truce

Nelson and Winter (1982) also note several ways in which routines ensure co-ordination: "they embody truce, provide instructions in the form of programs, and contribute to order by establishing zones of indifference" (Barnard 1968 [1938]; Becker 2003, p 15). That is, routines govern both cognitive aspects of organisational participants and also motivational aspects (Nelson and Winter 1982, p 107; Becker et al. 2005, p 781-2) where truce between players provides a theatre for action, serves to explain social relationships and political aspects of the operation of organisations. A truce like arrangement ensures the smooth functioning of the organisation in that participants are rarely surprised by the actions of other organisational members.

Becker (2004, p 655-6) sees the notion of truce as a useful lens through which to recognise and appreciate the political and motivational arrangements that underlie the work and the stability of an organisation. It also means that actors do not have to explain the different social relationships that allow the routines to be enacted. This notion of truce links with the notion of power as it is often indicative of politically governed situations, as shown in the power chapter.

### 5.10.3 Routines Economise on Resources

"Routines economise on limited information processing and decision-making capacity of agents"(Becker 2004, p 656-7). Routines help participants cope with not being able to know all alternatives or all the consequences of any one alternative (March and Simon 1958), and the inability of organisations attend to all of their goals simultaneously (Cyert and March 1963). This is done through two means. Firstly,

learned habits and routines[70] become more automatic or almost semi-conscious, thus freeing up mental resources making them available for more complex decision-making. Secondly, routines focus attention. "They guide search and reduce the space of events that managers should scan in order to avoid bad surprises and take advantage of good ones" (Becker 2003, p 18).

### 5.10.4 Routines Reduce Uncertainty

The process of economising on metal resources enables actors to be better able to cope with uncertainty and to act even when there are many alternatives to be considered, thus creating an environment where increased predictability is ensured (Becker 2003). Routines help actors deal with uncertainty by fixing parameters and by freeing up cognitive resources (Becker 2004, p 658), as proven by Becker and Knudsen (2005a) in empirical tests. In this situation formal institutions such as standard operating procedures (Cyert and March 1963), combined with informal institutions like those making up 'truce' (Nelson and Winter 1982) or group norms establish certain parameters and expectations for the members of the firm and so increase predictability (Becker 2003, p 19). This cusp between the informal truce and formal procedures, as described above, provides an example of the formal being enacted informally, as described in the in/formal chapter. It is through this process that uncertainty is reduced, participants are able to pick a course of action (Becker 2004, p 657) and the organisation is able to adopt strategies that most suit the strategic operation of the business.

[70] Habits are usually associated with individuals, whereas routines belong to groups (Hodgson and Knudsen 2004).

### 5.10.5 Routines Provide Stability

Routines have been noted to provide stability in that they sometimes continue to exist even in the face of negative performance, lead to inertia or recur without much change. This has been shown empirically as well as theoretically. For instance Cohen and Bacdayan's (1994) card game study empirically showed the stability routines provide, but also the inertia associated with the procedural knowledge of participants.[71] Routines can lead to inertia or, in other words, they provide stability which produces the effect of predictability and stability because routines are repeated with little change (Cyert and March 1963; Nelson and Winter 1982).

Technology and the 'truce' also create inertia as do connections that organisational routines make between people (Feldman and Rafaeli 2002). Inertia (or some authors prefer to couple this characteristic with that of stability) (Langlois 1992; Becker 2003) both constrains and enables organisations and provides direction to their recurring activities (Knott and McKelvey 1999).

There are two schools of thought as to why routines provide stability. Firstly, when results continue to be satisfactory there is no need to expend cognitive effort in the search for alternatives – why fix something that is not broken. The second reason is associated with the cost of making changes (Nelson and Winter 2002, p 30), in terms of the need to identify new participants, to adopt new understandings and to deal with underlying psychological and physical contracts (Becker 2004, p 659).

[71] Cohen and Bacdayan (1994) conducted empirical work into routines using a card game as the basis. The study showed, amongst other things, that participants tended to repeat similar sequences of action that they learnt through being penalised for previously slow decisions, even when such decisions were not as optimal as the alternatives in terms of the outcomes of the game. This study confirms that routines are often stable but also exist in a state of inertia, doing so sometimes even in the face of negative feedback.

Stable routines provide a baseline against which to measure change, compare and learn, to receive feedback and to co-ordinate through predictability (Becker 2004, p 659). Sometimes the reason that routines are stable is because of inertia where routines persist even in light of negative feedback, or feedback is ignored.

As routines are repeated with little change (Cyert and March 1963; Nelson and Winter 1982), they produce the effect of predictability and stability, allowing some scholars to present them as being rigid and unchanging. Exceptions to the notion of routines being unchanging are found when crises occur, or when routines display a dependence on other routines or parts of routines, which are not identical to the routine being enacted or when change is endogenous to the routines themselves. Feldman & Rafaeli noted that "organisational routines enable both stability and change" (Feldman 2000, p 612-3; Feldman and Rafaeli 2002, p 327) (emphasis added) and indeed are an important part of organisational flexibility.

Recently a number of studies, particularly empirical studies, have shown that routines can incorporate change (Feldman and Rafaeli 2002) and do change given changed circumstances, or participants responding to the outcomes of a previous iteration of a routine (Feldman 2000). Significantly the work of Feldman (2000; 2003) and Pentland (1992; Pentland and Rueter 1994) show this from an ethnographic perspective. My own findings support this premise and show that routines do change, particularly in relation to *how* they are enacted.

### 5.10.6 Routines Embody Knowledge

Routines store knowledge. Nelson and Winter (1982) refer to this as organisational memory, a term which has been adopted by others and used in relation to routines and organisation learning (Levitt and March 1988; Cohen and Bacdayan 1994; Cohen et al. 1996; Moorman and Miner 1998), particularly from the point of view that the routines reflect organisational learning over time. Such learning guides future behaviours of organisational participants. "The routinisation of activity in an organisation constitutes the most important form of the storage of the organisation's specific operational knowledge" (Nelson and Winter 1982, p 99). That is, routines are what enable the organisation to access alternative solutions to particular organisational problems (Levitt and March 1988; Feldman 2000), to get the work done and know what work will be rewarded (Kaplan and Henderson 2005). That these alternative responses and knowledge about what work will be rewarded are usually not codified supports the tenet that routines embody tacit knowledge (Becker 2004, p 660), although routines also embody other types of knowledge including, individual knowledge, practical, collective, procedural and declarative knowledge. Although many questions still remain about the relationship between routines and the productive knowledge of the firm and how it is stored, applied, decays and changes – the concept of routines, as Becker (2003; 2004) notes does in fact provide a useful way of analysing how distributed knowledge is integrated in action.

## *5.11 Characteristics and Roles of Routines Revisited: Contributions from This Research*

In addressing the secondary level research question of 'how valid are the characteristics and roles of routines from the perspective of a full participant in those routines', I confirm that for the most part they define routines. I also contribute an additional

characteristic of routines in that they are problem solving. In addition I confirm some disputed aspects of routines including that routines are not self-actuating and that they do change.

### 5.11.1 Routines are Not Self-actuating

Having empirically tested the theory of routines from the perspective of a full participant, this research basically supports the theoretical findings, however it also contributes some differences. These include, confirming the work of recent authors asserting that routines are not self-actuating, and that they do change, and adding problem-solving as a characteristic of routines.

This research is aligned with the work of authors empirically testing routines in the assertion that routines are not self-actuating. The routines that I observed, for the most part, required the participants to exercise conscious thought and problem-solving skills. From a theoretical / outside perspective, routines associated with task accomplishment appear to be self-actuating but from *within*, people are problem-solving by nature and thus the routines can be seen to incorporate problem-solving, conscious thought and individual and collective improvisation.[72] From external to the situation, the task accomplishment appears to be self-actuating but from within one is able to observe that it is not self-actuating in terms of *how* the task is accomplished. This finding is supported in my observations about change, that the task accomplishment does not appear to change but from *within* the task it becomes apparent that *how* the task is accomplished changes.

[72] The improvisatory nature of routines is evidenced in the work of various authors including Orlikowski (2000), Weick and Roberts (1993), Feldman (2000) and Suchman (1983), as discussed in (Pentland and Feldman 2005, p 796).

### 5.11.2 Routines Involve Problem-Solving

I found that problem-solving is an important aspect of routines[73], closely associated with them not being self-actuating. Although this area has been little explored, it seems to be, at least theoretically important. Cohen and Dosi note that "trying to bridge the evidence from cognitive psychology with organisational routines involves an explicit account of the double nature of routines, both as problem-solving action patterns and as mechanisms of governance and control" (Cohen and Dosi in Cohen et al. 1996, p 670). That is, they theoretically recognise the importance of problem-solving in routines – just as I have practically found in my field site.

The importance of problem-solving in routines and the diminishing effect this has on self-actuation of routines is nevertheless dependent on grain size. In most cases "organisational performance involves a mixture of such 'automatic' or 'tacit' elements together with a certain amount of 'decision-making' or 'problem-solving' that is much more deliberative and self-aware in its character" (Cohen et al. 1996, p 667). However, if the 'grain size' is small enough, such as in the case of complete automation, then problem-solving is no longer necessary and the routines themselves do indeed display characteristics of being self-actuating. Thus where a routine is small and not very complex it is more likely to require limited conscious thought compared to a situation involving more complexity, actors, steps or potential problems. In the Warehouse, where procedural complexity increases, the routines not only become interlinked to others, so moving to a more complex classification of routines, but also require problem-solving abilities. Similarly, in Procurement where there are a number of ways

[73] Routines are acknowledged in the literature as being "there to solve problems, for example, making better and cheaper models of cars, discovering new chemical compounds, exploiting new market niches etc" (Dosi and Malerba 1996, p 7), I propose that the people enacting the routines have to have problem-solving skills in order to make the routines themselves work.

things can be done and a number of possible solutions. "Problem-solving [itself] is a path dependent process – one that may evoke different knowledge elements and require different kinds of intentional actions of agents"(Foss and Foss 2002, p 20).

### 5.11.3 Routines Change

The literature on routines acknowledges the ability of routines to change but as Feldman notes "the preponderance of attention to organizational routines has focused on them as stable and unchanging" (Feldman 2000, p 612) or as changing slowly such as in the mutation of genes (Nelson and Winter 1982, p 14) or through the process of improvisation (Orlikowski 1996; Moorman and Miner 1998). Yet routines are "continuously emerging systems with internal structures and dynamics" (Pentland and Feldman 2005, p 794); they do change, through the process of organisational learning (Levitt and March 1988; Cohen and Bacdayan 1994; Feldman 2000), different competitive situations that may arise (Moorman and Miner 1998, p 705) and through participants seeking more effective means of achieving some task. Such changes are usually drawn from an organisational search for alternatives and are implemented based on a decision that the change will provide the best solution (Cohendet and Llerena 2003).

My findings support the recent empirical work that suggests that routines are not necessarily stable but can change and that in many cases they are changed from *within* by participants (Pentland 1992; Feldman 2000; Feldman 2003). This is important from the perspective of the generalisability of the case. ActewAGL is a utility company, and

as such utilities are often stable industries, however even in stable industries change from the participants, within the organisation, is prevalent in organisational routines.[74]

## *5.12 Routines from an Ethnographic Perspective*

Most of the literature uses routines to define and explain the existence, performance and functions of the organisation from the meso viewpoint. As such the routines are the base-point from which to glean an understanding of an industry, a system or a complex arrangement of many organisations, sometimes with a focus on one organisation to make assumptions about routines as a body of literature.

I am contributing an analysis of routines viewed from *inside* the organisation and from *within* the routines themselves. I use the routines themselves as a focal lens through which to view the operations of an electricity, gas, and water utility. Routines are, as already noted, observable in character, thus participant observation is the most suitable method for undertaking this kind of analysis. However, as already noted, this methodology has not been widely embraced in the study of routines due to its time consuming and intensive nature and because most of the researchers in this field are not familiar with the intricacies of the method.

## *5.13 The Usefulness of Ethnography of Knowledge on Routines*

Routines are a knowledge-based concept and this is clearly evident in how useful the Ethnography of Knowledge is in illuminating routines from the perspective of a

[74] As discussed in Chapter Nine, further work could be done looking at routines in dynamic and changing industries, particularly addressing the contradiction of routines being both the focus of the stable and where entrepreneurship is launched from.

participant and also in allowing us to abstract to the wider construct of routines. In addressing the research questions of 'does the lens of knowledge on an ethnography help to deepen the understanding of specific aspects of the social setting' and 'if helpful, how useful is the Ethnography of Knowledge in providing an understanding of aspects of the social setting such as routines', the following section will summarise some of the ways the Ethnography of Knowledge allowed me to gain insights into aspects of ActewAGL. It includes the way knowledge impacts on routines, problem-solving, informal interactions involved in routines, some of the associated truces and the differences between knowledge in practice and the information processing view of knowledge in theory in Logistics. The section will conclude with a discussion of how the Ethnography of Knowledge can be abstracted to the constructs of routines in the social construction of reality.

Participants control their environments by accessing knowledge residing in routines and using that knowledge to maintain the routines. Routines cannot function without knowledge because individual and organisational knowledge both embody and keep routines going. The Ethnography of Knowledge allowed me to see that knowledge-in-action and to realise that functional routines require more than the knowledge of the routines for their operation. They also require expert knowledge, knowledge of context and path dependency as well as understandings of the intricacies of interactions with others.

Through the Ethnography of Knowledge I was able to identify the importance of problem-solving in routines. The skills involved in problem-solving are tacit and cannot easily be codified, but these skills are integral to the functioning of Logistics. Even

simple routines are complex with a great deal of possible sequential variety (Pentland 2003) and the need to constantly assess the routine and deal with little inconsistencies and anomalies which arise. Incongruities between routines from the external perspective and the internal problem-solving reality are directly observable through this methodology.

Similarly the Ethnography of Knowledge enabled me to see and assign knowledge-based understandings of the informal interactions, norms and behaviours that keep the routines going. It allowed observation of the internal social networks and the reliance on distributed or collective knowledge, as discussed further in the in/formal chapter.

An Ethnographic perspective allowed me to see that participants are proactive and can change and improve their work performance and environments in relation to the routines. At a micro level this methodology enabled me to identify and track the changes to routines from within.

With regard to the question of how useful the Ethnography of Knowledge is, although the Ethnography of Knowledge allows an understanding of many aspects of routines, it fails to provide an understanding of some aspects such as truce. Such aspects are difficult to see because of the several possible levels of observation (Becker et al. 2005, p 780). Interactions with others require a form of tacitly understood truce between the actors in order to achieve desired outcomes. Truce is related to power in that they represent both political, motivational and governance aspects of behaviour, as discussed further in the power chapter. The concept of truce is difficult to explain using the Ethnography of Knowledge because of observability issues stemming from being

unable to observe all interactions or to have an understanding of historical actions that may result in truces.

The Ethnography of Knowledge illuminates knowledge itself in Logistics, showing for example, the clear difference between the practice-orientated cognitive view of knowledge and the theoretical information processing view of knowledge. In Logistics the social reality is that people in-practice use pattern matching or the cognitive view of knowledge to provide solutions rather than rely on the rational and linear procedures, which assume the information processing view of knowledge. The Ethnography of Knowledge shows the fallacy of assuming that routines only require tacit and know-how knowledge and that people are always rational. In reality routines embody many different types of knowledge and through the Ethnography of Knowledge with the different knowledge taxonomies as a lens it is possible to identify these other knowledge types and their essentialness in the enactment of routines.

Routines are a knowledge-based construct which uses tacit and explicit knowledge and a social constructionist framework as part of the rationale and thus, as expected, when using the Ethnography of Knowledge as a means of abstracting understanding for the construct, these and other forms of knowledge are clearly evident. Routines are heavily dependent upon know-how, which revolves around individually held and collectively shared expert knowledge formed over an historical time period. The knowledge is often explicit but not necessarily codified and relies upon interpersonal learning. Knowledge is embedded in routines and routines theory is built on the assumptions of tacit knowledge, bounded cognition and collectivity (social construction logic). The Ethnography of Knowledge is particularly useful in understanding the construct of

routines because it is based on similar assumptions and produces the same sort of results as routines theory. Like routines theory, the Ethnography of Knowledge allows us to see that many types of knowledge are necessary and that the rational information processing views of knowledge are inadequate when looking at routines. It is also necessary to incorporate tacit knowledge and collective dynamics resulting from a social constructionist view of the social setting and to look at expert knowledge and how it is gained – otherwise improvements are likely to be accidental.

The Ethnography of Knowledge therefore has practical implications for understanding how knowledge (through being embedded in routines) allows things to get done in organisations and how that knowledge is transferred and becomes part of the underlying assumptions of the organisation. The core of these practical implications is that in my experience routines are real and are how things get done in organisations.[75] The management of routines is something that needs to be explored further.

## *5.14 Conclusion*

This chapter ethnographically explores routines from within and identifies where my research supports the theory and where it contributes additional areas for future exploration. It shows that in support of Feldman, 1) routines do change and that they often do so without significant changes in circumstances and often through the initiatives of individuals, 2) that problem-solving is common in routines and 3) they are often not self-actuating. These propositions have been possible through differentiating

[75] Routines are not programs; I see them as being socially constructed micro institutions, influenced by the individuals involved, and allowing organisations to achieve things with little overt attention. The implications of this debate go beyond the scope of this thesis.

between routines consisting of an accomplishable task and *how* a particular task is accomplished.

In the chapter I have tested and confirmed some theory and contributed an additional characteristic to routines theory, whilst providing an overview of some of the routines in the Logistics Branch of ActewAGL. I have shown that changes often occur to how the tasks are accomplished, that is they occur within a process. I have contributed problem-solving as a characteristic of routines in addition to the often-described characteristics and roles of routines. I have shown that at ActewAGL the routines are only self-actuating in terms of the task accomplishment and that like change in routines, problem-solving is possible in routines when they are viewed from the perspective of how the task is accomplished. I have also discussed the differences between codified procedures embodying an information processing view of knowledge compared to routines, which embody tacit cognitive knowledge. In this discussion I show that in relation to ActewAGL there are some significant differences between procedures and routines, especially where task complexity increases or links to other routines.

The routines at ActewAGL, as in any organisation, allow the organisation to do what it does. As will be shown in the following in/formal chapter and the rest of the data chapters, routines are both informally and formally held and enacted. They reflect power and can both change and embrace organisational change. As such they are an important part of the study of organisations and will continue to be so, both in terms of the existing and extensive body of literature in the field and in terms of additional lenses and methodologies, such as an ethnographical approach, which we can use to study them.

# 6 Chapter 6 – Informal / Formal

## *6.1 Introduction*

ActewAGL is largely driven and operates informally. Like all organisations it is "'formal' in the sense of having explicit tasks to accomplish and 'informal' in the sense of the way members continually negotiate with one another in the interpretation and carrying out of such tasks" (Bate 1997, p 9 web version). Yet, I propose that it is where the formal and the informal meet that most of the actual functioning of the organisation occurs and how things get done. That is where the formal is enacted informally through characteristics, processes, networks and choices or the informal is endorsed by formal organisational structures, processes, reporting, events and /or institutions.

This (and the other chapters) addresses how work gets done in ActewAGL, specifically from the point of view of the in/formal. It focuses on how work tasks are accomplished rather than what tasks are accomplished (Becker 2005b, p 819). This aspect of organisations "has been strangely neglected in the economics and business literature" (Becker 2005b, p 819). This chapter proposes that at ActewAGL whilst informal practices, processes, events, interactions, modes of behaviour and events are dominant, most of the work gets done through a combination of the informal and the formal and that the two are mutually interdependent.

Business organisations consist of numerous very formal functions, operations, legal contracts, positions of authority, processes and procedures but as Hodgson notes, additionally "informal relations, involving cultural and moral norms, established [and flexible] routines [as discussed in the routines chapter], a degree of trust and so on, are also vital to the integrity of the firm" (1998, p 190). The organisational literature

recognises the importance of informal networks and indeed notes the necessity of them for the operation of the formal organisation (Barnard 1968 [1938], p 120,224; Reif et al. 1973); they are the glue that holds the organisation together and keeps it functioning. In this chapter I differentiate from much of the literature on the in/formal in organisations in that I explore informality and formality not only as represented by social relations but as ways of getting things done; something that often involves both the informal and the formal in parallel.

In this chapter I will explore informality and formality at ActewAGL. This chapter contributes a structured exploration of informal and formal in organisations from the perspective of a three-mode model. The model explores 1) the existence of formal structures in the organisation including the legal framework, policies and procedures, 2) the formal structures that over time are enacted through the informal, and visa versa, and finally 3) the informal structures of the organisation. This chapter and the model particularly address the blurring between informal and formal, from an ethnographic perspective.

This and each of the other data chapters explores the findings relating to a high profile code derived from the ethnographic data and explores it from the perspective of the Ethnography of Knowledge, develops the inter-linkages between the themes within the context of ActewAGL and discusses the literature associated with that particular theme. In this chapter I will explore the literature at the beginning of the chapter, rather than incorporate it throughout. I do this for two reasons. Firstly, although there is some literature that discusses informality and formality in organisations, most of this literature discusses informal social relations and assumes that where strong informal social

relations exist that the organisation is informal. I add to this literature by showing that in ActewAGL informal social relations are only one aspect of the informal and that whilst much work gets done through the informal, the organisation functions on a combination of the formal and the informal. The second reason for the literary device of looking at the literature at the beginning of the chapter, as opposed to how it is treated in the other data chapters, is that I am contributing a framework for interpreting the way the formal is enacted informally and the informal supported by the formal. There is little literature specifically explicating informality and formality from the point of view of how things get done in organisations[76] as noted by various authors (Barley and Kunda 2001; Becker 2005b) and this is my specific focus. I will then ethnographically explore the relationships between the formal organisation and the informal in ActewAGL.

## *6.2 Definitions*

The words informal and formal are often used in literature in a manner that assumes an understanding infrequently explored. Atkinson (1982) describes this dichotomous lack of exploration and yet common usage as being a "members analytic distinction. That is, it is one which can perfectly readily be made and used by any competent speaker of English, quite independently of whether or not he or she happens to have had a training in or knowledge of professional sociological theorizing"(, p 87). As speakers of the English language, we all use the terms *informal* and *formal* and have an intrinsic understanding of situations and language that constitute varying degrees of formality. In

[76] There is quite a lot of literature that discusses informality and formality as communicative codes, as elements of a social property and as interpersonal relations, these will be discussed later in this chapter. Much of the literature discussing the in/formal focuses on and assumes that informal social relations result in the organisation's operations being informal. My focus expands this literature by viewing social relations as only one part of the informal / formal environment and by specifically exploring how work gets done, particularly from the proposition that informal social relations does not necessarily mean that work gets done informally or vice versa. Indeed, the formal and the informal are interdependent and often combine in intriguing ways to allow organisations to operate.

the literature the terms are frequently used loosely without explanation, often presupposing a relatively polarised view of the two, with assumptions about what the study of the terms incorporates.

The interpretation of the terms formal and informal in the literature[77] often leads to a propensity to assume that in studying the informal that one is studying only informal social relations, and not a wider view of in/formal. I approach this study from a slightly different angle. In getting things done, an organisation's social relations (informal and formal) constitute only one of the many factors. Also included are processes, events, structures, client and community relations, procedures, artifacts, reporting and socially held understandings. This thesis shows that just because interactions are informal does not necessarily mean that the way the work gets done in informal, indeed often this occurs because of a combination of the formal and the informal – the space somewhere between the formal and the informal. Both are needed to get things done. The informal social relations, structures, processes, events and so forth support and are supported by the formal and vice versa. This means that sometimes, formal things get done informally, informal things result in formal outcomes and this meeting of the two is not always predictable or predicated just on social relations.

For the purpose of this discussion *informal* and its associated *informality* is defined as *those interactions, artifacts and processes which are not specifically endorsed or directed by the procedures and processes of the organisation* (in this case neither by Logistics nor by ActewAGL) *but which are characterised by a degree of spontaneity,*

[77] This is not to say that definitions of formal and informal do not exist (indeed definitions are included in the following paragraphs), simply that people have an intrinsic understanding of the terms and thus the literature often doesn't find it necessary to explain them. I suggest that this lack of explanation often leads to an assumption that the 'informal' is referring to the social relations, however my interpretation includes a number of other elements of organisational operations, as discussed.

*casualness and intimacy and which generally lack predictability.* That is, the interactions which are either unplanned (Lievrouw and Finn 1996, p 29), spontaneous or flexible (Dalton 1959, p 219) or where people *choose* with whom they interact, how they will behave, from whom they seek information and when they will seek it.

In contrast *formality* or the *formal* are *those processes, interactions, events and artifacts (including documents) that are endorsed by the organisation, often in written or codified form* (Lievrouw and Finn 1996). These are characterised by structured and predictable processes and outcomes, and a corresponding lack of spontaneity, casualness and familiarity – usually coupled with a lack of individual choice.

The *Informal Organisation* has become the stage for explorations of numerous concepts including group cohesion, communication, social status, work group roles, relationships, norms, values and beliefs (Reif et al. 1973). However for the purpose of this paper, I draw on the work of Wang and Ahmed who represent the *informal organisation* as "*interpersonal, cross-functional and inter-organizational interaction[s] that [are] not explicitly demonstrated in the organization chart"* (2003, p 52). Taking this further, I would define the informal organisation incorporating interactions and the spontaneous, casual processes and modes of behaviour, both psychological and social.

In contrast, the *formal organisation* is the "*official structure and public image [which is] visible in organization charts*" (Price 1997, p 139) and other such documents.

> "It is impossible to understand the nature of the formal organisation without investigating the networks of informal relations and the unofficial norms as well as the formal hierarchy of authority and the official body of rules, since the formally instituted and the informally emerging patterns are inextricably intertwined" (Blau and Scott 1987 [1962], p 190).

In this chapter I specifically explore the concepts of informal and formal from the point of view of how things get done in organisations. Formal structures[78] are needed to ensure that things can get done informally and informal structures support the formal. Both the formal and the informal are necessary in organisations and business organisations cannot be sustained if they are one without the other. Frequently in organisations things get done through the blurring of the formal and the informal and in this situation relatively formal situations may display characteristics of or be enacted through informality and informal situations, processes and events may be endorsed through the formal.

## *6.3 Formality and Informality in the Literature*

Few authors have found it necessary to explain what they mean by informal and formal, as discussed in the previous section, presumably because of the intuitive understandings we assign to the terms as part of our daily lives. As social citizens, we are for the most part, familiar with the broad social 'rules' that govern behaviour in certain settings and have an intrinsic understanding of what is considered inappropriate behaviour in very regulated settings such as in court, in a public lecture, at a ceremonial occasion or in the workplace. In contrast, as Goffman (1963) explores, as social participants, we are also aware of a certain amount of license that exists in some less tightly regulated environments such as in the park, or chatting with friends. This tacit or unarticulated understanding means that it is not always necessary to define the concepts (see footnote 77).

[78] Structures are taken here to incorporate organisational structures, language, documents, behaviours, social interactions, task inputs and outputs and unspoken rules or norms in the environment under study. Structures in this context are both formal and informal.

Given our social understandings of the concepts, the terms formal and informal are employed in almost all areas of analysis as *descriptive terms* rather than as a theoretical area of study. I have chosen not to specifically discuss individual literatures where the terms are used as descriptors rather than being explored as theoretical constructs on their own. This chapter is concerned with the in/formal as mechanisms for getting things done in organisations. I will briefly discuss the literature that addresses the formal and informal as modes in social interactions, although I will primarily concentrate on the literature that looks at in/formal in the organisational literature.

Sociolinguists and those dealing with the ethnography of speaking are notable exceptions for exploring the theoretical basis of in/formal rather than assuming the terms as generic descriptors (Irvine 1979). These groups mostly use conversational analysis as their stage for the exploration of informal and formal.

In addition to noting in/formal classifications in conversation analysis Irvine (1979) identifies three areas where in/formality is addressed in the wider social literature. These are concerned with 1) formality as a communicative code, 2) properties of the social setting in which a code is used, and 3) properties of the analyst's description. Broadly speaking these analytical interpretations can be used as a categorisation of the literature on formality and informality across a number of areas, not specifically related to organisations. In the following section I will briefly discuss the first two of these as a classification tool for some of the literature that looks at informality and formality. I will then discuss the additional literatures that readily appear to incorporate them in relation to business organisations. Such literatures include; the literature on knowledge in organisations, learning and social networks.

### 6.3.1 Formality and Informality as a Communicative Code

Where researchers refer to formal or informal in the context of a communicative code they assume that the speech event can be analysed using defined categories or rules of speech, in particular speech tendencies that indicate a degree of in/formality (Irvine 1979). In this capacity, Irvine notes particular structures within speech events, including predictability of responses, syntactic or semantic parallelism, or allowable variation.[79] The use of the communicative event as a means of assessing in/formality seems to have had a surge of popularity in the 1970s and 1980s and to have taken little precedence in the literature since, particularly in the study of English-speaking societies. Further work could be done using this type of analysis as a component of the whole in/formal phenomenon, both in organisations and other social settings.

### 6.3.2 Formality and Informality as Properties of a Social Setting

By far the most common usage of the terms formality and informality or formal and informal appears to be in relation to describing the characteristics of a particular social setting or event (McDermott and Roth 1978; Goffman 1981; Atkinson 1982). Goffman (1963) describes these characteristics as tightness and looseness. Such tightness or looseness become "interaction orders" (Goffman 1983) which means that the social gathering shared by the various actors tends to generate a set of conventions or "rules for co-mingling" (Morand 1995, p 832) – thus actors are able to co-ordinate their behaviour to produce a common set of acceptable behaviours. In this capacity situations are identified as being formal or not by the actor's display of seriousness, politeness and

[79] Most of the literature Irvine (1979) reviewed and a significant amount of the literature exploring communicative events as a means of looking at formality and informality tends to concentrate on non-English speaking groups, rather than exploring these notions within the framework of our own assumptions.

respect (Irvine 1979, p 774). Conversely, more casual, less predictable and more spontaneous behaviours signal an informal event or set of interactions. Informal situations are seen to be more intimate and provide more license (Irvine 1979, p 775). It is these behaviours or social characteristics to which researchers and lay people refer when discussing the situation as being formal or informal. As previously discussed, the terms are used thus across a vast array of literatures and mostly fail to explain "the meanings and uses of terms like informal" (Malcolm et al. 2003, p 313) and formal - it being not seen as necessary given the socially assigned (or assumed) understandings of the terms. Interestingly, in this fuzzy categorisation of the terms, some authors have noted that this distinction between formal and informal had produced a situation where 'formal' "has become almost synonymous with criticizing" (Atkinson 1982, p 88) the interactions described. This is certainly the case with the literature addressing informal and formal education initiatives (Gorard et al. 1999; Malcolm et al. 2003; Williams 2003).

### 6.3.3 Formality and Informality in Organisations

Informal groups and the informal organisation are not necessarily codifiable but are accepted as significant parts of organisations and how they operate. The importance of the informal organisation, with its own leaders, norms, behaviours, forms of punishment and reward was first highlighted in the Hawthorne studies at the Western Electric Company in the late 1920s and early 1930s (Roethlisberger and Dickson 1939). Barnard was aware of this work although only cites its influence fleetingly in 1938 when he wrote his seminal work on organisations, *The Functions of the Executive.*[80] He notes that "informal organisations are necessary to the operation of formal organisations as a

[80] *The Functions of the Executive* (1938) was an early management text introducing the concept of the informal organisation.

means of communication, cohesion, and of protecting the integrity of the individual" (Barnard 1968 [1938], p 123). Thenceforth behavioural scientists began concentrating on the informal organisation (Reif et al. 1973, p 390) and the plethora of things that that means. Since then formal and informal have been heavily referred to in the organisational literature (Whyte 1948; Roy 1954; Dalton 1959; Burns and Stalker 1961; Whyte 1961; Gardner and Moore 1964; Britain and Cohen 1980a; Trice 1993; Morand 1995; Brown and Duguid 2000). I add to that literature by providing a structured (although simple) way of looking at in/formal aspects of how work gets done in organisations, in this case, ActewAGL. My work is based on the assumption that both the informal and the formal exist in organisations but that things primarily get done between the two and the two are difficult to separate. To clarify my position, depending on how one looks at the in/formal literature, this is either a huge area of academic endeavour (in that most organisational literature acknowledges the informal and formal aspects of organisations) or one which is hardly addressed in that very few works actually analyse how work gets done in the middle ground between the formal and the informal.

The informal group develops their own practices, norms, values and social relations that may or may not conform to the official 'blueprint' of the organisation (Blau and Scott 1987 [1962]). These groups exist in all human cooperative systems (Selznick 1987 [1948], p 121) and assist in ensuring a smooth way for action and operation of the organisation (Dalton 1959, p 194). Informal groups deviate from the formal system, although they may become institutionalised and governed by 'unwritten laws' (Selznick 1987 [1948]). In this capacity they carry out a similar co-coordinating role to that of routines, as discussed in the routines chapter. They can also have negative effects on organisational functioning (Roethlisberger and Dickson 1939; Dalton 1959; Perrow

1986, p 72) and may create ongoing tension between the formal and the informal (Baba 2001, p 189). Most of the more recent management texts explore, albeit briefly, the concept of informal groups, their creation and influence within the bounds of the organisation and how they sit in relation to the formal groups (Price 1997; Bartol et al. 1998; Griffin and Pustay 1998; Ivancevich and Matteson 2002).

It is a logical progression that once management literature acknowledges the presence of the informal organisation that strategic management literature will incorporate the influence this has on the strategy development. Thus we start to see the development of more incremental or emergent strategy (Mintzberg 1994).

#### 6.3.3.1 Informality and Formality in Other Aspects of Organisations

When searching the literature on in/formal one finds many references to informal and formal including in the context of learning, social networks and in/formal exchanges. This section briefly explores these aspects of in/formality.

The literature on in/formal one finds many references to informal and formal learning. This is important to note from the perspective that where knowledge is exchanged informally individual actors learn and as a consequence much of this learning is institutionalised and shared to become organisational learning[81] and organisationally held knowledge. However it is beyond the scope of this thesis to explore this in any detail, other than to note a couple of periphery points which could be explored in further

[81] Much has been written about organisational learning (Levitt and March 1988; Cohen and Levinthal 1990; Senge 1990; Baets 1998; Easterby-Smith et al. 2000), but there is still not a concise definition or understanding of what this means (Weick and Westley 1996, p 441). It is not at all clear what it means for an organisation to learn nor how this occurs (Argyris and Schon 1978, p 9).

work on this topic. Firstly, there is a need to differentiate between informal and formal learning as much learning occurs within the realms of the former (Gorard et al. 1999; Beckett and Hager 2000; Brown and Duguid 2000; Wu and Rocheleau 2001), although both may be necessary for learning experiences to be complete. This has implications for the way organisations learn (Ingram and Simons 2002; Malcolm et al. 2003; Williams 2003).

A second area of interest in the in/formal literature is the way, within organisations, the informal exchanges between people often result in individuals and the collective gaining knowledge. This is evidenced in many ethnographic studies of work groups (Suchman 1987; Barley 1996; Orr 1996; Schultze and Boland 2000), the literature discussing interconnected groups (Hansen 1999; Chadwick and Hanson 2001) including communities-of-practice (Brown and Duguid 1991; Wenger and Snyder 2000; Cowan and Jonard 2001) and also in the general literature on Knowledge Management (Nonaka 1991; Davenport and Prusak 1998; Lam 1998a; Brown and Duguid 2000).

As much of these informal exchanges occur as part of social networks (Granovetter 1973; Granovetter 1983), it follows that a great deal of the literature discussing social networks or Social Network Analysis incorporates both informal and formal aspects of the social environment (Perrucci and Potter 1989; Krackhardt 1990; Kilduff and Krackhardt 1994; Cummings and Cross 2003; Brass et al. 2004; Cross and Parker 2004). In this capacity the social networks are seen to be, at least in part, informal, but both informal and formal communication linkages are necessary for the network to be influential and effective (Boje and Whetten 1981, p 383). It is through these networks that knowledge exchange and thus organisational learning occurs.

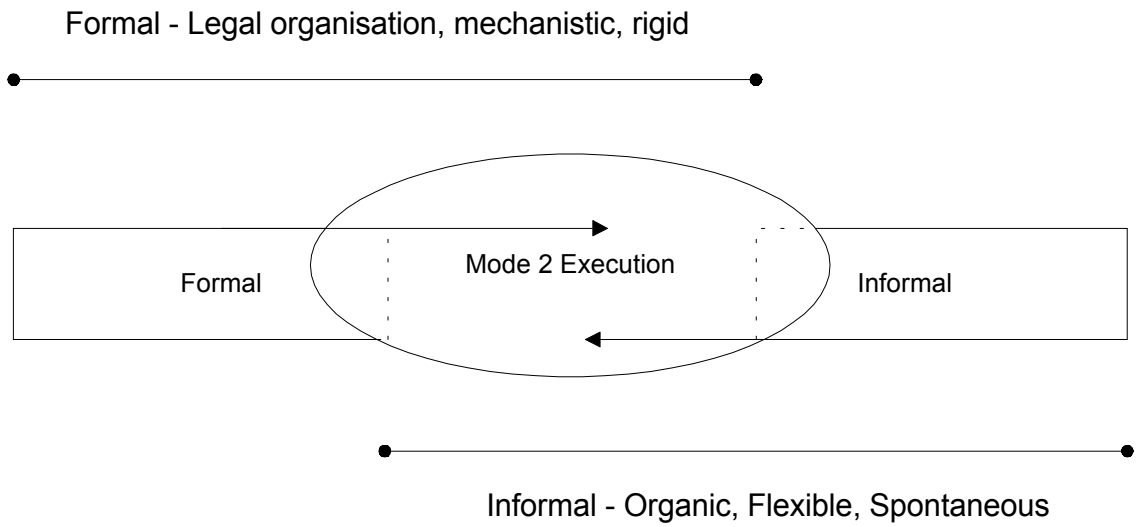
## 6.4 Informality and Formality at ActewAGL – A Three-mode Model

"The informal and formal can never be fully separated" (Baba 2001, p 189), being integrally linked in organisations where one cannot exist without the other. Indeed whilst there are informal and formal components of all organisations, I propose that most operations occur in the realms of what I describe as the second mode or the mode of execution, that is where the formal is enacted informally or the informal is endorsed by formal organisational structures. I suggest that organisations are able to get things done through this second mode. This supports the speculations of John Van Maanen who notes that informal relations are

> "those adaptive but sometimes hidden and unofficial arrangements by which things get accomplished (or ignored). Some are tightly scripted, rather predictable, and governed by well-established social rules and cognitive schemes. Some are not. Most probably fall somewhere in the middle" (2001, p 241).

The following sections of this chapter will address in/formality in ActewAGL. I do this using a three-mode model of in/formality in organisations (Dalitz 2004), allowing the identification of the formal and the informal which then provides a framework for understanding how the two interact in practice. This is visually represented in Figure 6.1, shown below.

**Figure 6.1 Interactions Between Informal and Formal Modes**




The formal parts of the organisation form the first mode of the model. Being an organisation, there are necessarily some formal aspects of the environment, governing how ActewAGL behave, their legal and political status and their accountability. Such standardised, codified and modular forms of organisational knowledge are appropriately formal (Malerba and Orsenigo 2000, p 302). These include, externally, the legislative framework that defines the organisation's responsibilities, and internally the organisation chart, policies, procedures, work instructions and record keeping practices. Formal aspects are necessarily mechanistic (Burns and Stalker 1961, p 119-120) and allow the organisation to be a 'legal person' and to operate in the world. That is, things get done in this mode because it lays out who has specific responsibilities, what can be done and how aspects of the organisation inter-relate.

The second mode constitutes those formal organisational components that over time are enacted through informal means and the informal aspects are endorsed through formal structures. Although the three modes have to exist in organisations, I propose that it is

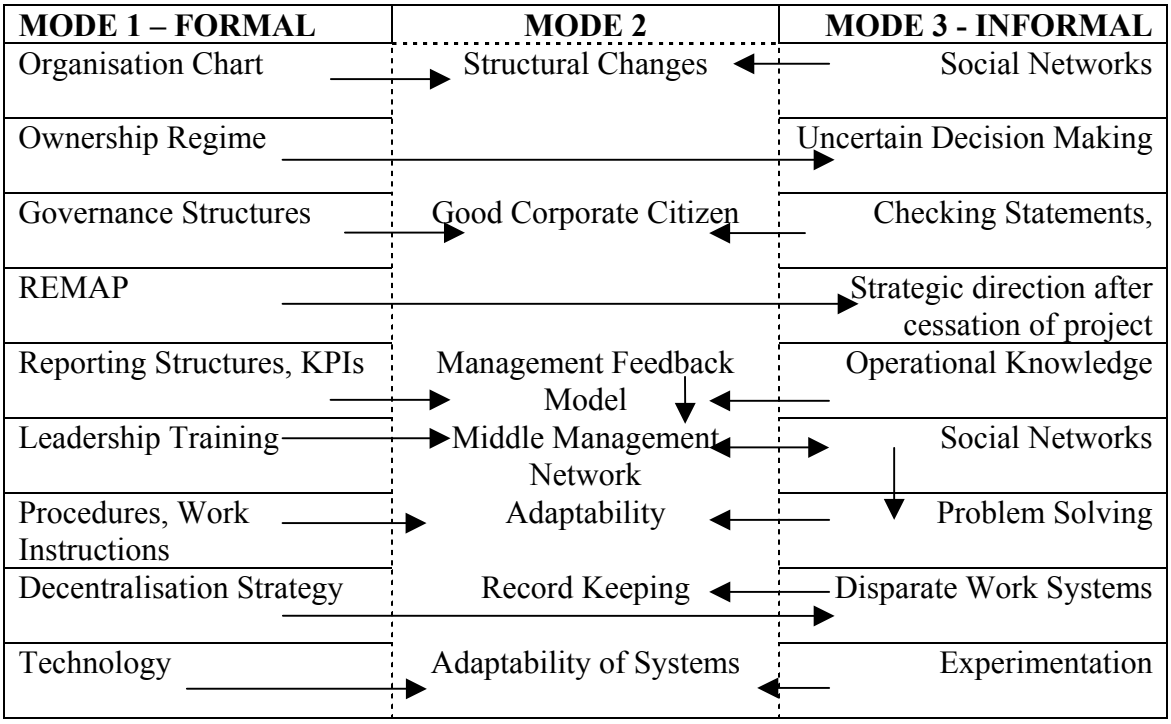
largely in the second mode or the mode of execution where things get done in organisations. This mode is necessary for the operation of organisations in a complex world, which is neither purely mechanistic nor purely organic. An organisation cannot be purely formal or conversely purely informal. If an organisation were purely formal it would be stagnant and unable to change. If an organisation were purely informal it would cease to be a 'legal person' and be unable to deal with the problems of the world, including employing people, purchasing things etc. The second mode is where the formal can employ flexibility and change and the informal can facilitate getting things done through co-ordination and control. The second mode allows for the complicating factors of people and dealing with the external world. This mode can broadly be described as that which incorporates the things that the organisation and individuals therein are *paid to do*. It includes attitudes such as being a good corporate citizen, processes for communication and means of adapting systems. This mode provides a middle ground between the formal and the informal organisations and an opportunity to seamlessly move between the two, a necessity because "there is difficulty in saying where the informal ends and the formal begins" (Dalton 1959, p 222).

The third mode represents the informal aspects of the organisational structures, processes and networks. This mode allows things to get done through flexible responses and an ability to cope with uncertainty. It includes interpersonal networks, individual initiatives, and attitudes of experimentation and problem-solving. Where this mode becomes significant an organisation could be said to be informal or using Burns and Stalker's (1961, p 121) classification, it could be organic. An organic organisation is characterised by uncertainty rather than a mechanistic or highly bureaucratic structure, it relies more on network structures and continual readjustment. ActewAGL seeks to balance the accountability that comes from being overly bureaucratic with a preference

to remain as informal as possible. Through the routines chapter we can see that they are quite mechanistic in their routines and yet the processes and decisions about how these are carried out is quite uncertain, unpredictable and lacking in pre-programmability (Tichy et al. 1979, p 514) and thus are organic.

The three-modes are shown in Figure 6.2 below.

**Figure 6.2 Three-mode Model of Informality in ActewAGL**




In Figure 6.2, above the three columns represent three modes of in/formality ranging from formal to informal through mode 2, which is the mode of execution shown in figure 6.1. The model is a classification device, allowing one to see where particular aspects of the organisation sit in relation to how things get done in the organisation.

In the left hand column is positioned the aspects of the organisation that are formal, public and often in codified form, including the organisation chart, the ownership

regime and governance structures, reporting structures and processes, procedures, the use of technological systems, training and the outputs of projects such as REMAP.

It is my proposition that these elements of the organisation are supplemented by the informal aspects of the organisation, as shown in the far right hand column. These informal or non-codified aspects of the organisation include the social networks, cultural characteristics such as the prevalence of experimentation, problem solving, doing things like checking statements to be "good corporate citizens" and operational knowledge, as well as decision making and strategy.

The arrows represent causal relationships between the formal and informal modes and show that often the formal may result in informal processes and ways of operating and that the informal may be supplemented by formal structures, thus often resulting in the way things are done being somewhere between the formal and the informal. For example, the formal organisation chart is operationalised by the social network relationships and that together they provide an environment which is conducive to structural change, and thus the arrows feeding into mode two. Similarly the formal reporting structures (left hand side of the diagram) that are required by the organisation are operationalised by the Management Feedback model[82] (shown by the right hand arrow feeding to the second mode) where the informally held operational knowledge of the middle managers (right hand side arrow heading left) perpetuates the way the communications flow to management, through the middle management network, as represented by the downward arrow. The middle management network feeds into and is constituted by social networks (as shown on the right hand side of the model) but is

[82] Figure 6.3.

formally supported and encouraged through the Leadership Training (left hand side arrow feeding into the management network from the Leadership Training).

In sum, the formal aspects of the organisation are not how things get done. It is the combination of the formal and the informal that allows work to get done in ActewAGL. For instance, the formal organisation chart gives roles, authority, responsibility and resources to certain individuals, but as the management feedback model (which was heavily verified) shows, it is the informal social networks of the middle managers that actually allow these functions to be operationalised and 'work'. This is in contrast with some organisations where, in my experience, the formal structures are how much gets done. In ActewAGL both the formal structures and the informal processes are necessary in getting things done.

Broadly speaking mode one provides the formal – in terms of the relationships between individuals and organisational tasks this mode could analogously be used to describe the *position description* of the individual, at the second mode the analogy could be described as being the *work that is done*, that is what the individual is *paid to do* and at the third mode the informal could be described as what the individual is *not paid to do but what nevertheless occurs*. Such an analogy helps one to conceptualise the categorisation of the three modes.

The model above can be used to explain how all organisations sit in relation to the enactment of the in/formal. Some organisations will be very mechanistic and often quite formal, others will be quite informal and thus organic. By dividing up the informal and formal structures, processes and outcomes of an organisation it is possible to determine

whether the organisation trends towards formal or informal and to see where the two merge, and subsequently how things get done in organisations. The model forces us to think about things getting done in between the formal and the informal, why this is so and how they interact. In organisations such as ActewAGL, there is a tendency towards the informal, however the model also shows that many of the aspects that I was able to see ethnographically, such as characteristics of adaptability being a good corporate citizen actually are mode two characteristics, not being purely formal or informal. The following section discusses the relationships shown in the model specifically in relation to ActewAGL.

## *6.5 Formality and Informality in ActewAGL*

### 6.5.1 The Organisation Chart and Organisational Structures

One of the distinguishing features of formal organisations is the organisational structure, as presented in the organisation chart. These documents are public and show the way the organisation conceptualises itself formally, through codified and explicit knowledge. The organisation chart at ActewAGL formally locates Logistics under Energy Networks, as shown in Chapter Four - Figure 4.4, although they actually serve the whole organisation and the whole of the supply-chain as a result of co-location of Accounts Payables and Purchasing, discussed in the routines chapter. Accounts Payables used to sit under Finance but they were moved to Logistics in order to promote a whole-of-supply-chain model where all activities on the supply-chain from creating orders to receiving goods are co-located. It is the belief of the Logistics staff that although this created turf wars with Finance periodically trying to claim Accounts back, that it "has been a lot better because you have face-to-face contact with the purchasing officers" and it is "the best thing that could have happened. … Other companies that

aren't doing very well are not separating their functions like this." In this capacity Logistics houses Accounts Payables, Purchasing, Contracts, Fleet and Warehouse functions, all co-located.

#### 6.5.1.1 Structural Change to the Organisation Chart

The organisation chart represents the formal organisational arrangement (Mode 1) enabling structural changes to occur (Mode 2) but the actuality is that most things are achieved and things get done through a combination of informal social networks, relationships, processes, events and structures etc (Mode 3) and the formal (Mode 1). Frequently ActewAGL change the organisational structure, including bringing together or dividing functions or the organisation geographically, or taking on new responsibilities, as discussed in the routines chapter. During the research period there were two major changes in the organisational structure, one resulting from ActewAGL incorporating the TransACT functions under a management agreement. At a local level, I obtained copies of the organisational charts for Logistics Branch since before 1998 and so was able to analyse the frequency of change, as discussed further in the change and methodology chapters. From 1998 until 2004 there were at least 25 versions of the Logistics organisation chart produced. Some of these only reflect minor changes such as name changes but at least 11 have been major structural changes. Other changes could be seen as a loss of power as discussed in the power chapter, but largely represent a tightening of the management of supply-chain with Logistics loosing functions not directly related to the supply-chain, such as Facilities and Security.

#### 6.5.1.2 Structural Change: Decentralisation and Disparate Systems

Formal organisational changes (Mode 1) have resulted in decentralisation of various areas in ActewAGL producing many informal disparate systems, processes and functions. Such functions as Records Management and Library used to be centralised however have now been devolved to divisions, with responsibilities usually falling to an administrative assistant. As these people are neither trained nor co-ordinated by a central area the divisions all tend to adopt informal record keeping strategies which meet their own needs but are not standardised, resulting in duplication and some records not being kept at all (Dalitz 2004). There are many disparate systems for locating information, such as the lever arch files in Facilities or the magazine boxes in Logistics, but there are also many disparate technological systems. Devolved responsibility results in a loss of consistency and duplicated work, in turn creating and endorsing an informal system enacted within the boundaries of the formal accountability system.

### 6.5.2 Informal Social Networks[83]: Getting Things Done Under the Formal Constraints of the Organisation Chart

Although the formal organisation chart indicates influential individuals in decision-making because of their position and displays predictability, tightness, and structure, the frequency of changes to that structure serves to promote informal communication networks and thus informal ways of getting things done. Formal and informal social location and modes of operating are both necessary for the organisation to function effectively (Tushman and Romanelli 1983), however as shown in Dalton's differentiated informal and formal organisation charts the two may be very different (1959, p 21,22). At ActewAGL much of the organisational operations occur in the

[83] As noted earlier, the informal is not just social networks as is often implied in the literature on informal /formal, however social networks do contribute to the in/formal environment.

realms of the informal. The social and information maps of the Procurement area, as discussed in Chapter Two (see also Appendix Four), go a certain way to demonstrating this phenomenon in my own research setting.

Much of the knowledge exchange in Logistics (in both the Warehouse and in the Procurement Section) is as a result of informal interactions. That is, those interactions initiated by individuals, where there is an element of choice as to whom they seek information and knowledge from and which are relatively spontaneous and unpredictable. "It is probably accurate to say that few topics have been discussed more and systematically researched less than informal communication networks in organisations" (Duncan 2004, p 423). The informal social network of an organisation is integral to the operation of the organisation, although, by its very nature, this often sits outside the organisationally endorsed hierarchy (Krackhardt and Hanson 1993; Trice 1993; Doherty 2000; Cross and Parker 2004) and can both support organisational goals and subvert managerial authority (Stewart 1997, p 184). The development of internal knowledge is supported not only through these informal interactions but also through the social networks (Davenport and Prusak 1998, p 37-9) that form the foundation of these informal exchanges, including communities-of-practice (Lave and Wenger 1991; Fox 2000; Storck and Hill 2000; Allee 2001), and those relationships that provide a forum for communication, friendship and / or knowledge exchange in organisations (Whyte 1948; Barley 1996; Mowery et al. 1996; Orr 1996; Brown and Duguid 2000; Cummings and Cross 2003). Far from social interactions detracting from the push for productivity, in the case of an organisation such as the Logistics Branch of ActewAGL, these social relations contribute to trust (Falk and Harrison 1998; Fisman and Khanna 1999; Dirks and Ferrin 2001; Prusak and Cohen 2001; Smith and Rupp 2002; Inkpen and Tsang 2005) needed for the organisation to function as it does, that is, largely based

on informal interactions. It is impossible to have effective knowledge exchange without fostering the informal relationships that occur in every social setting. As Spender notes,

> "Much of the organisational culture literature is grounded in a distinction between the formal and informal aspects of organizational life. Bring a group of strangers together, even in closely defined roles, and they will quickly develop informal relations. In Nelson and Winter's analysis, the habitual use of a routine embeds it in the 'taken for granted' cultural knowledge of the firm" (1996, p 53).

Much of the knowledge required to access and utilise social networks to accomplish some task or improve some process is tacit knowledge in the form of know-who where people know who to speak to. These are tacit in that the social networks are not specifically written down and are often fluid but the knowledge of whom to speak to is held in the heads of various individuals. Individuals know who they know but this knowledge leads to them utilising hunches and leads about the social network and about who to speak to, sometimes these prove false but often they prove effective. The ‘hubs’ in the social networks have know-how, expert knowledge, and often know-why. Sometimes, such as in the case of the Specifying Officers or Project Officers the people often approached in the social network have expert knowledge which is codified as part of their legitimate formal positions. The combination of informal and formal ways of getting things done are epitomised by social networks and the routines that surround them, as discussed in the routines chapter. As Tushman and Romanelli found in empirically testing the degree of influence in decision-making exercised by individuals in in/formal social locations in the hierarchy, “formal and informal processes, then, complement each other in the exercise of influence and in the flow of external information” (1983, p 21). It is this complex array of interactions, friendship groups and communities-of-practice that form the informal organisation and ultimately allow the organisation to get things done.

#### 6.5.2.1 Accessing Informal Networks

In Logistics informal social networks and the informal organisation allow things to get done through providing access to other people and to collective knowledge, and through mutual help, training, and shared problem-solving. As shown in the social and information maps (see Appendix Four), where there are a small number of actors, such as in the Logistics Branch, the social interactions are quite strong with more chance of frequent interactions occurring. Physical proximity helps in the formation of strong network ties (Cross and Cummings 2004, p 930; Inkpen and Tsang 2005, p 156) and in the Procurement Section the knowledge is fairly evenly held across the group with people consistently engaging with almost everyone in that area. This group shows a tendency towards a collection of strong ties in an interconnected network. The maps do indicate that some people are more widely sought for information than others but this is balanced by criss-crossing links indicating that different people are sought for information on different topics. Thus the knowledge exchange is inter-communal and collective, creating synergies (Brown and Duguid 1998, p 97) for the group. Colleagues supported this view with comments such as, "I think you get information from everybody, at different levels", "it is about being able to identify people, having the knowledge of who knows what." Much of this know-who is about establishing relationships, often fuelled by reciprocity, the importance of which has been noted by Davenport and Prusak (1998, p 32). As one informant said,

> "basically if you find someone who does the job well then you stick with them and put up with the others. When you want something done you get to know who can get it done and who is competent to do it. It is very much a reciprocal thing; if you help them then they will help you. It is funny, there are some people with whom one establishes great friendships over the phone but you never meet them. Reciprocity is important for ActewAGL and the way it functions as a whole. If you bring friendliness into it you can work as a unit."

Such knowledge about who to go to is know-who. Usually a person sought for the knowledge they possess has know-what or possesses know-how. People who have an overarching understanding of processes and interconnections often have know-why. As

Cross and Cummings note, "one's awareness of another's expertise, or the extent to which one person knows what another person knows, is associated with the likelihood of seeking information from that person" (2004, p 929).

In Procurement neither strong nor weak ties predominate, indicating that a combination of both increases the diversity of knowledge transfer. The maps (see Appendix Four) indicate a variety of strong and weaker ties shown by varying thicknesses of the lines representing the frequency of interactions observed. Studies have shown that having weak ties speeds up the knowledge transfer when the knowledge being transferred is not complex, whilst strong ties aid knowledge transfer when complexity is increased (Hansen 1999). In Procurement the interactions between the group generally consists of a dense network of strong ties (Coleman 1988; Ahuja 2000). However when I asked the individuals who they sought information from some individuals, particularly those in more senior positions, named people from outside the Logistics group as frequent contacts, showing a broader network of weaker ties external to Logistics providing them with alternative means of accessing the communication networks (Brass 1984, p 531). This is indicative of the broader networks of more senior levels and how these are necessary for innovative work practices to be adopted (Erickson and Jacoby 2003), particularly as it is through the higher levels that ideas and people are legitimised (Cross and Cummings 2004, p 930). Davis' old but still valid study of the informal grapevine access of managers in utility companies shows that approximately 12% of the grapevine channels flowed from a manager's peers at the same level but approximately 54% flowed diagonally either upwards or downward (Davis 1969, p 270). These managers accessed information channels throughout the whole organisation, not just the formally designated communication channels (Gardner and Moore 1964, p 243), as do managers in ActewAGL. Coleman (1988) argued that optimal social structures are built by

forming dense interconnected social networks, yet in contrast Burt (1992) argued that networks consisting of structural holes increase optimisation. The social relations within Logistics consist of both a series of dense internal interactions and at a managerial level (Team Leader and equivalent and above) more diverse but dispersed interactions. Logistics, in accordance with the broader research of Tsoukas (1996), Ahuja (2000) and Freel (2003), illustrates these relationships working very well together providing synergies and complementarities between the shallow but broad networks (Cave 2002) of the managers and the denser internal relations of the rest of the Logistics Branch. As Logistics are one of the few groups to straddle the whole organisation, thus sitting at the junction of a number of communication channels (Pettigrew 1972, p 190), they are able to adopt gatekeeper (Doherty 2000; Stephenson 2002; Kleiner 2003) type roles acting as 'go to people' for people throughout the organisation as a whole, as discussed in the routines chapter. Thus they connect and optimise the two network structures and broaden the knowledge-base on which they are able to draw.

#### 6.5.2.2 Informal Networks Providing Mutual Help and Training

The social network structure in Logistics means that when in training my colleagues and I never used a manual but relied on the mutual help and informal training provided by others. On a daily basis, many of the interactions in the Logistics Branch involve people seeking help from colleagues. The complexity of the various systems used within Logistics means that very few people are completely savvy with the whole 'system', although each person has a comfort zone where they are very skilled. Those that are comfortable with the system frequently provide informal training where they are questioned by colleagues about alternative ways of doing things, or approached to assist with problem solving. Those most comfortable with the system often formally control

particular processes, becoming heavily connected hubs in the social network (Doherty 2000; Stephenson 2002), and giving them expert knowledge and power (Lawler and Rhode 1976, p 93), as discussed in the power chapter.

People will ask a colleague for guidance about completing an unfamiliar task, thus compensating for the lack of reliance on procedures and the multiple ways a single task can be completed. Internally, people seek assistance based on "whoever I think is the most knowledged [sic] in that area, if it would be [sic] purchasing stock it will be one of the Purchasing Officers, if its contracts then the Contracts guys". Informants consistently said that the decisions about whom to speak to about particular issues is a very personal thing, which is "just basically through experience. It depends on what kind of problem it is". Seeking mutual help is an informal process revolving around distributed knowledge, know-who and knowledge about who has a particular know-what, know-how or expert knowledge. It is both informal and tacit, not written down and not officially endorsed by the organisation.

Frequently people outside of Logistics will ring up with an issue they do not know how to resolve, giving Logistics a reputation for being the 'go to people' providing help.[84] The Logistics staff often go out of their way to provide assistance on a wide variety of issues ranging from doing some "detective work" for a supplier by sorting out a short or overpayment in another area, to finding out the name of items not listed intuitively in the stock-codes book. People come to the Logistics staff because of their helpful attitudes, because they have access to parts of the system that other areas cannot see and because they deal with most people in the organisation and have been there a long time.

[84] Logistics Staff believe themselves to be helpful and knowledgeable, however I consistently heard their praises sung by other people throughout the organisation.

Thus "people come to you for information because you have knowledge of what has gone on in the past…it is about being able to identify people, having the knowledge of who knows what." Logistics staff exercise know-how, know-who and expert knowledge, although much of it is also tacit and thus cannot be easily conveyed to others. Despite physical isolation, by maintaining links with the rest of the organisation Logistics assert their own importance, as discussed further in the power and routines chapters. They develop new knowledge thus preventing falling into the trap of their knowledge moving from core competencies to core rigidities (Leonard-Barton 1995). This know-who is an important part of the informal operations in ActewAGL, allowing people to access solutions to problems through networks.

The networks are also utilised formally through training regimes, both at an internal level and throughout the organisation as a whole where Procurement staff train individuals. Internally virtually all the training is done on a face-to-face basis with an inductee being assigned to a particular person to "show you the ropes" and "teach you the system", but with much of the training being "called on the job training" or being "given basically a soldier's five [minutes] by" a colleague, "minimal training just basically self taught over the years". This consists of running the incumbent through something and then letting them perform the actions themselves, gradually increasing their responsibilities, the cost of their errors and the complexity of their tasks (Lave and Wenger 1991). Individuals are taught by a colleague how to access the accounts system in a particular manner but as the system is complex and inductees are subject to information overload (Simon 2002 ) in the initial stages of training, thus they tend to either be only taught one way initially or to adopt the strategies of their teacher. This is informal and depends on an individual's training capacity in conveying system and process intricacies appropriately. Sometimes, this process misses its mark so that a

colleague "might have trained you on what she knows now rather than what she needed to know right at the start" and when this occurs it leads to "a hell of a lot of problems [because it is acknowledged that sometimes staff] weren't trained properly". It is only through dealing with other colleagues in the capacity of a community-of-practice (Lave and Wenger 1991) later on that they learn alternative ways of attacking the same issue and perhaps fixing up any inconsistencies in the training regimes.

External training responsibilities are incorporated into the roles of many of the Logistics staff. Frequent emails are circulated to the whole organisation noting the availability of certain Logistics staff for training about processes, and to answer questions "no matter how small or seemly [sic] insignificant". The training is extended to individuals learning to use the systems, work groups and individuals moving to different areas. For instance when I moved across to Facilities to cover for a staff member from that area who was on holidays (another example of organisational mutual help provided by Logistics to other areas in the organisation with whom they have a close relationship) I felt a little out of my depth. A colleague from Logistics came and sat with me at Facilities and ran me through the processes until I felt comfortable with them. Even then for some days Logistics staff fielded daily phone calls from me requesting assistance, but did so with remarkable cheerfulness, such calls being part of their daily problem-solving regimes. It is accepted and expected that inductees will ask questions and require ongoing instruction because the processes are sufficiently complex and because "it takes at least six months to learn the system".

### 6.5.2.3 Informal Networks Enabling Shared Problem-Solving

The informal social networks and the nature of the tasks and supporting systems facilitates a way of operating that relies heavily on personal and collective problem-solving and on face-to-face interactions as a means of sorting problems out. Such problem-solving strategies and flexibility are necessary and indeed integral parts of the operation of the Logistics Branch, without which the operations of the organisation would not occur as seamlessly.

The staff in Logistics accept problems as part of the challenge of their day-to-day operations frequently saying "don't worry we'll work it out". Individually people engage in "detective work" and feel that they are "good at solving puzzles". "Detective work" involves eliminating possibilities by systematically ruling out options on the system until you can figure out what the issue is or "playing with the numbers" which involves trying several different number combinations and seeing if they equate when sliced in different ways, which may lead to a clue as to what the problem is.[85] This process relies on tacit, know-what knowledge and draws on both procedural and declarative knowledge in that through pattern-matching people assign meanings or identify desired states. In both the Warehouse and Procurement there is a sense of satisfaction in solving a problem, or sorting out a discrepancy. Although in both areas people are sometimes demoralised when the problem phone calls never seem to stop and the pile of Warehouse discrepancies still remains an inch high even after the best

[85] This problem-solving process is similar to that identified in other studies of how people solve problems in uncertain organisational situations. For example, Pentland (1992; 1995; 1997; 2003) shows that in the uncertain situation of IT support desks / lines where many things can go wrong, local knowledge is necessary, coupled with a flexibility that comes from experience, construction of shared narratives and scientific knowledge which enables solutions to be achieved by logically eliminating possibilities based on principles of reproducibility. Much of this problem-solving is based on enculturation through socialisation and through learning from those more experienced (or with different collective experiences), as can be seen in various studies of how technical workers gain their knowledge (Orr 1990; Pinch et al. 1997), it is often informal and heavily based on what a number of organisational researchers have called 'working knowledge' (Kusterer 1978; Scarselletta 1997).

efforts of cleaning them up. Where the individual problem-solving efforts become too much individuals draw on the collective knowledge of the group to come up with solutions.

When the problems become too big and tackling them through all the channels known to an individual have been explored the Logistics staff will ask a colleague for assistance. Many times I observed a group of three or four people trying to sort out a particular problem. Each in turn makes a suggestion and these are systematically tried or rejected until a solution is reached (Goffman 1983), as shown in this extract from my ethnographic notes.

> A colleague was having problems with his computer. A particularly computer savvy person was helping him out. At one point the computer's owner left and the other colleague called two others over to assist because "the date keeps automatically changing". He ran through the motions of changing the date and then moved the curser. This obviously didn't work as he exclaimed, "Did you see that!" when it changed back again. This comment elicited some good-natured joking from the others. The second colleague made some suggestions and the other one wandered over to my desk and that of my neighbor "looking for a calendar". A calendar was found and she said with triumph, "The 12th of October is a Sunday". This explained why the system wouldn't accept the 10th October as a date, because "we don't work on weekends". The person that called them over still wasn't convinced and said bemusedly "but the purchase orders go forward to Monday and the requisitions go back to Friday". The other colleagues again engaged saying that this was logical because you need to have people picking early but you can't delay a truck.

This to-ing and fro-ing with colleagues was common in Logistics and is much the way others (Barley 1996; Orr 1996; Pentland 1997) have described the informal problem-solving skills of technicians, they too would bounce ideas, 'war stories', ideas or suggestions off one another until they came up with a pattern-matched fit which might appropriate a solution to their current issue. Suchman (1983) records a similar to-ing and fro-ing in her study of an Accounts Payables area. My own study in an Accounts Payables area twenty years later is almost identical in the way that people solve problems, only with the use of an electronic accounts payables system rather than a manual system. This to-ing and fro-ing (both personal and collective) as a means of

determining possible solutions to a problem is shown further in this extract of my ethnographic notes.

> As a favour I looked into a colleague's overdue / open purchase orders because the Finance area was chasing them and she was too busy to deal with it. (These are purchase orders that have been raised but nothing has been receipted on them so they have not been paid and remain open or unfilled on the system, sometimes for many months.) Some of these orders I extended and cancelled others depending on the instructions of my colleagues as to the state of the project / order. I then emailed both my colleague and the fellow from Finance to note my actions. Finance emailed back regarding one that I had been unable to extend.
>
> The email read "about order 82946 - if you wish to extend this order (for which the work had not yet been completed) you will probably need to change the distribution line cost to the current project and task number, give me a call if you need any help". I had to ring the sender of the email on another matter so I asked how I would complete this action. He told me and I realised that I knew how to do it anyway. After the phone call I attempted to extend the order in the specified way.
>
> First I checked the project it had been assigned to, this looked appropriate and seemed to be a current project number. I tried to select a project from the pick list but there was nothing comparable which seemed as appropriate. I spoke to a colleague on the phone about it and she said that the project was the one that it should be assigned to - she uses it all the time. I tried again but every time I made a change the system came up with a message saying, "Record updated query block to note changes" but wouldn't allow me to make the changes, simply getting caught on repeating the message. Eventually it let me out with a message "Invalid project field". Everything seemed to be OK, except that I couldn't edit the record. This was curious so I sought the help of another colleague. Our exchange was as follows;
>
> D: What is the order number?
>
> T: 82946
>
> D: What are you trying to do - adjust the amount?
>
> T: No just extend it.
>
> D: Why?
>
> T: It keeps coming up on the open list but the work is still continuing. I want to extend it till the end of the year to clear it up.
>
> D: OK. I am in [to the system and the order] now. … That's odd...Are you in it?
>
> T: No I am out of it now, in the middle of another order.
>
> D: It won't let me extend it. I thought you were in it because it is looped – it (the system) thinks someone else is in the record. I get the "Record updated query block changes" screen.
>
> T: No it wouldn't let me either. That's what I got and then eventually it says "Invalid project field". But it isn't - this is the one we use all the time. It did it last week too - perhaps it has been locked the whole time.
>
> D: What task number are you using?
>
> T: I am out of it now but I think it was 1.1
>
> D: Yes. It all seems to be OK. Why won't it let us extend it? Mmmm ... let's try getting in another way. ... No it won't. … I think it is looping itself. Hang on ... I got out and back in and I think ... yes. I've done it.

This exchange reflects the way the people in Logistics draw on the knowledge of other 'experts' and work through various unwritten strategies when faced with inconsistencies in the system, figures that do not add up or query invoices and purchase orders. In Logistics some of this is because of the different knowledge-bases of the individuals and their prior experience with the system and some of it is simply trying out a number of different ideas and seeing which works most effectively.

In the Procurement Section, where the inputs and outputs are much clearer and inconsistencies occur within the process, much of the problem-solving is done in relation to the many possible variables *within* a process. In the Warehouse, where the inputs and outputs are likely to be fuzzier, people are more likely to utilise problem-solving skills when dealing with individual situations. That is, for each occurrence they need to assess the situation and apply a solution that meets the fuzzy front and back end requirements of the customer. The problem-solving is preventative in the Warehouse rather than reactive. In Procurement it is reactive. This difference may serve to explain why there are quite a lot of discrepancies in the Warehouse. The staff use individualist approaches in dealing with issues and thus there is more room for error both in terms of others not conceptualising the problem-solving methodologies of the individual, but also because predictive problem-solving sometimes fails to anticipate what the problems will be. In contrast reactive problem-solving addresses a specific problem.

In both the Warehouse and the Procurement Section, by far the preferred way of solving problems is face-to-face, occurring at a local level, organisational wide and extending to the wider community of suppliers and customers. As discussed, a colleague trains others internally and there is a heavy emphasis on showing as a means of instruction.

Across ActewAGL, colleagues frequently go to other ActewAGL sites "to try and sort out a problem" with invoices, receipting, orders, monies or ongoing errors. This is seen as an effective way of dealing with ongoing issues but usually only occurs after the Logistics people have spent a great deal of time "trying to sort things out", sometimes literally weeks, on their own or with others. Often people take a colleague with them when they go to see people at other sites about problems. In some instances, as a result of on-going issues, "two officers [will] drive out there to sort it out" for relatively small amounts of money such as a $30 order but this is justified in terms of the problem-solving time spent previously. Such an act is partly preventative of future problems. Speaking to people face-to-face is also seen to be a more comfortable alternative when dealing with problem internal customers rather than "trying to be nice on the phone", which could lead to misunderstandings.

Externally, informal face-to-face meetings are used to solve problems with suppliers. Many suppliers send representatives out to the Purchasing Officers each week or fortnight. In some instances these interactions have become so informal that no records are kept of the meetings and virtually no work issues are discussed. During the time of the research, moves were afoot to discourage this and increase the productivity of the meetings by having the Purchasing Officers raise issues and document the results of the meetings.[86] Where suppliers do not send representatives and where there are issues the Purchasing Officers organise face-to-face meetings with company representatives. The philosophy of the Contracts team " is to be the bridge between supplier and the end

[86] An all day note taking course was attended by all the Procurement Staff in order to provide them with the skills to document their meetings and to add value to the recording of meetings. Interestingly the Logistics staff rarely took notes during meetings and tended to rely on their informal recollections of events.

user…[and] to bring those two parties together in a satisfactory business relationship", frequently and informally, before problems arise as a means of ensuring that all parties are happy and that if issues do arise that these are able to be addressed relatively easily. "It is all about relationship management," and about "go[ing] out to the customer-base and say[ing] 'are you happy with the performance', if it is an inventory type item then go[ing] to the Purchasing Officers and ask[ing] them if they have any problems or issues". The informal nature of the relationships means that problem-solving frequently becomes quite informal. Naturally there will be problems with some people, both internal and external that cannot be solved using informal means but where possible the organisation prefers to adopt a more informal approach to solving problems and to dealing with people.

### 6.5.3 Ownership Structure

The ownership and governing bodies of any organisation are formal, however at ActewAGL the ambiguity of such relationships and the power of the myriad of areas represented in the ownership regime means that the resultant decisions are increasingly informal, unpredictable and apparently spontaneous. The ownership of ActewAGL (Mode 1) is split between government and private sector affiliations, as discussed in the ActewAGL and change chapters. Each of these groups have their own agendas and the power relations are such that they often are very influential in the direction of the organisation with the organisation having to make or endorse decisions that they may not have done otherwise. This situation makes decision-making and long term strategic planning difficult for the ActewAGL senior managers.

The strategic direction is generally not communicated to those people below the management level, as shown in Figure 6.3, and are not formalised. This results in emergent strategy, which could be said to be informal (Mode 3), where actions are taken one-by-one producing an overall pattern or consistency (Mintzberg 1994, p 24-25), reinforced by the historical foundations and organisational path dependency, but where the pattern is not evident until the organisation gets there. Fortunately the strong historical path dependency allows the organisation to continue to do well, as discussed in the change chapter.

An example of the strong historical path dependency can be seen when REMAP was disbanded. The solid foundations on which it was formed and its path dependency allowed the project principles to continue to provide informal direction to those involved, as discussed in the routines and change chapters. In this case, and in the overall operation of ActewAGL, the people in the organisation have an understanding of what needs to be done in the distribution of water and electricity and how to do it. Through this understanding they are able to operate even when the strategic direction becomes relatively informal (Mode 2). This knowledge is codified and explicit but is also tacitly held in the collective knowledge of the group, in organisational memory, expert and know-how knowledge.

### 6.5.4 Corporate Governance and Good Corporate Citizens

All organisations are governed by rigorous formal legal obligations and also by informal norms, modes of behavior and tacit ‘rules’, the latter governing as much as the former and often enabling the enactment of the former. The formal legislative framework includes the Corporations Act, the Trade Practices Act, OH&S legislation, equity and

diversity policies, policies on internal fraud, privacy and contractual arrangements. In the case of ActewAGL compliance is also required with the Utilities Act, environmental law, technical and governance standards and with their own publicly articulated code of conduct (ActewAGL 2002b). These externally imposed policies, standards and legislation are prescriptive, codified and there is little flexibility or choice with regards to compliance.

Internally the behaviour of ActewAGL employees supports the formally endorsed legal compliance although much of this behaviour is governed by the norms and modes of behaviour of the informal organisation. The formal structures are enacted and supported informally through cultural aspects of the organisation, in particular through being a 'good corporate citizen'.

#### 6.5.4.1 Good Corporate Citizen

This section explores more fully the concepts associated with the informal enactment of formally espoused goals of being a 'good corporate citizen', including following up on statements, responding to customers and the environment.

The old adage of 'actions speak louder than words' applies to ActewAGL where the people behave as good corporate citizens, meeting and going beyond the formal rhetoric. In the formal legal compliance brochure distributed to all new employees one of the stated aims of the legal compliance program is "to ensure that ActewAGL is a 'model corporate citizen', acting ethically and according to the law" (ActewAGL 2002b). Donovan repeatedly notes in his history of the organisation that "the

organisation sought to be a good corporate citizen" (Donovan 1999, p 226) through a variety of means including sponsorship, marketing and "provid[ing] assistance to …worthy causes" (Donovan 1999, p 280). There was and is a strong focus on "promoting ACTEW[AGL] as a good corporate citizen within the ACT" (Donovan 1999, p 243). The formal, codified nature of these references (Mode 1) shows a structured, predictable and supported expectation of the organisation. In many organisations the senior echelons espouse rhetoric of being good corporate citizens but this is not reflected throughout the business units of the organisation, yet in ActewAGL being a good corporate citizen is lived-in-practice through the operation of the Logistics branch, and throughout the entire organisation (Mode 2). These behaviours occur through the norms and culture of the informal organisation (Mode 3) rather than through people following what has been formally endorsed.

#### 6.5.4.2 Following Up on Supplier Statements

Although not formalised or written down, informally the accepted practice is to follow up on supplier statements[87] (Mode 3) in order to be seen to be doing the right thing (Mode 2). The Accounts Payable and Purchasing staff in Logistics, Facilities and other areas dealing with suppliers, regularly follow up on supplier statements, searching for items on the statement that have not been paid and then requesting a copy of the outstanding invoice from the supplier so that they can pay, sometimes well in advance of the due date. This is done not because there is not enough work to do but "because we are good corporate citizens. We have a reputation for paying on time and we need to maintain that reputation. If we didn't pay on time we'd look bad." "This was the culture

[87] Suppliers frequently send courtesy statements detailing amounts of monies due, owing or paid. Often they send these quite soon after having completed the work, sometimes before the invoices have been received by Accounts Payables. In some cases they include remitted monies as well as monies not yet paid. (ActewAGL cannot pay on statements only on invoices).

[of Procurement and] …this had always been the case. …They had always followed up early. It wasn't a change we promoted but it came through." According to a key informant this "meant that [ActewAGL] then has some lee-way. If we do the right thing by the customer then the customer would be more likely to do the right thing by us". Such a cultural issue has formally been endorsed by writing the contractual clause of 'payment by 30 days' into contracts, although predominantly this is informal because it is a norm of behaviour, an attitude, rather than a specifically endorsed and stated rule. Following up on statements represents tacitly held collective knowledge, which is declarative rather than procedural knowledge.

Following up on statements results in distributed knowledge whereby it changes the behaviour of people in Logistics and also people throughout the whole supply-chain. That ActewAGL follows up on statements prior to the due date of payment has implications for cash flow and also affects the behaviour of the suppliers. It is not infrequent for suppliers to ring up within a week or two of sending an invoice to inquire as to its status. Frequently the invoice has been entered onto the system and it is in the intervening period between it being entered and the payment being made (two weeks) that suppliers will often ring up. The process of following up on statements and also of supplying information to suppliers on the status of payments is an informal response, often relying on individual expert knowledge of the size and characteristics of suppliers. This response revolves around, often informal, relationships between suppliers and ActewAGL staff. In times of difficulty, such relationships often reciprocally benefit ActewAGL, such as in the bushfires of 2003.

### 6.5.4.3 Responding to Customers

As good corporate citizens ActewAGL tries to pay on time, not to disadvantage other people, and to respond promptly if someone has been hurt as a result of their action or inaction.[88] These actions are largely endorsed informally. People are not told to clear the backlog before processing payments or to expedite payments where people have been hurt, yet consistently they do so. They try to make payments quickly, within 14 days of receiving the invoice, especially for small companies or sole traders. These attitudes come from a collective cultural (Kotter and Heskett 1992) mode of behaviour which is accepted and informally proliferated. This collective, declarative knowledge governs behaviour to the extent that it has become explicit, although not codified knowledge.

Where people have been hurt or disadvantaged by ActewAGL actions, the organisation has a very fair and quick reimbursement strategy, although again this is not formalised. In cases such as a house burning down due to an ActewAGL power line falling over and causing a fire, the very next day the Accounts Payable people processed a 'quick cheque' to be sent to the lady in question so that she would have something to tide her over. Occasionally ActewAGL make a mistake and pay someone that had been disadvantaged when they should not have been paid. This happened in a situation where ActewAGL paid a woman who had paid the plumber when she was not entitled to reimbursement. In hindsight they discovered that they should not have paid her as it was

[88] ActewAGL's concern for customers, both internal and external extends further to a concern for all of their constituents including stockholders, the Government and their employees. In accordance with the results of a study into cultures and the relationship with performance, this tends to suggest that ActewAGL have many of the criterion needed in order to be classified as a high performance company with an adaptive culture. Company performance continues to improve, they care about their constituents – a care espoused through action, through visible mission and vision statements and through the talk and actions of senior managers, there is a fit between culture and context, and there is a prevalent ability to adapt and change as perpetuated by a few people (Kotter and Heskett 1992).

between the plumber and herself. Nevertheless, this is accepted because "a few hundred dollars here and there isn't a problem for ActewAGL but loss of customers could cost us dear".

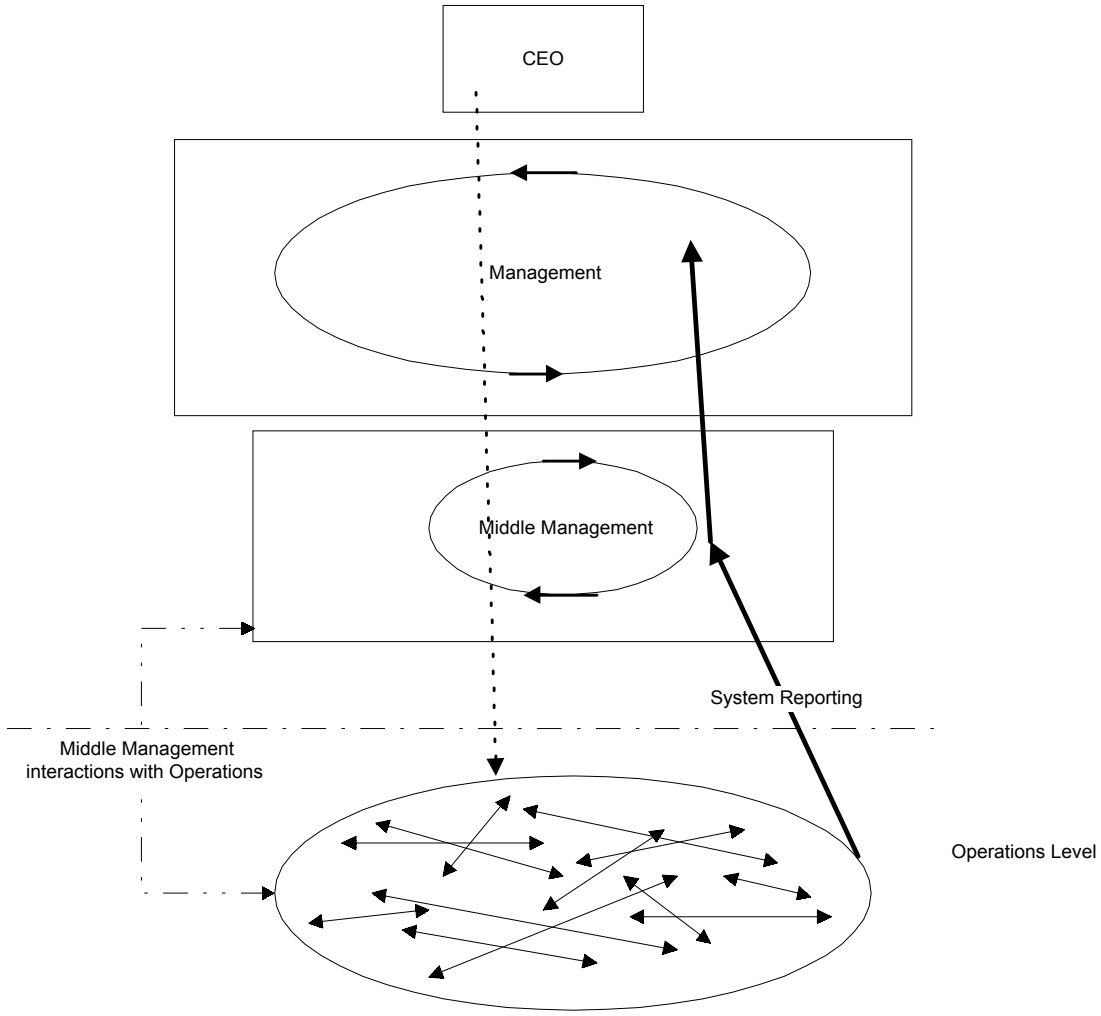
### 6.5.4.4 Environment

As part of being good corporate citizens, ActewAGL is concerned about the environment and has long promoted green energy, renewable sources of energy and environmental conservation. They follow this through with sponsorship for environmental causes, testing of waterways, the creation and adherence to environmental plans and such things as providing Agri-Ash for soil conditioner based on by-products of the sewerage process. Yet ActewAGL do not just do this in response to the demands of the community. In 1992 an Environmental Impact Study revealed that the pink-tailed legless lizard resided in small pockets of the ACT, New South Wales and Victoria, one of which was the proposed site for a bypass dam ACTEW (as it was then) was going to build. ACTEW financed a research program on the feasibility of relocating the lizards in the name of the conservation of the species and then subsequently re-vegetated the area around the dam to recreate the habitat for the lizard (Donovan 1999, p 231). These actions are formal, codified and explicit knowledge yet the impetus for such a reaction is largely tacit, embedded knowledge resulting from organisational memory derived from how the organisation has acted in the past. Organisations such as ActewAGL rely on history to inform their current and future modes of operating and communication strategies.

### 6.5.5 Reporting Structures, Feedback and Communication

In an organisation like ActewAGL the formal reporting structures are supplemented and enhanced by the informal communication and network structures at the operational levels. This results in a flow-on-effect with a strong informal social network, heavy reliance on operational knowledge-bases and KPIs that are largely empirical rather than taking into account operational issues. Below is a visual representation of the feedback loops and organisational communication flows within ActewAGL, as endorsed by my informants.

**Figure 6.3 –Management Feedback Loops**




The model above shows the main flows of organisational communication and where feedback is likely to occur. It identifies the fairly linear and formal communications that

occur at more senior levels and how much of the knowledge is operationalised in informal communications at the operational levels. Senior management communicate with one another and feed some broad level instructions down to the middle managers, being those at branch level and below, as shown by the broken downward arrow. Mostly the instructions are not directive to the point of telling people what to do and lack strategic explanations for the overall direction of the organisation. Frequently even managers are not informed of major strategic decisions until they are announced to the media. When rumors were rife about ActewAGL reestablishing a relationship with TransACT the CEO reported to the 'Leadership group'[89] that "I cannot confirm nor deny" and other senior managers referred to it in code reminiscent of highly secretive military operations with terms like "Project Genesis" being used in discussions about the process.

To overcome this patchy communication and lack of involvement with strategic decisions the middle managers, at a branch level and particularly at the level below that, communicate amongst themselves, utilising their social networks[90] as discussed previously. This is represented in the model by the circular figures at the management and middle management levels. These social networks are both informal and deliberately cultivated by the organisation. One way they do this is to establish leadership networks based around those who attended the off-site and intensive leadership program together, an initiative of a former CEO (Donovan 1999, p 224). Thus at an organisational level, interactions occur largely based around a group of

[89] The 'Leadership Group' consists of all those managers and up-and-coming managers that had attended the Leadership Training formally endorsed by the organisation. This group included managers, team leaders, and people considered to have potential as organisational leaders. Over 10% of the organisation are included in this category with more primed to attend in the near future.

[90] This is consistent with studies on communication networks where "much of whatever instrumental communication there is does not flow downward to lower participants but circulates among the staff or among the staff and some outsiders" (Chamberlain 1958, p 145 cited in Etzioni 1961, p 140).

middle managers and select individuals at the operations level that are able to work around the organisational structural holes (Burt 1992). Through their operational knowledge, these people provide connections to others who do not know each other or are unfamiliar with another's expertise.

The middle level managers then report back to their branches although as an informant noted, "there is a[n invisible] wall with tiny holes in it", represented in the model by the line between the operations level and the middle managers, which prevents all of the information getting through, reminiscent of information by osmosis. The information that does get through is very much filtered.

As with the middle managers, at the operations level, which includes the Team Leaders, extensive knowledge networks exist and these people communicate technical details and improvements amongst themselves. The communications at the operations level are represented in the model as a series of almost self-contained criss-crossing arrows. Very little of this communication gets fed back up to the management levels, and most operational decision-making occurs at these levels because they have the autonomy and delegated authority to make decisions. This exchange relies on expert knowledge, know-how, know-what, know-who and to some extent know-why. This level also includes the newly implemented performance management system. This system aims to provide improvements but is relatively informal with 'quality time' with your manager every three months[91], but with most people comfortable enough to not even do any preparation. The people at the operational and middle management levels have a

[91] Three months seems like quite a short time, however the aim is to provide a routinised way of discussing problems, progress and performance issues from an individual perspective then feeding into the performance of the whole branch. The feedback is designed to be frequent and accurate in the name of improved performance. Communication about performance is most effective when it is fast and frequent as Lawler & Rhodes (1976, p 54) note.

number of networks throughout the organisation generally with network structures that have many weak rather than a few strong ties (Granovetter 1973; Granovetter 1983; Burt 1992; Watts and Strogatz 1998; Ahuja 2000; Herman 2003). These connections outside the immediate area allow for greater diversity and rapid transfer of information (and sometimes knowledge) throughout the network (Burt 1992). Influential people in these networks are often informal leaders with extensive personal power (Etzioni 1961, p 90-1), as discussed in the power chapter.

Although most of these communications do not make their way to management levels, the exception is the very formalised systems reporting information, represented in the model above by the diagonal solid black line. Such information control systems are instituted because "management and others feel the need for information about what is going on so that [in the absence of strong links to the informal networks] they can co-ordinate the activities of others"(Lawler and Rhode 1976, p 3). Taking a taxonomical approach this reporting represents data. The data consists of formal statistics reporting on the KPIs and other quantifiable but not very detailed measures on which formal performance planning[92] and senior management decisions are based. Senior management appears not to need detailed information in order to make decisions. As Weick notes, "accuracy is nice but not necessary" (1995, p 56), meaning that sensemaking for senior management revolves around what is plausible, and that plausible decisions can be (and are) made without detailed or even accurate information about the situation. Although most of the other communication, feedback and operational decision-making occurs through information exchanges, thus building a

[92] Each year the branches write a plan. (The content of which largely derives from the Branch Manager's performance management plan with input from the customer service survey.) These plans then feed into the performance plans for the levels below Branch Manager and eventually contribute to the goals of staff. In this way the performance management process eventually feeds into both the goals of people at the operational levels and the strategic direction of the organisation.

solid knowledge-base at this level (with some information filtering to middle management), little of that information is fed back up to the middle management, management or CEO levels. As Starbuck and Milliken note,

> "people with expertise in newer tasks tend to appear at the bottom of hierarchies and to interpret events in terms of these newer tasks and they welcome changes that will offer them promotion opportunities and bring their expertise to the fore. Conversely, people at the tops of organisational hierarchies tend to have expertise related to older and more stable tasks, they are prone to interpret events in terms of these tasks, and they favor strategies and personal tasks that will keep these tasks central" (Starbuck & Milliken 1988 quoted in Weick 1995, p 53).

These tasks and strategies are not necessarily resistant to change and do indeed change, often at ActewAGL in a continuous and fragmentary way, as will be shown in Chapter Seven, however the changes do reflect the patchy information received by senior management and also their propensity for older ideas.

Although the feedback processes are largely informal internally, externally a great deal of formalised effort goes into setting up relationships with the provision for feedback. Much of the long-term strategy of the Procurement and Contracts areas involves setting up processes that make giving and receiving feedback easier. Feedback is often sought and difficult internal and external customers are respected for being "refreshing because [they] give serious feedback", although this is often informal.

### 6.5.6 What People Say They Do and What People Do: Procedures, Work Instructions, Work-arounds and Adaptability

ActewAGL tasks are coordinated and controlled by a series of formal, codified and explicit procedures and work instructions, however the tasks are often carried out by informal work-arounds, adaptability and the previously discussed problem-solving efforts of individuals and groups. This is partly dependent upon where on the organisational task continuum informality is acceptable with differences occurring

between the fuzzy front and back ends of the Warehouse process compared to the fuzzy middle part of the Procurement processes. Most organisations, ActewAGL included, are governed by readily available procedures and work instructions. When tasks become increasingly complex and the procedures overwhelming, as discussed in the routines chapter, people tend to adopt informal means of coping with them, they work-around the procedures, take short cuts and adapt the tasks, procedures and systems in order to ease cognitive load and to make the bludgeoning procedures more efficient. Kusterer (1978) defines this ability to adapt and increase effectiveness in the working environment as 'working knowledge'; learnt as part of a problem-solving mode and in response to variations in the work environment so allowing a stimuli for the learning of new knowledge.

#### 6.5.6.1 Procedures and Work Instructions

ActewAGL staff adopt a flexible, almost casual attitude to the procedures in order to cope with them and to continue to complete tasks. Colleagues complained that "we have a hell of a lot of procedures, sometimes it is pretty hard to keep on top of all those" and said things like "there are too many procedures so they go in one ear and out the other [so] people [do] the best they can to achieve the same outcome and work it out". Part of this 'working it out', means that people move the formal procedures into the domain of the informal where individuals have more control, based on expert knowledge, know-how and tacitly held understandings of how far they can push the boundaries. When people take shortcuts or alter the procedures they are reliant upon procedural knowledge and organisational memory of the way things have been done in the past and broad-brush guides of desired outcomes. An informant noted, "the procedures are formal but with everything you need to have some degree of flexibility".

When formal procedures become informal through attitudes, the employees adopt a certain willingness to work around the procedures which "aren't set in stone", "not break them but bend them, because all situations are different" or as one informant noted "to adopt their own strategies and do their own thing and it isn't always the way that the procedure says to do it". Through bending the 'rules' the staff are able to exercise problem-solving skills, as discussed previously. The informal attitudes to the procedures are thought by some to be the main reason why the number of Warehouse discrepancies is so high, as discussed further in the routines chapter. The Warehouse staff partly subscribe to this view but also note the informality of the process by acknowledging that "everyone is to blame", because they get "so busy doing all sorts of things at once that people miss steps", but that so long as "we still get the same result" a bit of flexibility is permissible. Yet they also acknowledge the Team Leader's right to every so often express disappointment and rebuke them about lack of correct procedure following. Such comments show that whilst formal procedures exist, these are enacted largely through informal means and ways of working (Mode 2). In turn this way of behaving indicates the strength of the informal in that despite reproach people continue working around certain processes, a phenomenon present in the literature on organisational activities (Whyte 1948; Roy 1954; Sayles 1958). Such a response represents a kind of 'truce', whereby people are reproached but accept this as a right of certain people and this does not affect the relationship or the ability to achieve tasks, as discussed in the routines and power chapters. In this sense formal institutions such as standard operating procedures, combined with informal institutions like those making up the 'truce' establish certain expectations for the members of the firm (Becker 2003; 2004).

#### 6.5.6.2 Accessing and Changing Procedures – Promoting Informality and Work-arounds

The way employees approach the work instructions and procedures, their preparedness to work around them and whether they are seen to be formal or informal is preempted by organisational attitudes and expectations. That is, where the procedures are difficult to access, constantly changing or not transparent employees will have a much more informal attitude to them. The intranet has recently been updated and is much more efficient, yet during my fieldwork at ActewAGL accessing these systems was a challenge in itself. At that time it was ostensibly possible to find procedures and other information on the intranet system[93] or in the case of the internal Logistics procedures, through the shared drive (Dalitz 2004, p 180), however due to some problems when the initial EDMS was rolled out, all documents became visible to all people in the organisation, resulting in a hastily implemented and inferior alternative instead of the intranet being an "answer to our prayer".

In order to compensate for the failings of the system people instruct others to "avoid this [intranet] thing, go to my exchange and you've got it there which you can just pull down", save copies of much used documents to their own drives or to go through a process of accessing the documents through a colleague or through an historical repository on the setup screen. Accessing documents through the intranet also was fraught because the documents changed so frequently that often the latest versions were not readily available, creating an attitude of mild skepticism about the reliability of the procedures. I was advised not to rely on hard copies for more than a month or so after I had printed some procedures out. People in all areas tend to rely at least in part on informal interactions rather than consult changing procedures because "if you were to

[93] Although in reality, this often proved too difficult, unreliable or frustrating for people to pursue.

read every procedure every day, that is what you would end up doing, just reading procedures and you would get nothing else done." It becomes a question of perceived efficiency, where sometimes an informal network is seen to be a more efficient source of information, than the codified and explicit knowledge embedded in a procedure. After I left the field, the intranet arrangement changed. The Logistics team even received congratulatory accolades on their Intranet site[94], with them "grab[bing] brownie points while you can" however in the four years of operating on inconsistent and difficult to access procedures, people had become used to working around the failings of the system and had come to regard the procedures and official documents informally.

#### 6.5.6.3 Procedural Processes – Informality at Front, Back or Middle of the Process

Informal approaches to procedures are common in relation to documents but also through the processes themselves, these vary according to the nature of the tasks and whether there is flexibility and certainty at the beginning, end or middle of the processes. The Warehouse for instance is heavily procedurised with an assumption that the tasks always display a rigidity that does not deviate – the information processing view. The daily tasks are quite routinised, however, whilst the steps *within* a processes may be quite rigid, there is a great deal of potential fuzziness at the *beginning* and *end* of the processes because at each of these stages the Warehouse staff deal with people with different requirements, expectations, agendas and ability to change their mind. Thus although the tasks required, to say fill an order, are relatively easily procedurised there is a great deal of potential variability and uncertainty requiring the Warehouse

[94] I was no longer in the field but was sent the congratulatory note as I had contributed to the new Logistics intranet design. This is indicative of both my acceptance and impact in the field site, in that I was also considered a contributing colleague.

staff to adapt situations and routines. Such adaptability on the part of the field crews and the Warehouse staff to accommodate missed items on orders or override the formal systems is related to know-what and expert or product knowledge where "our knowledge has shown some engineers that they have the wrong drawings or have ordered the wrong things". The Warehouse staff possess incredible product knowledge, knowing codes, uses of items, amount of cable on a drum, where things are etc. They also have a myriad of procedures to follow, yet the knowledge-base utilised is not orientated towards procedural knowledge but is more problem-solving with them assessing various scenarios for each situation. This use of knowledge is individual, spontaneous and not predictable, thus it is enacted through the informal.

In contrast the rigidity of accounting practices means the Procurement Section is characterised by informality in the middle of the processes. At the front and back ends the inputs and outputs are relatively clear and defined by the demands of accountancy, however the selection and carrying out of tasks are relatively autonomous with delegated authority (Foss and Foss 2002, p 23), as discussed in the power chapter. This autonomy allows the Procurement staff to exercise problem-solving skills. Unlike in the Warehouse, the Procurement staff deal with people in the middle of the process rather than at the beginning and the end. It is here where the staff "all have their preferred ways of doing things and will enter through a different route", thus this is where their problem-solving skills are necessary, and the selection of each strategy is informal, as discussed further in the routines chapter. As "there are so many different things that you are told that you don't know which is correct", and because the jobs are quite "varied with decisions each day about which priority is a priority" it would be difficult to procedurise these processes. The Procurement staff have extensive understandings of the capabilities of the system and are able to exercise choice in the selection of preferred

routes in the carrying out tasks. Their "detective work" or problem-solving is similarly situational, reactive and difficult to procedurise, although it represents procedural knowledge in its nature. In contrast to the Warehouse the Procurement area has very few formalised procedures. There is a view that "there are some small things that can't be represented in procedures. There are a lot of things in people's heads. So the little things aren't reflected in the procedures" and although procedural are characterised and enacted informally.

Both the Warehouse and the Procurement areas are characterised by a degree of informality that dominates the processes, however, the nature of the tasks, the knowledge-bases in each area and the perceptions of each as a system, means that the informality and its relationship to the formal procedures differs. In the Warehouse the system is seen to be "black and white. If you book two in, you book two out. It is all system driven", and is thus based on the information processing view of knowledge. In reality, if two are booked out sometimes three are taken out. In Procurement however, by definition, if two are booked out then two have to be taken out – it cannot be otherwise according to the codified, explicit and embedded laws and rigidities of accountancy practices.

#### 6.5.6.4 Formal Procedures vs. Informal Networks for Gaining Information

Information can be gained about organisational tasks and activities from formal procedures and work instructions but in Logistics people also frequently gain information from their informal networks. The reliance on social networks does however differ slightly between the Warehouse and the Procurement Section. I often

observed the Warehouse staff asking a colleague a particular question about the status of a forecasted order or about a particular cable for example, infrequently they would ask about the system. Whilst their questions were often quite specific, indicating the employment of some prior personal problem-solving strategies, they nevertheless often used informal networks to gain information. Yet, repeatedly I heard from Warehouse informants that "unless you go and read the procedure yourself … word of mouth is quite often not the best way to go", "sometimes you try to get information out of people and they either don't fully know what they are talking about or they just don't have the full story". This disparity between observed behaviours or theory-in-use and responses to interview questions or 'espoused theory' (Argyris and Schon 1978) suggests that perhaps they do not really trust each other or that the politically correct thing to say is that they consult the work instructions. (If nothing else it shows the power of the ethnographic method in elaborating the differences between what people say they do and what they actually do.) In any case it appears that in the Warehouse the staff use a *combination* of reliance on others and reliance on the formal work instructions. This tendency indicates a blurring between the informal and the formal – a second mode response.

In the Procurement Section the staff are much more likely to utilise social networks than formal procedures. Indeed, in the Procurement Section colleagues (and I) "had never seen a manual". All of the training in the Procurement Section is face-to-face and personal (Malerba and Orsenigo 2000, p 302) and staff frequently ask a colleague for help with a particular task or application. The training is both informal and communal (Brown and Duguid 1991). Although there is a push for departing staff to get their work instructions up to date before they left in order to capture some of the previously referred to "small things" which aren't in the procedures, there is a reluctance to do so

and even if they did, I saw no evidence of others using these after the person had left.[95] Instead people rely on informal social networks, as discussed in a previous section of this chapter.

### 6.5.7 Adaptability

Flexibility and adaptability are one of the hallmarks of the way ActewAGL carry out its business operations, enabling the formal procedures and work instructions to be enacted informally (Mode 2). This adaptability results from the processes, which allow flexibility at certain points, and from the informality of the tasks associated with the overall stable historical business functions of the organisation. This can be seen in the license certain individuals have to experiment with the systems, in the willingness to adapt routines and in the ability of the organisation to adapt to a crisis situation.

#### 6.5.7.1 Adapting the System

Many of the staff in the Logistics Branch have an experimental attitude in relation to the technological systems; these attitudes are informal but enable the formal systems to be dealt with more effectively. Over the years various technological disasters including failed upgrades, the system completely immobilising the organisation and it taking over two years to get it running properly have meant that some people in Logistics have learnt to experiment with the systems in order to achieve outcomes. As colleagues noted, "you tend to get a bit of frustration with how the system works and how it is under utilised", and the best way to deal with it is to "to get in and play around with the system", to "read through all the manuals and the documentation behind it and look it

[95] This may have been due to the fact that those people who left during my stint in the organisation either simply transferred to another area in ActewAGL or were still in contact with the organisation, thus people tended to utilise informal strategies and phone the person.

up, analyse it to see if it can be done." These changes often occur through individuals finding "the system painful and so search[ing] out alternative ways of doing things" or "try[ing] to adapt and evolve [the system] ahead of [the system] itself". This occurs in both Procurement and the Warehouse, with a couple of the more technologically savvy people being motivated to suggest changes or to find work-arounds that might, for instance; provide an easier web-based view rather than a cumbersome report format, implement auto-payment so that clients are automatically paid by EFT once the item has been receipted, create processes whereby purchase orders are auto-faxed to suppliers without people having to spend time doing so on a daily basis, create blanket agreements rather than having to go out for a request for quote every time, or explore the possibility of having pictures of items attached to the stock codes.

This ability to experiment with and adapt the formally imposed technological systems (Mode 1) is a great strength of Logistics, enabling the organisation to better use the technologies they have adopted (Mode 2). These technologically savvy people share the benefits of their knowledge and experimentation with others, which results in the system being able to be accessed in numerous ways. Those not so comfortable with experimenting often will make suggestions to those who are and they will attempt to work out ways to change the system to better suit organisational needs. Thus within the confines of an off-the-shelf product, there is a great deal of informality and flexibility. Some of this flexibility can be seen even in the way that folders have been created for everyone in Logistics so that they all have their same view on the screen and that superfluous information is minimised. As my ethnographic notes demonstrate, the

extent of the internal systems adaptations only became obvious on the day before the October 2003 upgrade[96], when

> it was necessary to remove the Logistics adaptations and the folders with our preferences in them thus making ordinary processes difficult with lots of superfluous information and words that don't mean anything. People are very familiar with the set up that the Procurement system gurus have assigned, so much so that entering invoices is something they do for a large part intuitively and thus when the format is different they have to think about it a bit more. The folders ordinarily have been adapted to suit client (internal) needs better. Various colleagues and myself all sought help from others to try and reclaim some of the stability / familiarity of the previous arrangements.

Such experimentation is encouraged in Logistics and contributes to the perception of Logistics being the 'go to people' at the forefront of technological innovations and the holders of the knowledge-base. Internally comments such as, "you only learn by making mistakes" shows the acceptability of experimentation. Experimenting with the system is both seen as a necessity, and a challenge embraced by some staff, particularly those who are more proactive. From "ha[ving] an issue, … look[ing] at ways it could be resolved, if it can be resolved and then the implementation of it", it has become part of the culture of Logistics to try and change the constraints of the system. The people willing to experiment with the technologies have developed know-how and know-what in the experimentation of they systems, and provide a valuable service in that they act as hubs in the social network, connecting people to other ways that the technology could be used and alerting people to the possibility of changing the system or at least making suggestions for changes. Indicative of the strength of the informal network, most people have a fairly good idea of whom they should go to if they have changes to suggest, although again this is informal know-who. Over time the knowledge-base expands and the newfound knowledge becomes collective and part of the organisational memory.

[96] This upgrade was done in-house and completed successfully after a great deal of experimentation and testing on the part of a couple of team members from Logistics and Finance. The reason this was done in-house was that other upgrades had been done by consultants or by the suppliers of the accounting package and these had failed.

The culturally held acceptance of the value in experimentation becomes declarative knowledge.

Often the experimentation and change of the technological systems is dependent on the staff having someone to demonstrate a new way of working. It is not sufficient to have received written, codified information or instructions to do so, mainly because most people learn by doing and from being shown – in other words, by informal means. This knowledge is tacit but can be made explicit, but largely relies on the transfer of know-how, know-what and to some extent know-why. Significantly, the people in Logistics who are most heavily involved in changing the system also have an element of teaching / training in their jobs, be it internal training, informally showing colleagues how to do tasks differently or going out to the organisation-at-large to demonstrate changes. As a result of doing a frequent and repeated task and of experimenting with the systems, certain people within Logistics are able to pass these improvements on to other people or other work teams, thus contributing to what Dixon calls 'near transfer' of knowledge (2000) which then became institutionalised and collective.

#### 6.5.7.2 Adaptability of Routines

In ActewAGL people frequently make changes to processes and routines to facilitate smoother operations or to better suit the needs of internal clients, as discussed in the routines chapter. These changes are quite often not documented or formalised but are passed on in the knowledge transfer that occurs with training or when individuals show a colleague a short cut or alternative way of completing a task. In Accounts Payable, for example, the staff have changed the routine to include the patient's name in the invoice number field as well as in the description field when paying invoices from doctors. This

change of routine accommodates the poorly designed invoices of doctors, which often do not have invoice numbers on them because doctors do not have to pay the Goods and Services Tax (GST). Such a change was adopted due to the realization that completing the task in the same way as all the other invoice payments creates problems later on when doctors follow up on accounts because the routine way of entering the invoices means that one is unable to locate a particular patient.

Internally people use their discretion to adapt routines to better suit the needs of internal clients and so create a smoother operating environment. Sometimes people in Retail or other areas ring up requesting instant payment for a customer, although the cheque run was about to be run or the time had passed when all of the cheque requests had to be in. As a favour to the person ringing up, sometimes people would put the item through anyway or "do a bodgie[97]" in order to facilitate immediate payment. Such arrangements are examples of informal relations and reciprocity (Dalton 1959), often reliant on know-who and dependent on the know-how of the people in Accounts Payables. They provide an example of how routines can be situationally adapted. Such adaptations are not directly endorsed by the organisation, are not documented and occur at the discretion of the person involved, resulting in increased efficiency.

Adapting organisational routines increases organisational efficiency, but not equally for all parties, sometimes collective action and power wielded by certain groups, such as the field crews, creates and changes a routine and represents truces, which are collective in nature. Roy (1954) discusses the collective action of people in a machine shop and how these actions, although they could be seen to be subversive of management,

[97] Colloquial expression meaning, to repair superficially or remove temporarily any obvious defects.

became routines, so much so that management decrees on some issues were predicted to have a short life span. A similar collective action and predictability can be seen in ActewAGL in the actions of the field crews. When it was decided "to try and monitor who comes in [to the Warehouse] and why they are here", it was half expected that the field crews themselves would balk at and possibly try to sabotage the monitoring process. Sure enough the field crews changed their behaviour, a change which in itself became a routine, that is, of either boycotting the process altogether or coming in and displaying a certain recalcitrance about filling in the forms, to the extent of it becoming what I note in the power chapter as dissonance. One informant complained that

> "you get 'Santa Claus has arrived' and all these sorts of things – it is bloody difficult to try and get information so that you can identify where it is that we can put our resources and try and overcome the problem".

Certainly this behaviour, although a changed behaviour, carried all the hallmarks of a routine in that it became repeated, regular and predictable. Such actor-initiated changes can be seen in this extract of my ethnographic notes.

> On three occasions today the guys asked the field crews to fill in the sheet monitoring why they were in the Warehouse (as placed there by the head of field services). On each occasion the [field] guys made some snipe about who they could be today and what they could be doing. They mused out loud saying things like 'Captain Cook', 'Bugs Bunny', 'skinning rabbits' etc. They were reluctant, in-fact downright recalcitrant about doing it and the Warehouse guys didn't push being, as they were quick to note, 'not policemen'.

Yet, just as Roy (1954) and Dalton (1959) note, these informal routines are not just about the 'joy' of stopping management initiatives, they are part of a larger set of power relations and protecting certain privileges that are considered a right. This will be discussed further in the power chapter, but for now it is sufficient to highlight this as one of many examples, both subversive and for improvement, of the adaptability of organisational routines. Informally actors change their own routines in response to outcomes of previous routines, as discussed by Feldman (2000).

#### 6.5.7.3 Adaptability in a Crisis

One of the hallmarks of ActewAGL appears to be its ability to adapt quickly to crises, to get over them and the keep on doing what they do well, that is providing electricity, water and gas to the community. This is discussed in the routines chapter in relation to ActewAGL's ability to work well together during bushfires, storms and other such natural disasters but then to carry on "as if they never happened".

Thus one of the informal characteristics of ActewAGL, as discussed in the ActewAGL chapter, is that they know what needs to be done, do it and then move on, rather than dwelling on what has been. This is a desirable if not necessary characteristic for utilities to have. This relies on strong path dependency, organisational memory, know-how, know-what and procedural knowledge embedded in the infrastructure and the organisational routines. Assuming that informality is represented through behaviours which are not written down, are not formally enforced by the organisation and which incorporate some kind of choice involved in the following of them, it follows that although adaptability is a mode of behaviour, that is it is an informal behaviour (Mode 3) which results from the formal procedures, industry constraints (Mode 1) and thus is enacted between the two (Mode 2).

## *6.6 The Usefulness of the Ethnography of Knowledge on the Informal / Formal*

In addressing the research questions 'does the lens of knowledge on an ethnography help to deepen the understanding of specific aspects of the social setting' and 'how useful is the Ethnography of Knowledge in providing an understanding of aspects of the social setting such as in/formal', the Ethnography of Knowledge is a useful concept in

studying informal and formal ways of getting things done in an organisation. Informality and formality are reliant upon individual social relations and patterns of action[98], therefore combining observational techniques with knowledge as shown through actions enables one to see these as properties of action. Further there is a strong correlation between tacit knowledge and informality and explicit, often codified knowledge and formal aspects.[99] The Ethnography of Knowledge is useful in allowing the observance of tacit, explicit and codified knowledge but its greatest strength in regards to this construct is that most actions, events and processes in organisations require a blending of informal and formal and that the Ethnography of Knowledge shows where these knowledge types merge.

The Ethnography of Knowledge is useful in both observing the knowledge-based actions of the social setting and for abstracting to the construct of informality and formality. The knowledge primarily associated with informal is tacit, explicit knowledge along with know-who, whilst in contrast formality is characterised by explicit, codified and often procedural knowledge and know-what, as discussed. Since these knowledge types are so clear cut, the Ethnography of Knowledge not only allows easy observation and categorisation of the knowledge types at a local level but also allows an abstraction to the construct generally.[100] Knowledge underpins action and therefore using the Ethnography of Knowledge to view informality and formality does

[98] Many ethnographic studies of organisations end up studying aspects of the informal and formal as an indirect consequence of studying the social environment, as van Maanen (2001, p 240-3) notes.
[99] Although I have not discussed the public / private knowledge taxonomy, this correlation between tacit knowledge and informality and explicit and codified knowledge being closely related to formality, bears a strong resemblance to private and public knowledge respectively. The Ethnography of Knowledge is easily able to be expanded to incorporate other knowledge taxonomies – of which private / public could be one. For a discussion of public / private knowledge see (Matusik 2002).
[100] This clear alignment between the knowledge types and informality and formality may serve to explain why writers on informal and formal have infrequently felt the need to explore where the two merge. If the formal can be explained by codification and public explicit knowledge and the informal relates to tacit and private explicit knowledge, there is a clear delineation. This thesis has shown that most things are achieved in organisations in the middle ground but this does not have an easily classifiable knowledge type that can be used to delineate what I have called Mode 2.

not distort the understanding of the actions as the researcher moves away from the group under study. We are all able to determine degrees of formality or informality because of our social experiences and thus are able to categorise informal or formal aspects of organisations, irrespective of their closeness to the study group. Being able to understand the construct of in/formal through a knowledge-based approach in organisations will provide us with the understandings to identify which aspects of organisations are either formal or informal and allow us to begin to analyse how things get done in organisations, that is, I propose, at the merging of these two elements.

That the informal and formal merge to allow things to get done in organisations presents practical implications for managers. The implication of this research is that successful practicing managers at the operational and middle management levels need to explicitly manage both the formal and formal elements concurrently. Legally, morally and professionally managers have to operate in the realms of the formal – it is here that they are able to spend money and carry out the codified work of the organisation. However, this must be consciously coupled with the informal aspects of the organisation in order to get things done because it is the informal that allows learning, problem-solving and information transfer to occur. This research has proposed that most aspects of organisations occur where the informal and formal meet and this practically means that managers must explicitly manage the formal role and the informal structures in which they are embedded in order to facilitate getting things done in organisations.

## *6.7 Conclusion*

The in/formal aspects of organisations are often included in the literature on organisations but due to the understandability of these terms are rarely defined and

explicitly analysed. This chapter addresses the secondary research question of 'how can informal interactions and processes be viewed in an organisation', and provides a contribution to the in/formal literature in that it explores these concepts and does so using my three-mode model for looking at in/formality in organisations. Further, it contributes to the literature by differentiating from the exploration of informal as social networks / relations (as is implicit in much of the literature on informal / formal) to include other elements of the informal / formal including processes, events, structures and modes of behaviour.

This chapter has explored and ethnographically illustrated the proposition that both informal and formal aspects have to exist in organisations but that mostly things get done where the two meet (Mode 2), that is, through a combination of formal and informal elements. Rarely in an organisation is something purely formal or purely informal, although classifying them (or attempting to – see Figure 6.2) enables us to more clearly see this. This is explored through a model which presents the three modes, the formal, the informal and the way that the organisation executes action through the formal being enacted informally or the informal being supported by the formal. Most interactions, events, processes and systems within ActewAGL occur in the second mode. The chapter has explored this concept through ethnographic examples in relation to ActewAGL using examples of the organisational ownership and structural regimes, social networks, governance structures including KPIs, work instructions and procedures, characteristics such as good corporate citizenship, problems-solving, adaptability, communication and feedback processes and the decentralisation of systems including the technological systems showing how the organisation is largely driven and operates informally.

Through using knowledge as a lens to further explain the ethnographic account it is possible to gain a greater understanding of the environment under study and to begin to further explain the way actions in organisations can be both informal and formal at the same time, allowing work to get done in the organisation.

# 7 Chapter 7 – Change

## *7.1 Introduction*

"It is impossible to think about leadership, motivation, organisational behaviour or roles without thinking about change" (Goodman and Kurke 1982, p 1). In other words, to study organisations and organisational characteristics is to study change. This chapter ethnographically studies change at ActewAGL.

ActewAGL is characterised by fragmentary change, yet it does what it does well and continues to decimate the competition. Rather old-fashioned views imply that change initiatives are a complete event, closed at the end and successful. More modern views recognise that organisational change is continuous and open-ended and that a culture that is able to adapt to changing constituents and environments is more likely to ensure ongoing improved performance (Kotter and Heskett 1992). ActewAGL bears testimony to this because despite continuous fragmentary change it is a very successful organisation.

This chapter addresses the fragmentary nature of organisational change at ActewAGL from an ethnographic perspective and so addresses the secondary research question of 'what are the characteristics of change in ActewAGL'. "Ethnographies have always been written in the context of historical change however, change and the larger framework of local politics have usually been treated in separate theoretical and conceptual discourses" (Marcus 1986, p 165). Through taking an ethnographic approach to the study of organisational change, it is possible to situate change in its historical and socially constructed boundaries, and to see that, as the literature on organisational change would predict, organisations are undergoing continual change. The ethnography

of ActewAGL illustrates change as not only ubiquitous but also continuous, splintered and disjointed with little long-term follow through to completion of change programs.

This chapter continues to examine the appropriateness of the Ethnography of Knowledge in organisational social settings. It connects change with power and politics and links with the other chapters using knowledge as a lens. It also shows that where knowledge is useful in providing an understanding of routines (Chapter Five) and the way the organisation is driven informally (Chapter Six), it is less useful when looking at change, where the core knowledge-base changes very little, in spite of changes to almost everything else in the organisation. This, like all of the chapters explores the findings of significant themes encountered in the fieldwork, links these within the context of ActewAGL and explores the literature associated with the theme.

The chapter shows that within the organisational structure and ownership arrangements, fragmentary change from both bottom-up and top-down are found in ActewAGL. Change initiatives incorporate structural, technological, and individual change, moving and even changes in the provision of core products. Such change is due in part to the organisational structure of the organisation, the plural power bases at the top, and a moderate, almost invisible corporate strategy. Organisational participants cope with these changes in various ways, including adapting routines, ambivalence, acceptance, reliance on stable technologies and organisational path dependence and making individual changes at levels over which they have power and influence. Such strategies enable the actors to make sense of their environment and to commit (Weick 1995; Weick 2001) to routines that either adapt to the changing environment or reinforce the underpinning stability of utility companies. These coping mechanisms, reinforce

existing power relations, create new ones, are socially constructed, embedded in and driven by the knowledge of the organisational participants and evolve in part due to the way the organisation is being driven informally.

This chapter will begin by discussing the nature of the fragmentary initiatives in ActewAGL and will place them in the context of the body of literature on organisational change. The change literature is vast and sprawling and thus I have incorporated a discussion of the literature prior to exploring my ethnographic examples in order to partly demonstrate the messiness of the literature and partly because in this instance the ethnographic account supports the literature. Using ethnographic data, I will illustrate the types and nature of change most prevalent in ActewAGL, and how change is both bottom-up and top-down. The exploration enables me to make suggestions as to how the organisation continues to function despite the fragmentary nature of change.

## *7.2 Change and Fragmentary Change at ActewAGL and in the Literature*

*Change is the transition* (Milligan 2003) *or the modification or alteration from one state to another* (Goodman and Kurke 1982, p 1; Griffin and Pustay 1998, p 502)*, it can involve almost every aspect of our socially constructed world including attitudes, beliefs, behaviour of individuals or groups, organisations, technologies or ways of doing things*. Yet this definition implies that each move from one state to another is completed and bedded down. In fragmentary change the change efforts may occur without being complete and entrenched.

Despite the commonly held view of utility companies being stable, within ActewAGL there exists a constant frothing, bubbling ferment of fragmentary change, which is not immediately obvious when viewed from outside the organisation. When viewing utility companies from external to the industry they appear stable, with little change to the core technologies, functions (Sutcliffe and Weber 2003; Van Vliet 2003) and knowledge-bases, yet from *within* the frequency of internal change becomes evident (Nelson 2003). This is similar to the way routines, discussed in Chapter Five, can be seen externally to be stable, yet when viewed from within they change, particularly in how they are enacted. Observational methods enable one to see the change from within, bringing to light change where stability is evidenced with other methodologies.

From the perspective of a participant observer in ActewAGL it is possible to identify changes throughout the organisation, many of which are fragmentary in nature and thus share a number of characteristics. Some of the characteristics of fragmentary change include: that changes addressing the less resource intensive symptoms rather than problems, are short-lived, incomplete, insufficiently resourced, have no strong champion behind them and do not really allow for reflection or double loop learning (Argyris and Schon 1978; Argyris 1982). At ActewAGL examples of this type of change include modifications to the systems, organisational restructures, moving and refurbishments, adjusted processes and the organisation seeking and undertaking new business ventures.

For change to be embedded, organisational learning needs to occur, often dependent on the presence of a strategy supporting the underlying organisational structure. In the case of ActewAGL, as discussed in the ActewAGL chapter, the stable nature of the business,

the duality of both government and privatised ownership with its four bosses above the CEO, and the loyal customer base means that the strategy is not always immediately obvious and nor does it need to be. All of these things mean that change of a fragmentary nature is almost inevitable but that the core business remains stable even if changes to various aspects of the organisation occur.

Such constant fragmentary change within the organisation allows ActewAGL to develop abilities to continuously adapt and so cope with a changing and competitive society, this bears some similarities to the continuous transformational model of change discussed in the literature (Burnes 2000). The difference is that at ActewAGL there does not appear to be the 'chaos' characterised in the literature because the environment in which utilities exist is very stable and path dependent.

Where the changes are constant and fragmentary, the organisation fails to commit to the changes. Commitment implies that the attitudes or structural conditions become "irrevocable or difficult to change" (Staw 1982, p 101-2). This is obviously not the case at ActewAGL where a series of decisions result in an often flexible course of action (Staw 1981, p 578). A lack of commitment results in a degree of ambivalence about the change and provides individuals with an arena in which to make changes that counteract or supplement the changes imposed, retrospectively rationalising (Staw 1981, p 584) (or counter justifying) organisational decisions. For change to be embedded and thus move from being fragmentary it must be formalised and accompanied by significant cultural change which includes change in the organisational know-how, know-what, know-why.

In ActewAGL change also occurs at a lower level, that is, in the business units. Internally, at least in Logistics, these changes are less fragmentary, possibly because the core branch functions often do not change very much. Many of the changes at this level are the result of individual experimentation. They are embedded in the social structure that informally operates within the branch, as discussed in the in/formal chapter. The changes implemented at the business unit level appear to be more ongoing, however, because the branches are affected by the changes that are imposed by the organisation, even these changes may become fragmentary, particularly in relation to the implementation of systems or organisational restructures.

ActewAGL does not exclusively 'fit' with a particular model of change presented in the literature but rather supports my premise that change is contextual and that organisations adopt change models that fit particular circumstances. There is no one-size-fits-all solution.[101]

This section has introduced change at ActewAGL, which is situation specific, as the change literature would suggest. In the following section I will present an overview of the change literature followed by examples from my ethnographic data.

[101] This lack of 'fit' with various change theories is evident in ActewAGL. For instance, Lewin's (1952, p 228-9) model proposes planned change revolves around unfreezing, moving and refreezing in a desired state. This does not seem appropriate in ActewAGL because the flow of initiatives is so rapid and unrelenting that there is no time to refreeze before it is changed again or another initiative replaces it. Similarly (or conversely) the organisation is quite stable and slow to react and thus they also do not categorically fit with reactional change but nor do they change in a fundamental manner such as the continuous transformational model of change would suggest. Thus I suggest that they adopt aspects of various models of change in a situationally dependent way.

## *7.3 Organisational Change in the Literature*

Despite the vastness of the change literature "there is no one, all-embracing, widely-accepted theory of organisational change" (Dunphy 1996, p 541). Change and change management is an integral part of organisational literature and as such "it is not a distinct discipline with rigid and clearly defined boundaries. Rather, the theory and practice of change management draws on a number of social science disciplines and traditions" (Burnes 2000, p 258) and cuts across a number of areas in organisational theory. As such, the literature is vast and relatively unordered. It is impossible to view organisational change from one perspective as different change strategies and typologies may be present in any organisation at any particular time, and these may be adjusted over time. Some of the more contemporary change literature is indeed advocating views on change that reflect this combinational approach (Orlikowski 1996), or of selecting change strategies depending on the situation (Beare and Millikan 1983; Dunphy and Stace 1988).

I propose that there is *no one way* to view organisational change, nor the impact it has on an environment, and that change strategies and processes will vary in an organisation depending on the environment, internal and external forces and the stage of organisational life. Similarly, responses and resistance to or acceptance of change are also situational. Like organisations, which can be many things at once (Morgan 1986), change can also be many things at once in an organisation.

There are a number of typologies and models of change, stemming from a few key areas. Such typologies form one level of the literature on change, being descriptive attempts to catalogue types of change in terms of how that change manifests itself. The

other type of literature on change attempts to classify change in terms of concepts such as turbulence or uncertainty and thus how change impacts on the environment (Morgan 1986, p 267). The following section will discuss some of the main extant theories in the organisational change literature in order to situate the ActewAGL study.

### 7.3.1 Organisational Change Typologies and Approaches

Historically, the study of change in organisations began with identifying interacting variables of change including Leavitt's identification of four variables for change being task, people, technology and structure (Leavitt 1965 cited in Barnes 1967, p 59; Beare and Millikan 1983, p 48). Through people, power is closely associated with change and as part of the realisation of power, the concept of planned change was developed and included as part of the typologies of change developed by Bennis 1966 and Greiner 1965 (cited in Barnes 1967, p 61-2). Bennis's typology included 1) planned change, 2) indoctrination change, 3) coercive change, 4) technocratic change, 5) interactional change, 6) socialization change, 7) emulative change and 8) natural change. Griener's in addition included structural change, group change, change by decree and change through training (Barnes 1967, p 61-2).

*Planned change*, the first of both Bennis and Greiner's typologies, is change involving carefully thought out processes for change anticipating future difficulties, threats and opportunities (Orlikowski 1996, p 64). It generally involves a 'change agent' (Barnes 1967, p 60) who is either internal (often a manager or other leader in the organisation) or external to the organisation (Kotter 1996; Orlikowski 1996), is committed to increased organisational effectiveness, and is aware of cultural constraints. Planned change initiatives, according to the OD (Organisation Development) school of thought,

promotes the democratisation of organisations through power equalisation (Burnes 2000, p 265), so increasing organisational effectiveness through improving quality of life of participants (Alderfer 1977, p 197). Planned change is closely associated with *intentional change of an episodic nature* (Weick and Quinn 1999, p 371). Under the auspice of planned change, a number of variations have developed. These include the *rational, strategic,* and *action-orientated approaches* (Brewer 1995) sometimes called *reorientation* (Nadler and Tushman 1995, p 502), the *power-legislative / coercive approach* attempting to change behaviour, the *re-educative approach* (Chin & Benne 1976 cited in Beare and Millikan 1983; Burns 1993) often requiring *recreation* by changing core values (Nadler and Tushman 1995, p 503) and *structural change approaches* (Robbins and Barnwell 1989). The concept of planned change evolved from Lewin's original analytical approach[102] and moved to incorporate the more human centred, "practitioner-orientated variants which have been developed by the OD profession subsequently" (Burnes 2000, p 277). The approach incorporated aspects of the Group Dynamics school of thought[103], attitudes stemming from the action research methodologies Lewin had developed and an underlying belief that change was part of the group environment and thus group attitudes needed to be changed in order to embed change (Burnes 2004) – thus planning was instrumental in this change of attitudes.

Organisation Development (OD) theorists tend to see organisational change as being a process owned by the practitioners (Burnes 2000) consisting of continuous learning with an emphasis on gradual, *incremental change* (Dunphy and Stace 1988). The OD theories revolve around openness, empowerment, and collaboration with the aim of

[102] Lewin's (1952, p 228-9) three-step model of change proposed that planned change involved *unfreezing* or confrontation meeting or re-educative process for those involved so as to convince the participants of the need to change, *moving* to a new state by acting on the results of the first step, and then *refreezing* or restabilising the organisation at a new state.
[103] Lewin was also instrumental in the Group Dynamics school of thought.

obtaining increased organisational effectiveness. Emphasis on the socio-technical environment (Alderfer 1977; Brewer 1995), the people and the study of organisational culture situates the OD school alongside the Human Relations movement, which built on the work conducted in the Hawthorne Experiments (Roethlisberger and Dickson 1939; Barnard 1968 [1938]; Mayo 1984 [1949]). It is widely agreed that OD has advanced organisational studies and has contributed to the change literature through their emphasis on incremental change (Dunphy and Stace 1988) and recently through a shift towards viewing change as being organisational or system wide (Burnes 2000, p 274). Yet, whilst the contributions of the OD school have been recognised, it like many approaches to organisational change cannot be viewed in isolation.

Despite the contributions of OD theories of change, the reality of much organisational change is that issues of rationality, human empowerment and ownership of the change are often periphery. Power and politics, outside forces, informal networks and historically grounded organisational routines all influence and even create organisational change. Pfeffer (1981; 1992) attributes power struggles within organisations as being a significant impetus for change programs, perhaps even more so than through rational decision-making (Burnes 2004, p 8 web version). This reflects the views of the *Processualists* who reject change as being recipe driven with single causal relationships but attribute change more to a "complex and untidy cocktail of rational decision processes, individual perceptions, political struggles and coalition-building" (Burnes 2004, p 8 web version). As Dunphy and Stace note, change as the result of massive organisational restructure in the form of mergers, takeovers, closures and so forth, is often enforced from outside and is "often combined with a hidden agenda of political manoeuvres" (2000, p 317). Such *coercive and dictatorial change* is often not only enforced but occurs in response to an outside situation.

Often organisations are forced to react to situations imposed on them, thus resulting in *reactive change* which occurs in *response* to perceived threats, difficulties or opportunities (Nadler and Tushman 1995, p 502; Bartol et al. 1998, p 262).[104] Reactive change sometimes sits in contrast to planned change. However both *planned* and *reactive changes* can be *transformational*, having an effect on an organisation's overall direction, *methodological*, whereby it has an impact on how things are done or *tactical* representing midcourse changes in direction (Thompson 1994). As with much of the change literature, there is no clear separation between where one sort of change ends and another starts. Often planned change and reactive change can overlap with some planned change occurring as part of reactive efforts and with both constituting an overall move to a new organisational state.

A similar overlapping or converse polarisation can occur between *incremental and transformational change*, (which some scholars refer to *evolutionary and revolutionary change*) (Miller 1982 & Greiner 1972 cited in Dunphy and Stace 1988, p 322). Incremental change occurs when it is possible for an organisation to predict its future, there is sufficient time for change efforts to occur or there is a misfit creating a situation where the organisational future is in doubt if ongoing changes are not made (Dunphy and Stace 1988). Incremental change is often imbued within a general framework of strategy (Nadler and Tushman 1995, p 502). In contrast transformational change occurs when the environment changes or when the organisation fails to 'fit' and thus drastic, often quick and discontinuous change processes must be employed (Dunphy and Stace 1988). Yet, as with many organisational change models, sometimes it is necessary to

[104] Planned change *anticipates* future threats and opportunities as discussed, whereas reactive change occurs in *response* to actual (or imminent) threats, difficulties and opportunities.

employ a combination of different types of change or to exercise different change strategies at different times. This is particularly the case if an organisation's stability is threatened, or if aspects of an organisation do not align with the environment in which the organisation operates (Dunphy and Stace 1988; Ivancevich and Matteson 2002).

### 7.3.2 Schools of Thought on Change Management

Burnes (2000, chpt 7) notes, much of the change management literature stems from three schools of thought. The first is the *Individual Perspective school*, in which followers broke into two camps – the *Behaviourists* who viewed behavior as resulting from the individual's interactions with their environment and the *Gestalt-Field Psychologists* who believed that whilst the environment is an influential factor, this is only part of the equation with reason being the other.

The second school of thought came from the *Group Dynamics group* who, believed that group structures modify individual behaviour and therefore groups must be the focus for change, not the individual. This group incorporated many of the cultural perspective (Ott 1989) areas of study including the necessary analysis of norms, roles as patterns of behaviour and values.

Building on other areas of influence the *Open System School* developed as the third school of thought. This group saw organisations as being composed of a number of interconnected subsystems and that a change to one part of the system will have an impact on the others and thus on the overall performance of the system. This school of thought has received both considerable criticism, probably because systems-thinking is

quite difficult for some people to see as valid theory, but also considerable support from notable theorists (Burns and Stalker 1961; Burns 1984 [1963]; Lawrence and Lorsch 1984 [1967]).

Following from these foundational schools of thought, there are, according to Burnes (2000), three current models of organisational change prominent in the literature. These are 1) *the incremental model of change, 2) the punctuated equilibrium model of organisational transformation* and *3) the continuous transformation model of change*. The first of these models of change represents change as building on other changes and events with a singular focus, that is where "individual parts of an organisation can deal incrementally and separately with one problem and one goal at a time" (Burnes 2000, p 254). The second model builds on the idea that there may be periods of stability and "depicts organisations as evolving through relatively long periods of stability … in their basic patterns of activity that are punctuated by relatively short bursts of fundamental change" (Romanelli & Tushman 1994:1141 cited in Burnes 2000, p 255). This model characterises change as "rapid, episodic and radical" (Orlikowski 1996, p 64), usually as a result of changes in the internal or external environment. The final model, the continuous transformational model of change, assumes that "in order to survive, organisations must develop the ability to change themselves continuously in a fundamental manner"(Burnes 2000, p 255).

### 7.3.3 Change Models at ActewAGL: Continuous, Incremental and Adaptive Transformation

The final model of change above is representative of the sort of change that is prevalent in ActewAGL, although, given the inability for one single model to fully represent all

aspects of organisational change in any given situation, as discussed previously, there are elements of all of the models in ActewAGL. In ActewAGL change is continuous, however the organisation is also characterised by stability, at least in their core business functions. Dunphy and Stace (2000, p 327-8) categorised change into four typologies and noted that electricity generation and supply companies in Australia are characterised by incremental change of a coercive rather than collaborative nature. ActewAGL appears to fit with their categorisation, in that most of their changes are continuous and incremental and much of the change is imposed from the top-down.

This view of electricity companies is correct from the outside, however in the case of ActewAGL, when observed from within, there is also bottom-up change implemented through individuals trying to make sense out of the social and technological environment in which they operate. This differentiation between inside and outside is similar to that found by Orlikowski, (again through observational methodologies). The changes are "grounded in the ongoing practices of [the] actors, and emerges out of their (tacit and not so tacit) accommodations to and experiments with the everyday" (Orlikowski 1996, p 65) aspects of their environment. Recent literature supports this view that individuals, often at operational levels of organisations, do reflect on and change aspects of their environment (Tsoukas and Chia 2002; Feldman and Pentland 2003). As discussed in the routines chapter, from within one is able to see that routines are changed (Pentland 1992; Pentland and Rueter 1994; Feldman 2000; 2003; Feldman and Pentland 2003) according to how tasks are accomplished whereas from without one sees stability. The way change can be classified depends on where one sits. Accordingly,

> "the contrast between episodic and continuous change reflects the differences in the perspective of the observer. From a distance (the macro level of analysis), when observers examine the flow of events that constitute organizing, they see what looks like repetitive action, routine and inertia

> dotted with occasional episodes of revolutionary change. But a view from closer in (the micro level of analysis) suggests ongoing adaptation and adjustment. Although these changes may be small, they also tend to be frequent and continuous across units …" (Weick and Quinn 1999, p 362).

The process of *ongoing adaptation* (Orlikowski 1996; Moorman and Miner 1998) and adjustment implies that there is some kind of reflection or learning process going on with regards to organisational change. Such learning is identifiable in Lewin's model of the three stages of change being unfreeze, move and refreeze (Lewin 1952, p 228-9). This model of organisational change has endured for a long time and holds continuing validity (Burnes 2004), although some theorists have found some gaps in the model, particularly in the relationship between the individual and the process (Argyris and Schon 1978; Argyris 1982), the perceived simplicity of the model (Peters and Waterman 1982; Kanter 1983), the nature of the change initiatives the model seems to favour and the perception that the model advocates top-down change rather than bottom-up (Burnes 2004, p 11 web version).

Yet, when change occurs frequently in an apparently unstructured manner, such as it does at ActewAGL, I propose that there is no time to refreeze or learn from the change prior to it being changed again. Thus the refreezing process of bedding down the change often fails to occur, so preventing reflective double loop learning from occurring (Argyris 1982). In this situation three things happen; 1) ongoing, fragmentary change becomes part of the culture of the organisation 2) there is a tendency to fall back on routinised aspects of the organisation, in the sense that historical path dependencies guide behaviour (Levitt and March 1988) rather than reflective and adaptive learning and 3) change builds on change. When this occurs the organisation tends to address the symptoms as opposed to the problem (Senge 1990; Sterman 1994) because addressing symptoms requires less resources, embedding and strategic focus than does fixing the problem.

### 7.3.4 Resistance to Change

Most of the literature on change recognises the potential for resistance to change, either outright or subversive, if the change does not fit with the culture of the organisation, of the informal groups within the organisation or of the norms, values and beliefs of the individuals affected by the change. Sometimes resistance to change can be encountered even when the changes appear to be beneficial. Much of this resistance may come from the middle and senior managers, particularly when they see the culture of the organisation threatened or their own status, power or beliefs challenged (Burnes 2000, p 171). Resistance to change can cause routines to persist (Nelson and Winter 2002, p 30). Some scholars see the very act of resisting change as a way for individuals to assert their own ongoing power (Kanter 1977, p 155) or at least to prevent them from losing face. Some of the literature tries to rationalise why resistance to change occurs (Coch and French 1968; Kanter 1983; Burns 1993) or to try an provide a recipe for overcoming resistance (Robbins and Barnwell 1989; Rye 1996; Bartol et al. 1998). Others portray resistance as an inevitable aspect of organisational change because the way results of change affect people or their available resources are difficult to predict (Feldman 2004).

People in ActewAGL are not so much resistant to change but simply allow it to wash over them with the explicit, but not codified, knowledge that most of the initiatives will be changed again before the change has had a chance to embed itself. If such ambivalence is resistance then it is a very passive resistance.

The change literature is very broad. I have not presumed to be comprehensive in its analysis in the above section, but have outlined a few of the influential turns the theory has taken. This literature is situational because every organisation and the effects of change in each environment are unique.

## *7.4 Change in ActewAGL*

The following section illustrates, through ethnographic examples, the nature of change and stability on such an organisation, ActewAGL, demonstrating that much of the change, both bottom-up and top-down, is fragmentary. I will endeavour to show why this is the case and how the participants cope with change of this nature. Continuing the theme of the thesis (both in terms of the Ethnography of Knowledge and the theoretical constructs themselves), the chapter shows that when viewing an organisation through an ethnographic perspective it is not possible to neatly classify change initiatives into clearly divisible types.[105] The changes are historically dependent, socially constructed and each of the initiatives may equally validly be classified into a number of change types, depending on external, internal factors, on power relations and on the stage the change initiative is at, both in terms of the change and in relation to organisational life.

### 7.4.1 Stability and Change at ActewAGL

ActewAGL is able to continue doing what they do well, that is providing core utility services to customers, without having to undergo radical transformational change, because of the stability in the infrastructure, the core technologies and in their customer

[105] In some of the other chapters (eg Chapter Five and Chapter Eight) I have taken an approach of highlighting the roles and characteristics or power taxonomies, respectively, in italics. I do not do this in the ethnographic section of this chapter for the explicit reason that the types of change blur and mesh continuously and that they cannot be neatly classified into types of change at the exclusion of others.

base. The changes that do occur can be fragmentary because they do not affect the provision of these core services. This stability of core functions and technologies means that the knowledge-base of the organisation, in terms of those core functions, is relatively stable.

Through their responsibility for the distribution of water, electricity and gas to the ACT community, ActewAGL work to a stable business proposition which has remained much the same since the early 1900s when it was decided to build a city on the limestone plains and a public body was established to lay the infrastructure, as discussed in the ActewAGL chapter. ActewAGL has a 'natural monopoly' with regards to water, as does any water company that serves a particular area (Van Vliet 2003, p 37). The technology surrounding the infrastructure, that is the way water, sewerage and electricity are distributed throughout the city, has not changed significantly (Donovan 1999). Thus in the case of ActewAGL the technological imperative for change (Orlikowski 1996, p 64) is not as immediate as it is for some other organisations that are driven primarily by the need to be up-to-date with technology. As informants noted,

> "on the water side there isn't much change, particularly since we only do maintenance anyway thus replacing a pipe with a pipe. However electricity [is] always changing. [Yet these changes are not so much to the electricity infrastructure but] … [are] brought about through OH&S issues and through the engineers and 'Techos' identifying items that can be changed, by them being approached by company representatives, by information they have gleaned at their field days and through reading their magazines. The changes manifest themselves in a variety of ways including such things as the meters on your house, for instance, we now have off peak and digital [electricity], and [through changes] in the switching gear. …The design specifications for [the 91 different types of padmounts and transformers held in the Warehouse] … change, [but the overall function and technological underpinnings remain stable]. We are in the process of standardising but from the 215kVA to the 200 and 315kVA, but what happens is if you have a variety of engineers who have worked at various utility companies, they have their favourites and so will order padmounts and transformers according to their preferences."

Thus it is possible to have a variety of different transformers and padmounts, but as noted, the underlying technological concepts surrounding their operation and that of the infrastructure, and thus the core business of the organisation remains relatively stable over time. Transformers themselves have a life span of sixty to one hundred years and

pipes last longer still. Thus there has been very little change to the technological capabilities of the organisation, because there has been little need to change. As an informant noted,

> "engineers and ex-engineers don't like change so the systems are slow to change. There have been times when we are using equipment and infrastructure that they (other utility companies) haven't used for 20 years, for example, the transformer padmounts that we have out there (indicating the yard). For ages we were using 250kVA transformers but we were the only ones, apart from a small utility in South West Queensland that were using 250kVA transformers instead of 350kVAs. [We pushed] for adopting 350kVAs because the lead time on the 250s was much longer, the cost was greater and we had to get them especially made. Same with overhead cable, but the engineers were reluctant to change. It took maybe six months to convince them to change the cable they were using. Most of the changes are pushed from us [at Logistics] rather than from them."

The core technologies produce a stable business proposition, one which is slow to change and historically path dependent, a phenomenon evidenced in studies of other utility companies (Hanford 1988; Nelson 2003). As a result of the technologies involved in the provision of water and electricity, the organisation itself is slow to change.

Like most utilities, ActewAGL is very stable and people acquire a stable knowledge-base that remains valid throughout their career. The knowledge-base associated with the core technologies is built around embedded knowledge, know-what, declarative and collective knowledge. Stability "gives rise to predictability, which in turn aids co-ordination" (Becker 2004, p 659), being particularly useful both in ongoing operations and in a crisis. When a crisis occurs, the knowledge is so firmly embedded in the infrastructure and surrounding organisational routines that the organisation as a collective entity is able to recover quickly using the historically path dependent nature of the business as a guide for refocusing, as discussed in the in/formal chapter.

A similar path dependency and subsequent stability can be seen in the way ActewAGL has a lock on the market in the Australian Capital Territory (ACT), even with the formal introduction of a contestable market – a phenomena not unknown to other utility companies (Nelson 2003). Gas has been contestable in the ACT since 1st January 2002 (nearly two years at the time that the following figures were noted[106]) and electricity has been contestable since July 2003. During this period ActewAGL has lost only eight electricity customers (of which two were businesses, one of those being a rival company, and six were residential, of which at least three had family members working for another supplier) and no gas customers. ActewAGL has acquired 6500 electricity customers from outside the ACT, including approximately 50% of the Queanbeyan[107] population and since the 1st July 2003 has acquired 780 electricity customers in the ACT. In total 14707 customers have signed up since July 2003 and ActewAGL has only lost 8. Whilst the exact reasons remain elusive, part of this success may be attributable to the ACT Utilities Act which imposes stringent constraints, ActewAGL's competitive prices, the ACT being a small jurisdiction (approximately 300 000 residents) where the cost of entry may exceed the profit gains from a 5-10% churn or because of ActewAGL's marketing efforts. Yet, whatever the reason, the fact remains that ActewAGL (or its forebears) have always been in the ACT and through that continuing relationship have acquired a degree of stability in an uncertain environment. Even ActewAGL's marketing strategy reflects this stability.[108] "ActewAGL Always" and "ActewAGL – your reliable source of life's essentials", (and even that they have

[106] Figures given in a presentation to staff on the 2nd December 2003.
[107] Queanbeyan is a neighboring town which sits on the New South Wales side of the border of the Australian Capital Territory.
[108] Part of this marketing strategy has been recently emulated by ActewAGL's direct competitors. ActewAGL have introduced a bundling arrangement whereby customers save money by signing up for three or more services (including gas, electricity, phone and internet). A recent mail out to Canberra households (Feb 2005) from a direct competitor and another telecommunications company marketed an almost identical strategy. (To which ActewAGL responded with a similar mail out less than a week later reconfirming their existing bundling deal). This indicates the innovative and successful marketing of ActewAGL. The interesting part of this strategy is that as a multi-utility (these being relatively rare) this is what ActewAGL has to offer, yet it has caused the competitors to team up with other industries to provide a similar product.

'Mother Nature' advertising on the radio for them) firmly implies that ActewAGL have always been there providing your essential needs so why would you bother changing, stick with what you know. Such a marketing strategy is socially constructed, is based on the tacit and collective knowledge of the community, yet is articulated as explicit knowledge within the organisation. At first blush this does not seem a very dynamic marketing strategy – yet, as evidenced above, it works! The stability of the competitive environment in the provision of water and electricity means that the drivers for change for ActewAGL, in the areas of water and electricity, are to keep on doing what they have been doing, utilising established know-how, know-what and knowledge embedded in the design of the infrastructure. As a consequence, changes do occur but they tend to be fragmentary tweaking organisational structure, non-core technologies, staffing or processes but not usually affecting the core business of the organisation.

### 7.4.2 Bottom-up Change in ActewAGL

Within ActewAGL some of the change is driven from top-down but much of it is driven from the bottom-up. Generally in the case of bottom-up change, (which is sometimes referred to as emergent change) (Burnes 2000), alteration occurs when individuals "tend to get a bit of frustration with how the system works", both the technological system and the processes, and so initiate changes that make their own working lives easier. Kanter (1983) and others have shown that "change in organisations often occurs locally when certain individuals reflect on their circumstances and experiences and decide to intervene to change organisational policies and systems" (Tsoukas and Chia 2002, p 579), sometimes these local changes become institutionalised. These changes tend to be ongoing and incremental, building on pre-existing collective knowledge, know-what, know-how, declarative and procedural knowledge. Often they rely on the know-who of

the person initiating the changes, knowing who to speak to, who to bounce ideas off and who can implement the suggestions they have. The changes initiated from bottom-up also tend to be implemented, at least initially, informally. As shown in the in/formal chapter, ActewAGL is largely driven informally. Initiatives can be successfully informally driven because the core business remains relatively stable.

The following section will explore some of the examples of bottom-up change in Logistics, these being possible because of the attitudes of individuals, organisational arrangements designed to counteract some problem and /or to empower people such as the self-directed work teams and because of historically endorsed structures promoting change such as the REMAP project.

#### 7.4.2.1 Individually Initiated Changes

Individuals at ActewAGL seek to improve their work practices and so initiate change through tweaking the technological systems, experimenting with and adapting different solutions, and by drawing on informal networks. As Orlikowski notes, “there is no deliberate orchestration of change here, no technological inevitability, no dramatic discontinuity, just recurrent and reciprocal variation in practice over time” (1996, p 66) and the desire to simplify complex tasks. The changes from the bottom-up are fragmentary in that they consist of small, incremental changes occurring in various parts of the system at any one time. These changes are important for the adaptive continuation of the routines and also because “over time a series of such incremental changes might then add up to some more substantial gradual change” (Becker 2004, p 660).

Certain individuals are comfortable with experimenting with the technologies until they discover a different, more efficient way of performing some task, as discussed in more detail in the in/formal chapter.

> "[If they] have a problem or have an idea [they] approach [either the internal 'experts' or the accounting package company] and ask them if they can make changes, is it possible to adapt [the accounting package] to try to do these things and they go away and try and do that."

The changes to the accounting system are mostly done in-house either in the Procurement Section or in the team specifically designated to look at the accounting system.[109] Similarly, testing for anomalies and the installation of the most recent upgrade, (after a number of failed upgrades were done by the supplier and other external companies), are also done in-house. The dismissive comment of "if the system is flawed, fix it" used by a colleague in a meeting discussing the system encapsulates the changeability of the technology and the acceptance, indeed expectation, that the capacity to implement these changes is informally within the grasp of all. Such changes are possible from bottom-up because the people at those levels are the ones with the individual expertise, the collective knowledge (Pentland 1992), the experimental attitudes and whose problems are grounded and resolved in situated practice (Suchman 1987; Orlikowski 1996).

The changes resulting from experimenting with the system occur in the realms of what Weick (1982) suggests is a loosely coupled system. That is, a system in which changes to that particular part (in this case Logistics) do not necessarily affect the whole system, or in this case the whole organisation, but in which the cost of trial and error is reduced due to the variety of the group, resulting in innovations being able to be retained and to become accumulative (Weick 1982, p 387-8). In this situation, the local unit of Logistics, in particular the Procurement Section is able to adapt to local conditions

[109] This team are situated nominally with Finance but also serve the whole of the organisation providing improvements, assistance and trouble shooting with regards to the accounting system.

without incurring co-ordination costs on the larger system. As a twist the organisation as the wider system benefits from the know-what, know-how and know-who of the Logistics group, as discussed in the in/formal chapter.

The technological experimentation of some people in Logistics increases the network centrality and subsequent power of themselves and the whole group. People throughout the organisation become aware of the skills and abilities of Logistics and they become the 'go to people' as discussed in the routines and in/formal chapters. As early adopters comfortable with the systems, they reduce the technological uncertainty of other people in the organisation (Burkhardt and Brass 1990) who then develop reciprocal know-who and refer others onto Logistics.

People in Procurement, and also in the Warehouse, constantly utilise know-who as they draw on their informal networks (Davenport and Prusak 1998), ask colleagues how to do things and discover an amalgam of alternative strategies which enable them to change aspects of failed routines. Such a failed routine is shown in the example of including the patient's name on the accounting system for invoices for medical practitioners, as discussed in the in/formal chapter. This was not done initially and is not dictated by the system, however it was implemented as a standard procedure (although not formally written down) by the people who dealt with the system after discovering imminent future search problems and working out a way to get around these problems. This is an example of how "several important aspects of a new organisation are achieved not by conscious reflection but by local adaptations" (Hutchins 1991 cited in Orlikowski 1996, p 66). These local adaptations in turn impact on organisational routines, and over time on the technology itself. Local adaptations often occur from

bottom-up, are informal, (not being written down), and draw on collective knowledge, know-who, know-what, know-how and know-why.

Over time, using the retrospective nature of sensemaking that humans employ (Weick 1995), the local adaptations become routinised in that they are enacted as repeated patterns of action with little conscious thought. The path dependent nature of the routine, and the availability and stickiness of information (von Hippel 1994) about a process results in the behaviours becoming accepted and enduring (although still flexible enough to be changed again if need be) organisational routines, as discussed in the routines chapter. When this occurs the changes become explicit, sometimes codified, knowledge, moving from individual changes to becoming collective knowledge, which is declarative in nature.

Although initially informal and practice-orientated, many of the changes implemented by individuals occur because it is culturally acceptable to experiment and because the management structures enable this. As the management feedback model Figure 6.3 – Chapter Six shows, the senior management at ActewAGL is not greatly concerned with nor informed of operational issues. There is some license for experimentation, learning and informal interactions – that is for the operational levels of the organisation to learn from and change aspects of their work over which they have control.

#### 7.4.2.2 Self-directed Work Teams

Bottom-up change can also be initiated in response to a perceived problem, such as the implementation of the self-directed work teams in the Warehouse. Where change is

implemented in response to a perceived problem it can be both planned and reactive, incremental and also part of the punctuated equilibrium model (Burnes 2000). One such example at ActewAGL was the implementation of the self-directed work teams in the Warehouse, as discussed in the ActewAGL and routines chapters. The self-directed work teams aimed to capitalise on the know-how and procedural knowledge of the staff to produce a changed work environment, which also met their needs. The background of the self-directed work teams is explained in the following two comments from informants in different areas.

> "The self-directed work teams were not so much as a result of or based around high performance work teams but around performance or at least aimed at improving performance. They came out of adversity and necessity. Various complaints had been received about one of the supervisors in the Warehouse and (especially since he came with a military background and his management style was starkly contrasted with the previous supervisor who had a very laissez-faire style and just let them do what ever they wanted - this didn't work at all). Two or three Storemen left and on leaving one of them wrote a very strong letter to the Human Resources [area and to the CEO]. This resulted in a plan from HR whereby the managers were taken off-site, the guys were taken off-site and then everyone was [taken off-site together] to discuss [the situation]. This resulted in the self-directed work teams [as a means of trying to solve the] guys very disgruntled point of view. …Basically it arose out of their dissatisfactions. [As a result of the self-directed work teams there have been some changes in attitudes]. Prior to its inception everything was management's fault but now they are more likely to blame each other and more likely to take some of the responsibility."

> "When [one of the Storemen] left, remember I told you that there were two guys that left about the same time. … One of them … was always going to leave, a very smart, self-motivated man and probably the sort of man that they need to find to run the Warehouse. He was a very good people person, lazy prick, good with people and great ideas man. To that end he'd be an ideal sort of person to have around. Getting back to [the other fellow, he had] had a lifetime in the army, he was an ex-Vietnam vet; he used to be a point man. …You know how they have a bloke who walks out in the front of all the others in armed combat. … So he has got a nervous condition as a result of all of that, and highly trained. But he was that frustrated with [the Warehouse Supervisor], because they had similar backgrounds, anyway it got to the point one day that [we] had to grab him because he was going to snap [the supervisor] and with his training I doubt if any of us could have stopped him. Very highly trained little man, and fit, very strong.
>
> Anyway, he went to the doctor and basically the army has retired him, mentally unsuitable to work. … But having said that, all the frustrations he was going through at the time, he was smart enough to write it all down. He had it drafted up by a fellow Vet who was a solicitor and send it to none other than [the CEO]. He didn't stop at the bottom but lagged all of them.
>
> So they had to be seen, …and HR got involved, they had to be seen to be making some changes and trying something different and this is where the self-directed team came into it. So it has looked like they have given it a go without ever relinquishing control. And that is the reason why it was only ever a Clayton's[110] self-directed work team. They had to make it appear like they

[110] Australian colloquialism derived from a non-alcoholic mixer drink called Claytons, "The drink you have when you are not having a drink", in this case the self-directed work team you have when you are not having a self-directed work team.

> were going through the motions without actually going through the motions. So at the same time the opportunity was there for the Stores staff to grab it but they never did."

The change effort of the implementation of the self-directed work teams required structural change. The impetus was discontent from below, based around know-who in the knowledge of who to alert to the dissatisfactions and who they were aimed at. The endorsement for the change came from both above and below as well as through the HR group. Through the explicit knowledge of prior experience, out at

> "Lower Molonglo a couple of years ago, they brought it (the self-directed work teams) on board from [in] their area and they trialed it, I am not sure for how long for or who implemented it out there, but it was implemented by some teams out there and I think they were quite happy with the directions and improvements that they were getting and I think it was suggested to us from HR that we could go down that direction to if we wanted to. They asked around, we had a few meetings and I think on the whole we decided to give it a go."

It was widely assumed that "we never really got it together and never really got the self-directed work teams working properly. It isn't working, it has never really worked, although initially I think we all wanted it too." Whilst the literature acknowledges that "not all high involvement systems produce positive results" (Lawler 1982, p 300), there was an expectation that it would. In the short term the self-directed work team did change attitudes and some behaviours, however as with many change initiatives discussed in the literature, the on-going benefits were not obvious and in the absence of such desired results, in late 2003 and early 2004, it was assumed that the self-directed work teams were "about to be shelved" and that it was about to become another fragmentary initiative. Instead, following my recommendation and after discussions and internal analysis, the self-directed work teams were maintained in a slightly modified form.

Indicative of the validity of my research, and of the strength of the ethnographic method, a number of my recommendations have been implemented. Six months after the completion of the field study, I returned to the field site for a farewell lunch in honor

of a colleague. I chatted to various colleagues for a while and as noted in my ethnographic data, "the Team Leader 'is in the Warehouse pretty much all the time now'. [The guys like this as there is] 'someone in that supervisory role, well not supervisory but advisory' [and someone to defer to] 'when the shit hits the fan' or 'when you can't get your head around something'." The Warehouse positions that once rotated are now fixed for approximately a year and no one is being rotated through the regions anymore. In order to reduce the amount of people that the Warehouse staff are required to include in processes, the forecaster has been brought in to the Fyshwick Warehouse and someone has been sent to Greenway permanently. This means that there is not so much duplication with filing cabinets for forecasting in two places and the forecaster is on the job where things are happening. As a result of the discrepancy analysis and the complexity analysis they are trying to modify and simplify the procedures. The Warehouse staff have all been given the responsibility for one procedure and they are to rewrite it, write down on the white board when they do things and so try and hone and amend the procedures. Feedback from my research allowed them to reflect and apply double-loop learning where the mismatch between the intention and the outcome is corrected (Argyris 1982, p 48). The self-directed work team moved from transformational change of a fragmentary nature to more incremental, learning-based change. It still is not perfect but at least there has been a recognition that such cultural change will take longer than a year to bed down.

#### 7.4.2.3 REMAP

Recognition of the time factors involved in long-term change is evidenced in the bottom-up change program of the REMAP project conducted in the late 1990s at

ActewAGL. As introduced in the routines chapter, and shown in these extracts of my ethnographic notes, REMAP (Re-Engineering the Materials Acquisition Process),

> "was a huge project that went on for five years. It is finished now but [a number of people who were involved or were influenced by it are] still working to the outcomes. The organisation put huge resources into the project but it 'became a bit of a dirty word because like a lot of projects' there were some inconsistencies and problems. Part of the REMAP project was to interview people and to work out how the whole organisation worked and how they would prefer to work. The project incorporated an evaluation of [various] ERP (Enterprise Resource Planning) systems. SAP (one of the systems looked at) was more process driven with little flexibility and for the 'organisation at that time, it just wouldn't have worked'. So [the ERP system that ActewAGL currently use] was chosen although it doesn't have the works management capability. Subsequently [a works management system] is currently being developed to deal with the works capacity. Many of the changes in the [current] system are due to the REMAP project. The aim of the project was to assess and re-engineer the whole way the organisation worked. … It was heavily focused on change management, and guiding the organisational direction on a number of key result areas including, design standards, forecasting and planning, logistics integration, supplier relationships, distribution strategies, support systems, empowerment and performance measurement. …. It was aimed at producing good contracts and good business relationships [across the whole supply-chain]. It pushed the need for good contracts and good business relations but … [it was still necessary to sell] the importance of contracts both internally and externally."

The project involved eight core processes that were important to concentrate on in the re-engineering of the organisation. This is pictorially represented in a wall chart which some informants noted cost a lot of money to prepare, so much money in fact that some informants opined that it did not achieve much. Of the eight categories,

> "supplier relationships was a really big one and you couldn't do that if you had everyone going out and buying whatever. So the idea was to bring Purchasing and Payments together, so we were to focus on the numbers that were going through [the purchasing process] and while we were doing that we were looking at particular suppliers that the [Purchasing Officers] were using all the time [so] that we could then approach [them], get an agreement up [and] put [the key commodities on] contract, move them over onto the [accounting] system so that everything is visible and there wasn't all this paperwork floating around the organisation. … The objective [was of] bringing all [the disparate areas] together because, [for instance]… the Contracts and Purchasing areas had the understanding or belief that they were managing this purchasing but the reality was that there was so much going outside the purchasing system."

The people involved in REMAP were mainly at the lower end of middle management, a highly influential group in change management initiatives (Huy 2001). The group utilised know-what and know-how of the system and how it worked, as well as the results of the analysis phase. They also had know-who with regards to knowing whom to speak to and whom to influence in selling the REMAP project, in order to produce collective knowledge, which evolved in codified form in a concentrated effort at

organisational change management. “There was an awful lot of change management going on in Purchasing. The change management is still going on in the Warehouse. … So, the change management was a big, big push” of the project. Such change management was accompanied by an understanding of the process for long term change (Goodman and Dean 1982, p 227), recognition of and processes for changing attitudes and structural conditions (Staw 1982, p 101) and a recognition that change is an on-going, long term project that cannot be accomplished overnight (ACTEW 1996a). This was very much planned, long term, strategic change, although like many change initiatives it can not be classified as simply one type of change at the exclusion of others.

In accordance with Bullock and Batten’s phases of planned change (Burnes 2000, p 272), the REMAP project began with an extensive period of investigation or exploration, and planned the changes over a long period of time factoring in possible resistance, stakeholder issues and concerns, resourcing constraints and communicating the desired state of change. Actions began to be realised regarding the changes in that new systems were implemented, parts of the organisation, including Logistics, were restructured to accommodate the desired change state and the emphasis on a whole-supply-chain model (as discussed in the routines chapter), and people started to work towards the direction outlined in the extensive documentation on the REMAP process.

Unfortunately, as with many change initiatives in ActewAGL, the REMAP team was unable to take the changes to the integration stage because the initiative was killed when senior management changes occurred and REMAP “became a bit of dirty word”. Despite the huge amount of time and resources put into the project,

> "it sort of felt like, … because it wasn't in favour it shouldn't be mentioned, it in someway had no validity. However a few [people] just beavered on regardless, [they] never mentioned the word [and didn't get any organisational support], but [for them, the path laid out by REMAP]… was the direction."

It continues to provide an overall direction, at least tacitly, for some areas within the organisation. The initiative has become a path dependent, historically influenced (Weick 1982, p 386), socially constructed part of organisational memory. This is evidenced not only by the ongoing direction that the process provides for some of the participants, but also by the fact that many informants referred to REMAP and the influences it had at the time.

Whilst REMAP started out as formal planned, strategic change, with a codified knowledge-base clearly identifying processes and desired outcomes, in the capacity of it being discontinued before completion, it become another fragmentary change initiative. In such fragmentary initiatives the change process is incremental and is heavily influenced by environmental events, and changes in the organisation over time – an area of change that would benefit from further study (Smith 1982, p 426-7). The influence of the REMAP project is now explicit knowledge, manifested informally, through providing ongoing strategic direction as discussed in the in/formal chapter. The same change initiative can be represented by many different categorisations of the type of change at different times in its lifecycle and can have ongoing impacts despite the face-value failure of the change initiative.

### 7.4.3 Top-down Change

Whilst some changes occur in ActewAGL as a result of bottom-up changes in work practices and through programs aimed at change management and more participative

practices, organisational change also occurs from change implemented from top-down. In ActewAGL, as in many organisations, as Dunphy and Stace note, in reality much organisational change occurs due to the,

> "dramatic effect of takeovers, mergers and closures, often involving large-scale firing of employees, and massive almost instantaneous restructuring. The strategies of change adopted in these situations are often top-down, and achieved coercively by dictates from outsiders, from new imposed chief executives, or through the charismatic leadership of a single individual using substantial institutional and personal power, often combined with a hidden agenda of political manoeuvres" (2000, p 317).

In contrast to the bottom-up change, change in ActewAGL that is initiated from top-down, tends to be more fragmentary in nature, more radical and, as Senge and Goodman (1999) note, less on-going. It bears the hall-marks of planned change with a degree of exploration, planning, action and implementation (Bullock & Batten 1985 cited in Burnes 2000, p 272), but often the implications of such change are not specifically articulated and additional changes are implemented before the change has had time to manifest itself or become embedded in organisational consciousness.

The following section will highlight some examples of top-down change at ActewAGL. There are a number of examples of such change including changes to technology, organisational ownership and structures and restructure, the CEO and changes brought about through moving.

#### 7.4.3.1 Technology

At ActewAGL, despite the potential for some changes to technological systems to occur from bottom-up, there has been a vast array of systems implemented from the top-down. Many of these systems do not talk to each other and quite a few are implemented in parallel to another system that does roughly the same thing – a reflection on the

powerful alliances of some people and areas. A rough calculation, of existing systems identified eighteen different systems which exist in ActewAGL (ActewAGL 2001a) and which are used by Logistics alone, to which I was able to add another four from my research. The implementation of the systems is fragmentary both because of the frequency with which they are changed and because at the top there is loose formal strategic direction or implementation planning.

The technological changes are usually periphery. As noted earlier, the core technologies for the provision of water and electricity have remained relatively stable over time. There is no room for experimentation with these systems, so experimentation occurs with other non-core technologies instead. The periphery nature of new technologies results in little organisational commitment to them and a cyclic pattern of fragmentary initiatives results.

One such example of a peripheral technology change is the proposed changing of the organisation's entire telephone network, to bring it in line with the services provided by TransACT, a company managed by ActewAGL as part of a management services agreement. This will be very expensive and offers no immediately apparent functional advantage but as one informant noted, "it has nothing to do with function, it is all about politics and about keeping TransACT afloat". Many of the changes are related directly to power and thus they begin life as tacit knowledge and develop into explicit knowledge when the changes are acted upon.

### 7.4.3.2 Organisational and Ownership Structure

The ownership structure in ActewAGL is complicated and ambiguous, with a number of discrete actors at the top, each with the potential to drive corporate strategic change initiatives, as discussed in the ActewAGL chapter. ACTEW Corporation, the ACT government, AGL and ActewAGL's board all act as 'bosses' to the CEO and all have power to drive change within ActewAGL. These players all have disparate objectives and so the strategic initiatives that they drive will be fragmented and uncoordinated, requiring extensive negotiation. ActewAGL are required to implement and deal with the consequences of decisions imposed on them by ACTEW Corporation and the ACT government[111], as shown in Figure 4.3 – Chapter Four. On many an occasion, particularly early in his tenure, the CEO would say things and then have to retract them as he had obviously offended one or other of the groups to which he reported and were seen by them to be "not viable business decisions". This relationship represents codified knowledge in that the organisational structure and the employment positions are formal and written down. Such relationships also represent power relations, as discussed further in the power chapter. For example because of the political constraints on the organisation ActewAGL is legally not allowed to have subsidiary companies. Yet they manage the company TransACT, pay their bills and have subsumed their people according to a management service agreement, a relationship which is not tied to ownership but which acts similarly for all intents and purposes. This arrangement has resulted in significant change for both ActewAGL and TransACT but also represents power relations.

[111] For example, in an election year the ACT government announced the relaxation of water restrictions, despite the continuing drought and two out of three of the reservoirs being unusable as a result of silt from the fires. This decision was reversed within five months, by a letter to householders from the Deputy Chief Minister (a politician) saying that ACTEW Corporation had decided to reintroduce water restrictions.

Similar changes occurred when the joint venture changed the ownership structure of ActewAGL. These include structural reorganisation, changes in ownership and even changes in the senior management employment status, all reflecting power relations. For instance, the "management are employed by ACTEW Corporation and seconded to ActewAGL on contract, with contracts that will expire by September 2005 when they are able to go across to ActewAGL if they want to". This relationship, although explicit, requires tacit knowledge and understandings in order to manage those relationships. The complicated nature of the organisational structure, as shown in Chapter Four (Figure 4.2) stemming from the ownership structures (Figure 4.3) took me a long time and many explanatory conversations to get my head around and as noted earlier I am not alone – "many people find it difficult to understand the partnership structure of ActewAGL"(ActewAGL 2004e). This is explicit and codified knowledge, yet the understandings of this are held to varying degrees by individuals, often tacitly, as shown by caveats that informants often put on the conversations about the structures, caveats such as, "OK, my understanding of what was / is going on is that …" or "this is how I see it."

Within the complicated structure of ActewAGL itself, each division and some powerful groups of individuals can drive their own changes and these are imposed on the organisation. For instance the technology group has been exploring the use of global positioning / communications systems in buses. This is non-core technology for a utility company but has been embraced by the company as a changed focal point. In conjunction with the local bus company "ActewAGL signed a contract to provide a new bus communication system … throughout the ACT…The system has been designed to improve personal safety for passengers and drivers by providing duress alarms, automated vehicle locators and direct back-to-base contact for [the] bus drivers, along

with voice and data communications" (Email to All Staff 1 July 2004). Such new focal points and changes initiated from the various powerful players at the top of the organisation represent significant changes for the organisation as a whole. These changes are fragmentary in nature because there are many people at the steering wheel. Thus these sorts of changes have more to do with informal expectations and with power relationships, (as discussed in the power chapter), than with the ongoing strategy of the organisation.

The nature of the organisational structure and the rapidity and diversity of change has created an organisational culture not so much resistant to change but ambivalent about it. This is reflected in informant comments such as "there are always constant changes so you have to be aware of changes", "I think Actew[AGL] as a whole have very much got a course as to where they want to go so the changes are always very much ongoing all the time anyhow", "constant changes every 3-6 months isn't good, but then again at least that way management are unable to lay blame" and most telling, in response to a question about being affected by the hierarchy, "they might change what I have got to do again, and again, and again, but no not really". The hierarchy has an overall influence but the day-to-day operations occur locally, as shown in the in/formal chapter in the management feedback model (Figure 6.3 – Chapter Six).

The management feedback model has implications for the changes that occur within ActewAGL. The way that feedback is received means that people at the operations and lower management areas must have extensive know-who so that they can utilise the informal channels of communication because the formal channels by their nature exclude often valuable periphery information. Individual areas have a certain amount of

autonomy based on assumed know-how and know-what but must report, in largely clinical statistical or codified terms, to senior management. The senior management are not concerned with the day to day running of the organisation and nor are they particularly concerned with the technical implications of the management of water and electricity functions, so long as the business does not fail, the customers receive their "life's essentials" and the owners remain relatively happy. Yet, this lack of concern with daily operations, reliance on limited and bounded feedback from the operational levels and the relative autonomy of the business units means that the nature of change will be fragmented, often emergent or bottom-up. There will be some planned, usually top-down change, there will be some incremental change but much of the change will fit into the category of fragmentary change, which occurs on an ongoing basis and about which people become ambivalent.

### 7.4.3.3 Changes in CEO

Significant changes occur in organisations that experience a change in senior executives, particularly the chief executive officer, as Dunphy and Stace (2000) note. At ActewAGL this has historically also been the case. Such changes have manifest themselves in various ways including bringing together and / or separating the functions of water and electricity. As an informant noted,

> "The Water and Electricity components operate as virtually independent organisations. They are different by the very nature of what they are dealing with but these differences are more deep-seated than dealing with different infrastructures. There have historically been some attempts to bring them together but CEOs have changed and they have been separated again into silos."

These structural changes partly have a reflection on the professional background of the CEO at the helm, for instance, the "former CEO was much more engineering orientated (being an ex-engineer), than [the current CEO and] this has an impact on the structures."

Previously, the engineers basically ran the company. When the organisation was solely Commonwealth Government funded it provided,

> "Rolls Royce infrastructure. That is because the engineers liked Rolls Royce equipment and they had the power. There wasn't a manager standing over them saying 'You can't justify that in terms of money. Why have you got a Rolls Royce when a Holden[112] will do the job?'"

Informants felt that the former CEO's downfall was heralded when he refused to sell prime lakeside land to the government for less than its true value. Soon after that, "the former CEO was replaced (at a directive from the ACT government)" with the current CEO. As discussed further in the power chapter, with the change in CEO the engineers lost a lot of the power they had, thus changing the focus, the structure and the decision-making bases in ActewAGL.

Informant comments summarise the situation and the changes that resulted from the change in CEO in the following way.

> "It was never intended that the current CEO would have a role in running the company, he was brought in to prepare the business for sale. The sale was eventually blocked by the Legislative Assembly and so a merger was entered into instead. [The current CEO] has been running the business ever since, along with the management team that were brought in to prepare the business for sale. …Thus their long term perspective is not based on utility operational skills, to them, being professional managers, the business is just another company."

Resulting from this change is the emphasis on cost cutting and on diversifying the products that the organisation produces.

> "AGL is the second oldest listed company on the ASX[113] but they are learning from Actew because Actew is in the unique position of being a multi-utility. …[Indeed] one can't find anywhere else in the world where a utility company has diversified so much as ActewAGL has…. Thus as the boundaries between utilities break down, AGL will be in a position to utilise that knowledge so that they can know what will happen when one crosses those boundaries."

Diversification may produce additional benefits for the ACT Government and AGL are able to learn from this without facing the risks themselves. This 'win-win' situation for ActewAGL's owners helps explain the apparent lack of strategic direction and thus the fragmentary initiatives. The change of CEOs has laid the foundations for exploration of

[112] Holden is GM's Australian subsidiary ie. Equivalent to Ford or Toyota
[113] Australian Stock Exchange

apparently non-utility related initiatives, such as the bus communication system, previously discussed, as well as moving into digital television, Internet service provision and telephony services as a consequence of taking TransACT back into the fold in a management services agreement. Investments in such non-utility based business activities results in fragmentary changes. Commitment "to continue to deliver an increased number of core products to an increased customer base" and the implied lack of boundaries in this commitment, is fragmentary because it involves both changing technologies and experimentation.

The path dependency of the organisation is embedded in the CEO of the day and in the previous CEOs. The changes that have come about as a result of ongoing changes to the CEOs, affect how the organisation continues to operate. These changes are similar to the organisational structural changes in that they are codified and explicit but require tacit knowledge to understand the implications of the decisions. As Dunphy and Stace (2000) note, the changes associated with changed CEOs have a great deal to do with politics and with agendas that are not necessarily shared organisationally. Often such changes reflects the management style of the CEO, aspects of his or her agenda and are part of making a mark, yet they have ongoing effects and provide future directions for the organisation.

#### 7.4.3.4 Organisational Restructure

Organisational restructure can occur as a result of changes in the CEO, however often organisation restructures including organisational chart restructures, physical relocation and changes in positions occur as part of the ongoing organisational change. At ActewAGL, ongoing changes are seen in the organisational chart, in the emphasis of

particular areas, and in physical relocations of workgroups. As discussed in the in/formal chapter, in Logistics in the six years from 1998, there has been a minimum of 25 iterations of the Logistics organisation chart, representing changes in the codified knowledge of the organisation. There were two iterations of the organisation chart in the eight and a half month research period. Changes are reflected in the organisational chart and so are formal and represent codified knowledge.

Every time a local level change in the organisational chart occurs it is accompanied by changes in people's positions and often in their physical location. When I asked individuals to describe their jobs, many people said things like "the job is always changing", although they remained ostensibly in the same position. Positions are tweaked according to staffing demands, increased or decreased work load, changes in the context of the service provision, the section taking on new responsibilities or as part of a job evaluation program tied to people's pay in relation to their responsibility levels. All of these circumstances are uncertain and thus the changes are fragmentary and unpredictable. Changes in people's positions enhance their individual knowledge, increase informal learning and the support that they seek and obtain from colleagues. Changes allow wider experiences, in turn assisting the allocation of tasks when the next position reshuffle occurs. The informal networks serve to reduce feelings of displacement and being overwhelmed.[114] People still feel out of their depth when changes occur but as with most of the change initiatives that I saw evidence of at ActewAGL, it is accepted and rarely does resistance arise.

[114] Although the informal networks provide stability in times of uncertainty, these networks do not entirely remove the feelings of being out of your depth, a feeling which inevitably comes, at least temporarily, with a new job and new responsibilities.

### 7.4.3.5 Moving

At ActewAGL because locational moves are so frequent feelings of loss and the sense of displacement commonly associated with moving do not seem to prevail. Locational moves, particularly to a new site are classified as change, although some scholars see them as being associated with organisational death or loss as the focus of the new site is different (Milligan 2003). However at ActewAGL these changes were accepted almost with an air of amused irony as the comments of one informant suggest when a few of us were discussing the site changes that bringing TransACT on board would create, "it won't affect us much, after all we can't go any lower. We started out at Actew House, moved down to Kingston and then came down here to a demountable beside the sewerage processing plant."

The following extract from my ethnographic notes show the frequency of the changes associated with moving, and with organisational chart restructures and the joking nature of the exchanges also show the ambivalence and acceptance of the change.

> "I sat watching amused as four of my colleagues made plans to move desks. Each would move one desk along, and after the fourth colleague moved 'to the last spot, [the previous occupant] is going out the window.' This did seem how it looked, as he was leaving. There was some discussion about the validity of this move and how it seemed to lack logic but the fact was that the colleague returning from maternity leave 'couldn't just take [the] spot [on the right hand side] because she was in Contracts [which sat on the left] and couldn't therefore be sat on the 'dark side'.' After this comment there were some lighthearted jokes about that side of the office being 'dark' because they were the disruptive side and the side that always gets moved because they talk too much. A colleague noticed my amused smile and said, 'It's always like this Tracey. We're always moving. Once we get the inside of the building done (moved all over) then we move the outside of the building. At the end of the year we've got to move the Warehouse again'."

Similar moves were conducted on a more massive scale when ActewAGL made changes to the organisational chart. For instance when TransACT was included back into the ActewAGL structure, Facilities Management had to move over 100 people from the TransACT location to the various ActewAGL locations, refurbish various areas and accommodate a variety of disparate requirements with regards to furniture and physical

locations.[115] Ironically Facilities lost out in that move too, they avoided ending up by the sewerage plant but the managers, by choice or coincidence, took up residence in the shed. Moving brings about organisational change, although the frequency of these changes removes the negative effects of being displaced, even to a shed, but it also reveals issues of power, which occur in parallel to the ambivalence created through the fragmentary initiatives.

The organisation relies heavily on informal interactions, as discussed in the in/formal chapter, however the know-who associated with informal interactions is not eroded, as would ordinarily be expected, by constant moving. Most of the interactions external to the immediate work group are conducted over the telephone and thus the relocation of a group does not greatly affect the informal cohesion. The work groups themselves are largely moved as a whole unit and whilst there is some movement of individuals, mostly the social and informational networks of work groups remain intact, despite frequent moves. Each of the work groups interact in such a way that they form loosely coupled systems (Weick 1982) in which their interactions with the rest of the organisation are loosely tied but sufficiently strong that removal to a new location does not break those bonds. Since the important know-who and the individual know-how and know-what is not greatly affected by the changes in the physical location, the changes are not seen to be overly significant and thus are accepted rather than resisted.

Such changes could be said to be planned change, however they often seemed to be fragmentary with the 'plans' changing daily. For instance in the Procurement Section at one stage, a reshuffle which involved various people taking on different tasks to

[115] Thirteen months later discussions are currently underway to move them all back again.

accommodate a staff shortage was decided on and then at the section meeting the following week it was noted that "the reshuffle has completely changed since [the announcement] last week" and that we should all "disregard that". It seems that fragmentary or not, the reality is "change is a constant. Multiple changes are happening around us everyday with no 'normal' in sight"(ACTEW 1996a).

## *7.5 The Usefulness of the Ethnography of Knowledge on Change*

In answering the research questions 'does the lens of knowledge on an ethnography help to deepen the understanding of specific aspects of the social setting' and 'where, when and how is the Ethnography of Knowledge useful in understanding aspects of the social setting', this chapter shows that the Ethnography of Knowledge is valuable in the study of change at a micro level. However, at a macro level knowledge-in-action becomes difficult to discern and thus using knowledge as a lens at that level is not particularly illuminating. Where changes are initiated by individuals at an operational level an ethnographer is able to identify the know-what, know-how, know-why, collective, procedural and declarative knowledge associated with the need for the change. At that level the elements of change are relatively observable. When the changes become more macro level, such as change initiated from the top-down, individuals are impacted by the change but being bounded do not have an understanding of the how, whys and wherefores associated with the change. We assume that the knowledge underpinning the actions is declarative and possible based on know-what but are unable to actually observe the knowledge-based actions when the change is initiated. Macro level change results from situations, which are too complex to observe, too far away from the bounded field site, or historically embedded. As a single participant observer I have a limited capability to observe the knowledge-in-action outside the immediate area of my

study, however the Ethnography of Knowledge could be used if ethnographers were placed strategically at various levels and at various decision points throughout the organisation. Using the Ethnography of Knowledge to illuminate aspects of change is limited by the scale of the change, the proximity of the ethnographer to those initiating the changes and to the history of the change and associated stability or fluidity. All ethnographies are limited by the researcher's ability to only see the immediate environment, and this chapter has shown that the Ethnography of Knowledge is no exception.

Although my own experiences with understanding the social reality of change were limited, it is possible, theoretically at least, to abstract to the construct of change generally. The limitations of observability and costliness meant that I was only able to observe the effect of change but not the initiation of the changes themselves. If however, it were possible to have an army of ethnographers placed throughout the organisation in various decision-making areas, with change agents and with powerful groups within the organisation, the Ethnography of Knowledge would provide great understandings of the construct of change in the social setting and allow the research to cross the boundaries that change easily moves across. Through this methodology (if resources were not a problem) it may be possible to see that whereas change at a micro level is based around know-who, expert knowledge, and declarative knowledge, at a macro level it may be more heavily reliant on know-what, in particular knowing what the system and the strategic goals of the organisation are, know-who in terms of who can make things happen and procedural knowledge. This has implications in terms of understanding the success (or failure) factors related to change and in guiding how change initiatives are implemented in organisations.

## 7.6 Conclusion

Through the use of ethnographic examples, this chapter has demonstrated that much of the change at ActewAGL, both top-down and bottom-up, is fragmentary in nature. The change is constant and there is often very little time for organisational change initiatives to become embedded before being charged with further change initiatives. Yet, in contrast to the constant, fragmentary change, the business proposition of the organisation remains relatively stable.

The organisation continues to function with continuous fragmentary change because of a number of factors including, the path dependent nature of the organisation, the organisational ownership, the stable technology and customer base and because the organisation is largely informally driven.

As a result of the frequent and fragmentary nature of the change, the participants have adopted an accepting, almost ambivalent attitude, rather than outright resistance to the change. At a local level, people also cope with the changes by utilising informal networks and work practices to make their tasks more efficient. Some of the informal strategies result in additional, bottom-up changes including changes to the systems and processes and the development of change programs, such as REMAP, or changed work structures in the case of the implementation of the self-directed work teams.

Some of the changes and the impact that these have on people's knowledge and actions can be seen through the use of the Ethnography of Knowledge however this methodology is more useful in assessing the way people deal with change at a micro level. As the ethnographer gets further away from the root of the changes it becomes

more difficult to 'see' how change affects the people, but also more difficult to use knowledge concepts to explain what is happening in that situation. Thus, the Ethnography of Knowledge becomes less useful in observing macro level change in an organisation.

From an observational perspective within the organisation, it is possible to see the types of changes present in ActewAGL as well as to gain an inkling of why these changes occur as they do. The methodology of participant observation (and the Ethnography of Knowledge) also shows that organisational changes and the way people deal with them are socially constructed. Yet, often, as discussed, knowledge concepts are not particularly useful for fully explicating change within an organisation, mostly because many of the change initiatives are coped with by people at the local level but imposed upon them, thus the way they utilise their knowledge in dealing with change is a local response to something that is neither local nor subsequently observable with the methodology of the Ethnography of Knowledge. This chapter has shown that many of the changes are linked to power relations, to organisational routines, and to the way many of the formal and informal aspects of the organisation are enacted informally. These concepts and their inter-linkages are explored further in the remaining chapters of this dissertation.

# 8 Chapter 8 – Power

## *8.1 Introduction*

Power permeates through all levels of the organisation, in many forms and all people have some form of power. At ActewAGL powerful people are not isolated at the top of the organisational hierarchy. People at all levels have and wield considerable power; they are not powerless or alienated (Kusterer 1978 ).[116]

This chapter draws on ethnographic examples to illustrate the use of power and the way that power is integrally connected to the informality of the organisation, to the fragmentary nature of change initiatives, and to the exercise of organisational routines in ActewAGL. As a theoretical construct, power helps to structure and integrate the other data chapters by providing a more holistic picture of ActewAGL as a living breathing organisation. Power is inherent in all social relations and thus important in understanding social settings. In many cases power is also heavily related to knowledge. Like the other themes in this thesis, power emerged early in my ethnographic account as one of the most significant codes, integrally related and interconnected with the other key themes through the socially constructed knowledge that defines the organisation.

This chapter will continue to test the usefulness of the Ethnography of Knowledge to understand the theoretical construct of power in the context of an organisational setting. It will illuminate the depth of the ethnographic account and will demonstrate that power is not the "last dirty word" as it has been described by Rosabeth Moss Kanter (1987

[116] That workers are not alienated is a discussion for another thesis, but it is interesting to note that in Kusterer's (1978) study of so called 'unskilled' workers he found that they were neither unskilled nor alienated but possessed extensive knowledge and commitment. They were not powerless, their tasks were not meaningless and they were not self-estranged or isolated – their control however is not institutionalised / legitimised.

[1979], p 349), but it occurs and is welded by people at all levels of the organisation (Hardy and Clegg 1996, p 624). "Power is what matters" (Mintzberg 1987 [1983], p 364).

The chapter will also demonstrate that like change, power can only be explored so far through the lens of knowledge and that many of the power relations discussed are more lucidly explained in terms of behavioural patterns. Human groupings are complex and variable and sometimes knowledge-in-action only provides a degree of illumination on that complexity. I begin by defining the concept of power and politics in organisations and then present an exploration of power in ActewAGL using the Ethnography of Knowledge and the taxonomical constructs of the types of power, as discussed in the literature, to illuminate and deepen the ethnographic examples in an integrated manner.

As with the other data chapters, I have used the relevant literature to highlight and support aspects of the field site. Each of the chapters explores the findings relating to a high profile code, explores the interlinkages of the resulting themes within the context of ActewAGL and discusses the literature associated with that particular theme. In this chapter, because power can largely be explored through taxonomies of power types[117], I have placed the ethnography of ActewAGL at the forefront, with the literature on power in organisations being integrated throughout to help to explain the observed patterns of behaviour.

[117] French and Raven's (1968) presented a pioneering work on power taxonomies, which they and others (eg (Hickson et al. 1971; Pettigrew 1972; Salancik and Pfeffer 1974; Raven 1993; Salancik and Pfeffer 1995) )have built on, added to and adjusted. Thus their work forms the basis for much of the review section of this chapter.

Broadly speaking the ethnographic examples discussed in this chapter present three ways of thinking about power, although these are interlinked with blurred boundaries. The first is the structural power, which resides with formal, codified structures of the organisations and those linked directly to that structure. The second is that which represents the power you get by being a 'doer', of doing whatever the organisation does. Overlapping with these positions is the power that derives from the agency of individuals and their ability to exercise power related to their personal goals, which may or may not be in accordance with the espoused organisational goals. These three overlap invisible boundaries and intermingle with other ways of thinking about power.

My approach to thinking about power reflects the general approach in this thesis. Throughout the ethnographic account I am using a wide array of classifications of power as they appear in the power literature. I use this strategy as a means of exploring the social setting because it is relatively value neutral although carries an underlying assumption that power is inherent in interpersonal relations but that this is context dependent.

## *8.2 Defining Power*

"Society without power relations can only be an abstraction" (Foucault 1982, p 222-3), similarly, organisations without power are purely a theoretical construct. The study of power is central to the study of organisations (Zald 1969a, p 326) and thus the study of organisations must necessarily address some elements of power. Yet, like knowledge and change the ubiquity of power in organisations means that the term is often used without explanation.

There is no widely accepted account of power in the literature (Barnes 1986, p 181), however most definitions of power draw on the relationship between individuals or groups (Cartwright and Zander 1968b, p 215; Pfeffer 1981, p 2), and on the ability to change the behaviour of that person or group. Many also draw on the strategic exercise of power. Often power is viewed negatively or is ignored by organisational participants, however on the positive side a number of theorists equate power with the ability to get things done (Perrow 1986, p 259; Pfeffer 1992, p 23). Thus power is defined here as *the potential ability to influence the behaviour of other people so that they do things that they otherwise would not.*[118]

Related to power is influence and authority. Influence is the transaction in which a person is induced by another to behave in a certain way. In this capacity power is the capability to get a person to do something but influence is the exercise of that capability (Ivancevich and Matteson 2002, p 388), and authority is "the right to act, or command others to act, toward the attainment of" goals (Robbins 1987 quoted in Burnes 2000, p 176).

Politics can be defined as "those activities taken within an organisation to acquire, develop, and use power and other resources to obtain one's preferred outcomes in a situation in which there is uncertainty or dissensus [sic] about choice" (Pfeffer 1981, p 7). Politics, like power is often viewed negatively and either ignored or viewed as not existing in rational organisations (Mitchell et al. 1990, p 399). However, politics and power do exist. This definition withholds judgment of the merits of organisational politics and has been chosen because it represents some of the aspects of power

[118] This definition reflects that of many theorists on organisational power and is derived from definitions that seem to stem from the initial usage by Dahl in 1957.

discussed in this thesis, namely the social nature of power, its relationship to uncertainty and focus on outcomes (Mitchell et al. 1990, p 400).

## *8.3 Power and Knowledge*

Power is integrally linked to knowledge. At ActewAGL, as one informant said;

> "When it comes to [this] organisation, the people with power are the people who *know* what to do and how to get things done. It doesn't matter if they are [the CEO] sitting right up at the top, he's just sitting in a position, it doesn't mean he can get things done."

At ActewAGL the people with the power *know.* They are the "people who can get things done, because they know-how to get things done, who to talk to" and how the systems, both technological and processes driven, work together. Part of the relationship between knowledge and power is that power and accountability are intimately connected with one's knowledge of the rules (Morgan 1986, p 144), and one's ability to use these in order to get things done.

Knowledge and power are linked and necessary in all social relations. From a theoretical perspective theorists such as Foucault (1980; 1982) recognise the connection between power and knowledge.[119] In discussing Foucault's work, Gordon described this relationship as the "mutual enwrapping, interaction and interdependence of power and knowledge" (Gordon 1980, p 233). To simplify, power is imbued in all social relations and social relations cannot exist without power. Social relations themselves are based around the social construction of reality and knowledge creates that reality. Further, as Barry Barnes notes, "the system of power and authorities must also necessarily represent a distribution of knowledge" (1986, p 185). Distribution of knowledge in organisations may result in organisational learning, another process which is "a

[119] Any in-depth discussion of Foucault's work cannot be addressed in the space available in this thesis, especially given the taxonomical and grounded approach of the thesis as opposed to Foucault's work.

fundamentally political process" (Lawrence et al. 2005, p 180). Indeed, some authors see knowledge and power as being "not as distinct phenomena, as is generally held, but as the same phenomena looked at from different points of view" (Barnes 1986, p 187).

Throughout this thesis I have used the Ethnography of Knowledge as a methodological device to provide a greater understanding of the social setting and of a number of theoretical constructs. In using this to understand power I suggest that in understanding some aspects of power, the Ethnography of Knowledge is not particularly useful, being limited by the proximity of the researcher to the decision-making, to various powerful people and to the underlying behavioural reasons associated with power.

## *8.4 Power in the Organisational Literature*

As noted, the study of power is central to the study of organisations, no matter what discipline (Zald 1969a). Yet whilst power and power relations are ubiquitous to organisations and much has been written incorporating power generally, the systematic study of power in organisations has been intermittent with most of the literature on power addressing the individual bases of power (Pfeffer 1981, p 9), structural sources of power or behaviours and personal traits (Brass 1984, p 518), particularly "the influence of one person over another, usually in a superior-subordinate relationship" (Salancik and Pfeffer 1974, p 453) rather than addressing differences among subunits. In this sense the power literature is similar to the in / formal literature, in that the concepts are frequently used, but infrequently explored in depth. In accordance with this, there appears to be very little literature using power as a lens for analysing organisations.

Power is prevalent in all organisational settings but until recently it has largely been treated as a negative aspect of organisations, something discussed in whispers but not something we would really want to discuss the influence of. Such a view of power probably derives in part from the works of Marx and Weber who tended to see power in terms of domination (Hardy and Clegg 1996, p 623).[120] A more recent view of power "developed more centrally within the field of organisation studies itself" (Hardy and Clegg 1996, p 623) focuses on how groups acquire and wield power not necessarily granted through the organisational hierarchy.[121] This recognition has made the study of power in organisations less of a dirty word than it had been, thus opening up the literature for general discussions of power in particular circumstances (Walker and Newcombe 2000; Werthmann 2003), or in relation to other aspects of organisational theory such as the social construction of knowledge or cultural aspects of power (Hing 1999; Clegg and Ray 2003) or truce in routines (Nelson and Winter 1982).

Power, influence and authority have long been prevalent in studies of organisations (Roethlisberger and Dickson 1939; Whyte 1948; Barnard 1968 [1938]; Kapferer 1972), including studies explicitly on power, power as a part of general texts and theoretical works on power. In response to increasing awareness of power and acceptance of studying power as a means of increasing ones own power through understanding a number of authors have written explicitly on power (Etzioni 1961; Zald 1969b; Clegg 1979; Pfeffer 1981; Greiner and Schein 1988; Pfeffer 1992) or have incorporated significant sections on power in their general works (Cartwright and Zander 1968a;

[120] Theorists such as Marx and Weber form the basis of much of social science and a discussion of their influence on power is beyond the limited scope of this thesis.
[121] An example of power stemming from organisational studies can be seen in that recent change management literature has incorporated the power-politics perspective. In this view of change organisations are seen to be non-rational, with goals and objectives emerging as part of the negotiation and influence of actors and through the ever-changing and fluid coalitions of groups and individuals (Burnes 2000, p 173).

Kanter 1977; Morgan 1986). In addition to the works explicitly addressing power, there is a vast body of literature that discusses power at a theoretical level, not necessarily confined to organisations e.g. (Foucault 1980; Geertz 1980; Foucault 1982; Fox 2000). The concept of power is widely understood and assumed as an element in organisations (Nader 1972; Barley 1986; Lave and Wenger 1991; Korczynski 2000), although often without necessarily explicating the concept in specific terms and exploring the implications of power.

With the growing acceptance of power relations, some of the literature empirically tests for and attempts to measure power (French 1968; Hurwitz et al. 1968; Lippitt et al. 1968; Perrow 1969) or proposes how this could be done (Etzioni 1961). Due to the nebulousness of the concept of power, some of this testing occurs through proxies for power such as the symbols of power (Pfeffer 1981; 1992) including the size of people's desks or offices or other methods such as the possession of plants.[122] A number of works address issues of diagnosing power but do not really address empirically measuring it (Pfeffer 1981; Greiner and Schein 1988; Pfeffer 1992), however other works address power as associated with concepts of organisational relations, organisational learning (Lawrence et al. 2005), decision-making (Miller et al. 1996 ) or changes in technology (Burkhardt and Brass 1990). For instance, power is often associated with trust and thus measures for trust form some of the empirical data that underpins the power literature (Dirks and Ferrin 2001; Manzini et al. 2002). Some of this measurement has occurred in relation to power in social networks (Brass 1984; Krackhardt 1990; Kilduff and Krackhardt 1994; Hislop et al. 2000), often using forms of Social Network Analysis, as discussed in the in/formal chapter.

[122] By way of an example, in ActewAGL a look at the invoices for the supply of pot plants shows that the powerful areas of Corporate Finance and Information Technology have the most plants and that the allocation of power by this proxy means that Facilities Management have almost no power.

In order to measure power, it must first be clearly defined. Defining power largely occurs through the recognition that there are many different types of power that may be exercised by groups and individuals in specific instances and that "power is a multilevel concept" (Brass 1984, p 518). It is impossible to devise a universal list of applications of power (Cartwright and Zander 1968b, p 217) given "the many different voices that have spoken on power…[and the way it] resists explanation in terms of singular theory" (Hardy and Clegg 1996, p 636). A good deal of the literature on power in organisations does nevertheless attempt to provide a taxonomical breakdown of the various types and use of power (French and Raven 1968; Morgan 1986; Raven 1993; Etzioni 1975 and Robbins 1986 cited in Burnes 2000, p 178-9) or attributes power to specific circumstances such as uncertainty (Crozier 1963; Cyert and March 1963; Thompson 1967; Hickson et al. 1971; Pfeffer et al. 1976), conditions of moderate interdependence (Pfeffer 1992) or the supply of scarce critical resources (Lewin 1952; Blau 1964; Pondy 1969; Salancik and Pfeffer 1974; 1995). The types and circumstances for use of power take both structural and cognitive forms (Krackhardt 1990, p 346), (such as legitimate power and referent power respectively), and forms the major theoretical basis of the literature on power in organisations. In the following sections I will explore power relations in ActewAGL using ethnographic examples, thus situating the literature on power within the ethnographic account.

## *8.5 Power in ActewAGL*

All people in social relationships have power; some choose to wield it more than others. This chapter addresses the secondary level research question of 'what are the applications of power in an organisation such as ActewAGL' and shows that in

ActewAGL people are not powerless, indeed people at all levels have and use power in various ways. Sometimes this use of power, takes the form of having knowledge, is due to control of resources, or manifests itself simply through the ability to assign power to others and allow them to use it (Latour 1986). Mechanic (1987 [1962])noted that all organisational participants have power. Indeed,

> "lower level organisational members have a great deal of power. … If they refuse to accept or accede instructions, managers have a great deal of difficulty carrying out the sanctions of the organisation. [They also have] power from specialised knowledge about work processes and access to information that managers may not have" ( Pfeffer 1981, p 5).

### 8.5.1 Organisational Structure and Power

Power is often associated with formal authority through the organisational hierarchy. Power associated with the distribution of authority represents formal power (Mechanic 1987 [1962]), but it must be coupled with discretion for it to be considered more than authority (Blau 1964; Barnes 1986). This is but one of many forms of power, often called *legitimate power* which, among other things, is the "legitimate right of some individual or group to prescribe behaviour or beliefs" (French and Raven 1968, p 265) and is often based on position within a hierarchy but also associated with obligation created through a sense of reciprocity, notions of equity and responsibility or dependence (Raven 1993, p 234-5). Legitimate power brings with it *authority* or the "possession of control-rights, [which] allows one person to direct-manage the actions of another" (Conner and Prahalad 1996, p 480). It is "associated with assigned authority, responsibility, and discretion over a range of resources and decision areas …[and as such is] an important determinant of …influence in decision-making" (Tushman and Romanelli 1983, p 13), this being part of the mechanism by which organisations function. *Legitimate power* often forms the focus of research into power in organisations because legitimate power holders are often those able to exercise obvious

influence over decision-making and their actions characterise *episodic power* or power identified through discrete, strategic and political acts (Lawrence et al. 2005, p 182). Yet legitimate power is not always the most effective source of power, as discussed later in this chapter.

> "As Weber (1968) noted, bureaucracy is organization on the basis of knowledge, rather than on the basis of power alone. Thus the theory of bureaucracy presupposes that all the knowledge necessary for strategizing and organizational design processes is available at the top of the organization and this underpins its authority base. Whenever this is not true and lower level employees are able to deal with uncertainties which cannot be resolved by senior management, they have power over the top management" (Spender 1996, p 46).

At ActewAGL when I asked informants about their notions of power[123] many cited the CEO as the most powerful person in the organisation. However, others with more sophisticated views of power noted other groups, areas or individuals as being powerful or clarified their statements about the CEO with comments such as, although "I know that he is told to do things by the board, so it is really the board that is the most powerful".[124] The CEO at ActewAGL has *legitimate* and *structural power*, derived from his position in the structure of the organisation (Ivancevich and Matteson 2002, p 392), yet he is also in the invidious position of having four 'bosses' above him, regulating his stance on issues, undermining his decisions and asserting their power for their own, often disparate, goals, as discussed in the change chapter. Such a relationship means that the power of the CEO is not absolute, indeed is in some respects quite uncertain, both in terms of those above him and the acceptance of that authority by subordinates (Gardner and Moore 1964, p 224). Such uncertainty may manifest itself in many ways including in organisational structural changes, concentrating on additional core products and a

[123] Power is an attributed property and thus in accordance with other studies I asked informants about who they felt was powerful and influential both in Logistics and the organisation as a whole. "Such reputational measures assume that those asked are knowledgeable about power, that they are willing to divulge what they know, and that the process of asking does not create the phenomenon" (Brass 1984).
[124] Consistently informants noted the same couple of people in Logistics as being powerful, although these people were not necessarily at the top of the Branch hierarchy, thus demonstrating knowledge of power in the local environment and the ability to conceptualise the concept of power in sophisticated ways.

hands-off approach to communication, as discussed in the change chapter. Further it means that other people have the opportunity to exercise power including the boards themselves and liaison officers who "keep [the CEO] out of trouble with the two boards with which [he] regularly [has] to deal".

Whilst legitimate power exists, at ActewAGL this is a limited form of power and there are others who also wield power and who in some cases are more powerful than the legitimate power holders. As Mills notes;

> "From the standpoint of power, it is easier to pick out those who count rather than those who rule. When we try to do the first, we select the top levels as a sort of loose aggregate and we are guided by position. But when we attempt the second, we must dictate in clear detail how they wield power and just how they are related to the social instrumentalities through which power is exercised. Also we deal more with persons than positions, or at least have to take persons into account" (1959, p 204).

### 8.5.2 Secretaries and Scolding

The CEO counts, through his legitimate position of authority, however others at ActewAGL also have considerable power and influence. At the annual staff breakfast, the CEO thanks many of those close to him. Every year he thanks his personal assistants and jokes that they "basically ran ActewAGL in the last year". No one laughs at this 'joke', maybe because they have heard it all before or maybe because they have born the brunt of the power of these apparently low-ranking employees.

The senior personal assistants are widely attributed with running the company or the particular area, both by informants who acknowledged both their status as personal assistants and their power and by themselves. The knowledge of this is explicit but not codified. Informants said things like "if you get on the wrong side of [her] she lets you know it. It is funny she is a personal assistant but she really runs [the area], she has a lot

of power." This can be seen in my ethnographic notes of the orientation tour detailing our morning tea with the executive.

"When we arrived at Actew House we proceeded in two lift loads to the 5th floor.[125] The carpet was thick and the décor tastefully decorated in hard woods and frosted glass. We proceeded into the 'Board Room'. This room had windows spanning their length overlooking a view of the roundabout park and the city. The walls were of a blue (sitting somewhere between royal blue and purple) and the dark hard wood oval table (with a glass top) dominated the room. At the opposite end to where we entered were a set of double doors of frosted glass and two side tables one with pastries on it and one with tea, coffee, an urn, cups and saucers and biscuits. We were invited to partake.

We all stood around the room as (the CEO's executive assistant) was introduced. She was a tallish 50s+ woman with a woollen suit in black and white check and a loud voice. She joked about how [the CEO] would come in and be a real ogre and demand work work work but how he doesn't really run the company, she does. She then noted how she had organised the morning tea and spent most of the morning running around looking for an extension cord. She laughed that ActewAGL was an electricity company but they couldn't find an extension cord."

Many of the personal assistants wield a great deal of *resource power* in their ability to withhold access to the resource of the person to whom they report, utilise *informational power* (Raven 1993, p 235) in their ability to, control, demand or withhold information (Kanter 1977; Greiner and Schein 1988; Handy 1993), and to get people to do what they want. Through such control of resources they increase other's dependence on them and so bring about their desired outcomes (Brass 1984, p 520). Studies have suggested that they may also wield considerable power because of the key role in filtering information in managerial grapevines (Davis 1969). This could be seen as *political power* or even *structural power*.

Having such political power means that one can change the course of some events or even exert *reward power* in the ability to bestow or take away rewards (French and Raven 1968, p 263). For example, one of the colleagues at Logistics received the employee of the month award before I came to the field. I thought this was a wonderful achievement but the colleague concerned was skeptical saying that the boss's secretary

[125] During 2003-4 the Executive moved from the 5th to the 7th floor of ActewAGL House, a central city building over which ActewAGL have naming rights. This move resulted in all new furniture and décor and was itself an interesting exercise in power.

"had nominated [her] and they (the committee) would have just said if [she] wants it we'll do whatever" to appease her. This was partly *referent power* from the committee to the boss's secretary but the result was *reward power* in the form of an employee of the month award.

Some of the personal assistants frequently use *coercive power*, or the power of asserting a threat as well as *interpersonal power*, based on know-who knowledge, by going directly over someone's head when they are dissatisfied. This form of power invokes the *power of third parties* to aid their effort, a form of power that Raven (1993) added to the bases of power originally proposed by French and Raven 25 years earlier. When I was relatively new to the field I sat at an absent colleague's desk for a couple of days and underwent my 'initiation' of dealing with the personal assistants, as explained in this extract of my ethnographic notes.

> "I answered [the] phone. On the other end was a very aggressive person who wouldn't give her name, wouldn't be transferred to someone else and who wanted to know why an invoice she had approved and had faxed had been returned to her. I did the best I could in answering the query, although she wasn't impressed when I told her the purchase order had too many numbers and she said "Are you in [the correct partnership][126]" – I was in [another part of the system] so that caused a bit of a problem. In the end, unable to help her I apologised and she hung up rather abruptly, leaving me feeling the depths of my inadequateness. She then got straight on the phone to [the Operations Manager] whilst I complained to [a colleague] about how rude she was. [My colleague] laughed and said "I bet that was [the particular PA]". [My colleague] checked it and indeed it was. She looked at the purchase order and was able to identify what the problem was, that [the PA] had only approved one line not both. [My colleague] then rang [the PA] just as [the manager] came out, looked at me and said "[The person you were dealing with] says she is a bitch and not to worry about what she says." [My colleague] explained to the PA that she hadn't receipted the second line and laughed about it. [The manager] had walked away but came back and said, "Tell [her] she is not only a bitch but she is a blonde as well." They laughed and my colleague relayed the message. I had apparently passed my initiation as I received comments like, "That's funny, congratulations, you've just experienced the wrath of [the PA].
>
> [The manager] came up to me after the meeting and asked how I was going having had such an encounter. She said that people here have learnt to deal with [certain people]. I suggested the term "smooth things over" but she said, "I never smooth things over with [her] but I do deal with her." She noted that the person is very efficient and officious. She apparently rang [the manager] to say that she was peeved and to apologise for having upset one of her staff (me). [My manager]

[126] Each of the partnerships, as shown in Figure 4.3 (Chapter 4) is accessed through a different part of the accounting system. The people in Procurement have access to all of them but all of the other areas are restricted so that Retail can not see Corporate, Distribution can not see Retail, Corporate can not see Distribution and so forth.

> said she can be pretty difficult and goes off without thinking but it was possible to get constructive feedback from her. I concurred with this and said that although I am not very good with the system I couldn't figure out what the problem was and so it wasn't surprising she couldn't and that we really should have sent an explanation when we sent [the invoice] back."

Although I felt powerless in this situation, my manager backed me up, thus utilising and increasing her own power because she displayed a consistent pattern of behaviour. This note of confidence in my ability, although at the time I felt was misplaced, did make me feel better and increased my respect for her. The incident instilled feelings of conspiratorial oneness with the manager, my colleagues and I, thus the manager was also able to increase her *referent power* (French and Raven 1968, p 266). It also no doubt increased the *expert power* that she was seen to have by the efficient and officious internal customer because of her ability to deal with the situation. By not using some of her power and by making a joke of the situation, the manager was able to defuse the situation with the internal customer and invest the unspent power in social obligations (felt by the staff and the customer), so converting *legitimate power* into *personal power* and ensuring future compliance (Blau 1964, p 206).

The behaviour of the Personal Assistant and also of the manager can be described as *non-goal orientated motives* (Raven 1993, p 239), being motives not positioned within the bounds of what helps the organisation achieve its goals. The behaviours increase power in some way but are unrelated to the ability to get things done for the good of the organisation being more related to personal feelings and motivations. The knowledge that lies behind these behaviours is tacit, not explicit and very individual. Most people are not even aware of the results of their actions in terms of non-goal orientated motives, but they do impact of the power of the individual.

Escalation is a strategy used by some of the Personal Assistants, but also by those responding to situations that they do not wish to deal with. Political escalation of going "over your head to your manager", is a strategy often used by aggressive people but also as a response by recipients, allowing them to deal with unwanted behaviours. Many of my informants in various sites try not to deal with certain people, such as those who display "subhuman" behaviour. Instead they will escalate it to someone with either more authority (Pentland 1992) or someone who has a better working relationship with the person who is irate. The escalation of an issue is not about an inability to deal with that issue (Pentland 1992) or about a person but about asserting their own power so as to achieve the aim of not being put in a position of feeling bad. People said things like, "I am not scared of her, I just don't want to deal with her." This is an understandable response, however it creates more power for those who engage in aggressive behaviours, even if this is *negative referent power* (Raven 1993, p 235) where one chooses to disassociate themselves from another, and reinforces the *normative power* (Burnes 2000, p 179) associated with symbols or cultural tendencies to avoid conflict.

There is a culture of conflict avoidance in ActewAGL at the lower levels and so people who choose to utilise their power in a coercive and threatening way, not just restricted to personal assistants, are to able to achieve certain ends. Such a use of power works for a while but as a some power theorists have pointed out, may not be a long-term strategy because organisational coalitions shift (Pfeffer 1992).

### 8.5.3 Engineers and Evaporating Power

It is possible to retain power for a long time but sometimes organisational changes such as the change in CEO can change the balance of power in organisations. Indeed

reorganisations are a common way to manipulate structure to increase power of certain groups or people (Kanter 1977, p 178). The position of the CEO and how that position influences the running of the company has an impact on the power-bases of other people, through organisational structures, his areas of expertise and concern and the way communication occurs in the organisation.

"The former CEO was much more engineering orientated than" the current CEO, and thus when the former CEO was in position, the power used to reside "with the engineers" and the culture of the organisation, like that of many utilities, was based largely around an engineering culture (Nelson 2003, p 3 web version). At that stage, ACTEW (as it was then) "had a Rolls Royce infrastructure, that is because the engineers liked Rolls Royce equipment and they had the power" and were able to wield it. At that time their power was related to their know-how, know-what and know-why knowledge, that is, it was *expert power* (French and Raven 1968, p 267), bestowed because of their expertise (Greiner and Schein 1988, p 28; Ivancevich and Matteson 2002, p 390) and thus perceived credibility. As a result of the knowledge they had, the influence with the CEO of the time and their *legitimate position* within the organisation, the engineers had considerable power.

The power they carried was *structural* and *legitimate* due to their positions within the organisation and their distributed or collective knowledge (Foss and Foss 2002), providing them with *authority power*, *political power* which was both explicit and related to know-who, and most importantly power to control resources, that is *resource power* (Ivancevich and Matteson 2002, p 392), or power representing embedded knowledge. Resources are anything that is perceived to be valuable and thus control of

resources (Pfeffer 1992, p 88) or the ability to make decisions about resource allocation is a significant source of power (Pfeffer and Salancik 1974; Pfeffer 1992, p 75), particularly when others either have limited access to the resources, or when resources are scarce (Salancik and Pfeffer 1974). Yet, despite the engineers having the power for over seventy years, when the current CEO was appointed the engineers lost a lot of their power.

The new CEO, for the first time in the history of the organisation, did not have an engineering background (Donovan 1999, p 273) nor a focus on the engineering side of operations and indeed had a much more hands-off approach. Without a specific focus on engineering and utilities, the new CEO and his management team came in to "toughen up the organisation, to prepare it for an uncertain future" (Donovan 1999, p 273). The management feedback / communication model[127] - Figure 6.3, presented in the in/formal chapter, clearly shows the change in focus and communication strategies. It also shows the influence of the CEO being more hands-off and relying on formal statistical reporting feedback whilst allowing the day-to-day operations of the organisation to occur informally. As Pfeffer (1992, p 301) notes, organisational change inevitably involves changes in the power distributions, as can be seen in the shifting power of the engineers at ActewAGL.

The *informal power* (Mechanic 1987 [1962]) associated with people at the operations level has increased at the expense of the *structural, information, resource,* and *knowledge power* held by the engineers. When the engineers, being middle managers used to have the *expert power* and the influence to make decisions regarding

[127] "The communication structure is [itself] the administrative apparatus of the system of power" (Pettigrew 1972, p 190).

infrastructure investments, "Canberra … was a bit spoilt. … There was a lot of money put in because it was funded by the Commonwealth." Now the people at the operations level have much of the knowledge needed for the utility management largely through informal relations and long-term know-how. The senior management team have a relatively hands-off approach, only really receiving formal feedback in the form of systems reporting, not operational technicalities. As Lawler and Rhode (1976) note, the people who control the reporting structures have *structural power* and *information power* - the structure of the organisation supports them providing, withholding or manipulating the formal codified knowledge that the CEO and the management team receive. "It is obvious that information can be an instrument of power" (Feldman and March 1981, p 176) particularly in the way it can be used to influence organisational decision-making and the allocation of scarce or critical resources (Salancik and Pfeffer 1974). Since privatisation of the company, there is more of a focus on monetary aspects and no longer do people have discretionary power to spend money, especially large sums of money, without higher approval. "The reality is that there was an awful lot of money put into the infrastructure in the early days that we will never have now because no one can justify it." Thus the engineers have lost the power associated with *control of resources*.

### 8.5.4 Field Crews as Rogue[128] Agents

Power rarely evaporates in organisations; usually it is shifted to other sources, in ActewAGL's case from the engineers to the field crews. The management feedback / communication model (Figure 6.3) discussed in the in/formal chapter, shows how much of the knowledge of how the organisation operates, in terms of the core business of the

[128] Selectively using the Concise Oxford Dictionary's definition as Rogue being a playfully mischievous, waggish or arch person.

provision of electricity and water to the community, is held at the operational levels. Groups such as the field crews have various types of power including *knowledge* and *expert power*. The power of the field crews has been discussed briefly in the in/formal chapter in the way that the field crews act collectively to retard the monitoring of their whereabouts and the reasons for coming into the Warehouse. Where the people with *coercive power* (French and Raven 1968; Raven 1993) to enforce compliance on the field crews do not wield it, a vacuum develops, and the field crews increase their own *practical* and *interpersonal power* (Ivancevich and Matteson 2002, p 389-90). The field crews act as an informal collective, asserting their power, hampering management efforts at monitoring them and doing so in such a way that the *coercive power* of those with the ability to reprimand cannot be enforced. This ability to 'play the system' is similar to that evidenced in some of the other studies of workers (Roethlisberger and Dickson 1939; Whyte 1948; Roy 1954; Whyte 1961; Schwartzman 1981; 1989) and shows the *informal* and *collective power* of such groups.

The field crews, as individuals and a collective, carry out the work, and implement the projects, and as such they have knowledge and expertise that the organisation requires for continuing operation and so have and wield *expert power* and to some extent *informational power* (French and Raven 1968). The expert powers of the field crews is partly *structural* due to their position in the organisation and because their roles are supported by other people such as specifying officers who do not utilise their power to the same obvious extent as the field crews. The role of Specifying Officers, (which can be assigned to engineers, field crews or other people who "become a specifying officer through having technical [or expert] knowledge") is to nominate the specifications for contracts, drawings and standards. These people "hate the role and so don't select to become a specifying officer" and thus although they have *legitimate*, *informational* and

*structural power*, know-what, know-why and know-how, they often do not utilise their power in that role, tending instead to not respond in a timely manner or at all, and to concentrate on the other parts of their jobs. The Project Officers use the information provided by the Specifying Officers to assign commodities to projects, although they themselves are desk staff and thus do not have the explicit knowledge of how the commodities they list are used or even in many cases what they are. When a work pack is produced by the works management system as entered by the Project Officer, "sometimes the project leader adds to the list or sometimes the field guys say 'hang on you also need X' and will add it to the requirements". In this way the project leaders and field crews exercise know-what, know-how and product knowledge through *knowledge power*, because failure to add the additional requirements would delay the project completion.

This *knowledge power*, equates to control of information (Robbins 1986 cited in Burnes 2000, p 179) and can work in both a negative and a positive way, in terms of the outcome and of who is empowered or loses power as a result of the actions, as shown in field crews picking items from the store. The field crews often come into the Warehouse and pick things themselves, even though they know they are not supposed to, as shown in this extract of my ethnographic notes.

> "A customer (one of the field guys) came in. I asked if I could help him and he asked for one of my colleagues. I explained that the Storeman wasn't in today and asked what he wanted. He said that my colleague knew but gave me a project number and a works pack number. I asked if it was a forecasted project and he mumbled something about the job being finished before the release date. Having failed to work out what he wanted I went off to print out the project report.
>
> Next thing I knew, the customer was behind the counter and going through the forecasting file, something that was a bit disconcerting. I tried again to press him for what he wanted. He said the file wasn't there but that they never were anyway. I showed him the project report I had just printed up and asked him which items from that he wanted. Without even looking at it he said it was for phase one and he was up to phase two and the stuff wasn't on the report. He then wandered over to the filing cabinet to collect a book to be filled in. I went out and got one of my colleagues as I felt as though I was loosing control of this situation.
>
> …My colleague wrote down on the project report the stock codes of the items as he knew them by heart. The customer then walked out of the demountable, collected a trolley and went down

> the isle. We looked at each other and followed helplessly. The customer came to a spot on the shelf and without even checking the stock codes started to load the trolley. Feeling increasingly like a mistake was imminent and that my name was on the documentation, I looked over my colleague's shoulder and compared the codes with the items the customer was taking from the shelves. (I had seen the same guy pushing a trolley last week.)
>
> After he had left I asked the Storemen what to do in that situation and they joked 'pass it onto someone else' but when I pressed the issue one of them said he would do a project issue for the items because presumably somewhere there was a requisition for the guy's stuff but it would be too much effort to find it. I asked if this didn't create a duplicate and he said that it may do but that a requisition would do the same, but he assured me that the paperwork would hit the system and it would all work out."

As one Storeman put it, having told a field worker off for being in the Warehouse and having been ignored, "they ignore you anyway so what was the point?" This particular customer was one of many displaying the same behaviour. Had this been one person ignoring the rules of the Warehouse the situation may have been different to when the collectivity behaves in a particular way.

Collectivity is intimidating and can act as *coercive power* even if no threat is actually made. Collective action is closely related to power, both in terms of groups acting collectively and in terms of power being attributed to individuals through the collective "wills of all the others" (Latour 1986, p 269). Indeed some scholars have suggested that, "power should be studied as the medium of responsible collective action" (Blackler and McDonald 2000, p 835). For instance, as my ethnographic notes show, in 2000 when Logistics moved from Kingston to Fyshwick,

> "there was no accommodation for the Storepeople and there were 12 Storemen in the cross part of the T of the demountable.[129] The weather was getting colder and there was a growing discontent. The head of the Division had no concept of how to talk to blue-collar workers and seemed to think that the accommodation was OK. He eventually called in [a senior person experienced in industrial disputes to mediate and to act as a leveler] and that fellow was appalled that the guys had to put up with that kind of accommodation or non-accommodation, as was the case. In the end the guys threatened to go on strike and the team leader had to do some fast talking to convince the guys that the Logistics management had nothing to do with the accommodation crisis and to give them time to try and sort it out. In the end the base of the T demountable was found and placed in the Warehouse to provide office accommodation for the Storepeople, but not until October (having moved into the Warehouse in April), after some of the Storemen had gotten really sick from being in the cold.[130] I asked if they lost many Storemen

[129] There is a demountable for Procurement and a second demountable (discussed here) in the Warehouse to provide office accommodation for the Storepeople.
[130] I was doing an unrelated product for another part of Actew (as it was then) at the time and was also accommodated in the Warehouse. That year it snowed in May, the temperatures in the Warehouse were

> that year but my informant said 'No, they all band together.' Interestingly I had seen the same thing happen after a verbal altercation between the team leader and one of the Storemen, the guys all went off together for coffee and lunch when they usually staggered their brews."

Such situations reflect the informality of the organisation and become the norm, as such creating *normative power* (Etzioni 1961) for the field crews and for other collectives such as the Storepeople.

Although the *legitimate power* and *authority* should lie with the Warehouse staff, they tend to revert to the path of less resistance and try to retrospectively patch any problems that occur. When the field crews come into the Warehouse and take things into their own hands they behave assertively, ignore comments of the Warehouse staff, and exercise both *expert power* and assumed *referent power* (French and Raven 1968). They assume *authority* that is difficult to question because they presumably do have the knowledge of their projects and of the products needed to fulfill the project and they behave in either a charismatic way, joking and employing feelings of oneness with them, or simply ignore rules, thus evoking *negative referent power* (Raven 1993, p 235) where the Storepeople choose to disidentify [sic] themselves with the perpetrator. The field crew's use of power both serves their purposes but also highlights the lack of power that the Warehouse staff, and indeed Logistics as a unit, has in terms of formal corporate *political power*. This lack of formal organisational, *structural* and *legitimate power*, as discussed in the other chapters, is balanced by the people in Logistics having a great deal of *interpersonal power* in other ways.

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several degrees colder than the outside temperatures and with steel capped boots on a concrete floor I had the worst chilblains I have ever had.

### 8.5.5 Logistics and the Power of Linking the System

Lacking structural and political power, the people in Logistics employ other ways of exercising their power, including utilising their network centrality, informal networks, problem-solving skills and ways of teaching people the system. Logistics have been shunted sideways reporting to Energy Networks but serving the whole of the organisation and the supply-chain. They have lost a number of functions, including Security and Facilities and they are out of the decision-making process. There is a feeling that Logistics are somehow outside the organisation and that

> "as far as the organisation is concerned, [Logistics] is a minnow. If a different area had a problem with the system they would get things [actioned] more quickly. [This is partly] because [Logistics] provide a service and the service does affect everybody, [and partly because] the type of person that works in [Logistics], isn't an outspoken or aggressive person and our complaints are very quiet."

All of these factors mean that they actually have little political or coercive clout, yet in other areas, including in the use of *expert power* due to their ability to influence the information systems (Lawler and Rhode 1976), they have considerable power.

Procurement staff have become the 'go to' people for systems issues, utilising the largely informal organisational networks, and doing so with knowledge of who has power to get things done, who to avoid and how to deal with particular people in order to achieve, as discussed in the other data chapters. Krackhardt (1990) notes that such knowledge of the informal networks increases the power of the individual or group in possession of that knowledge, just as does occupying the central positions (Hickson et al. 1971), as empirically tested by a number of authors (Hinings et al. 1974; Boje and Whetten 1981). Many of the people in Logistics have both the know-who knowledge of the social network, intrinsic understandings of how it operates and also themselves occupy central positions in the network. Many of them have know-what, know-why,

know-how and declarative knowledge of the accounting system and other systems in use at ActewAGL.

The Procurement people utilise the social networks to support their 'go to' status, and to improve their own power when their *political power* is limited.[131] As a group, resulting largely from the skills, knowledge and expertise of some individuals within, the Procurement staff have *legitimate power* in terms of responsibility or dependence, the third aspect of Raven's reassessment of the bases of social power, that is they have some obligation to help those that do not have the ability to help themselves (Raven 1993, p 235) through having such contacts. In this capacity, through the use of technological systems, the Logistics staff have a form of *systemic power* which is legitimised through the routine, ongoing practices of the organisation and diffused throughout the organisation (Lawrence et al. 2005, p 182). For example, only two people in the whole organisation have the authority to create / register new suppliers. When people want this done they fill in a new supplier form and contact the Procurement area, where the people responsible add the new suppliers to the system. These two people provide mutual help for the whole organisation because they control the process and people have to go through them to get things done. They have *resource* or *information power*, *systemic power* and also have know-how and expert knowledge and thus also *expert power*.

In the use of the power through linking the systems or providing scarce resources the individuals within the social network are important as it is through them that the

[131] As we have seen, not all types of power involve the ability to impose one's will over another (Blau 1964, p 141). Part of the power base held by the people in Procurement stems from the ability to be the 'go to' people and provide advice. The provision of reliable advice is itself a source of power not involving imposing one's will over another.

networks are maintained (Kilduff and Krackhardt 1994), as discussed in the in/formal chapter. The social network maps (see Appendix Four) of the Procurement area show a fairly close, interconnected network, within which some people are hubs, or people that are socially connected to high degrees (Doherty 2000, p 5 web version). These people are important for the internal informal exchanges but they also maintain a large number of interactions with the wider social environment. They are 'boundary spanning individuals' linked to the unit and external sources of information (Cross and Cummings 2004) and are thus influential and powerful in their own right although their relative influence is contingent on the locus of critical uncertainty faced by the unit (Tushman and Romanelli 1983). These people provide the connections to a more loosely coupled system (Weick 1982). In this way organisational networks both increase the *personal power* of those who are well connected or who have knowledge of the workings of the network (Pfeffer 1992, p 111-118), and can be used as a valuable resource in increasing collective knowledge in the introduction of change, particularly in relation to the adoption and adaptation of technologies (Hislop et al. 2000).

The systems knowledge and experimental attitudes in Logistics means that they have become early adopters of new technologies, and so are able to increase their power through their network centrality (Brass 1984), as discussed in the other data chapters. Network and physical centrality, held by individuals or business units, increases the power of that person or group (Mechanic 1987 [1962], p 342; Greiner and Schein 1988, p 34-5; Pfeffer 1992, p 118-122; Brass et al. 2004, p 798). Network centrality has been shown empirically to improve performance in complex jobs (Mehra et al. 2001), reflects the ability to provide expert information, to take action (Cross and Cummings 2004) and to increase *reputational power* (Krackhardt 1990). By codifying the knowledge and embedding it in systems the locus of power changes (Foray and Steinmueller 2003, p

311), resulting in unexpected groups, such as Procurement, gaining power that they otherwise might not have had. As Burkhardt and Brass note, "a redistribution of power [occurs] when the less powerful become the early adopters and the more powerful are late adopters" (1990, p 109). Power also increases in this way because the innovators become irreplaceable or at least critical for day to day operations (Hickson et al. 1971; Pfeffer 1981; Brass 1984; Mechanic 1987 [1962]) and they provide information or expertise where there are few alternatives so reinforcing their autonomy, skill variety and significance (Brass 1981).

Diffusion of changes to technological systems results largely from the network centrality of innovative actors. Logistics are isolated physically but successfully maintain power because they maintain links into the rest of the organisation via telephone and email and so are in a position to control and exchange information (Brass 1984, p 524). This ability to maintain power also depends upon whom in the organisation the group are linked to (Brass 1984; Brass et al. 2004) and also their links to other organisations (Boje and Whetten 1981). Logistics physical centrality is weak but their network centrality is strong because they possess knowledge and information others require access to. In the case of the Procurement team most people have been there for a long time and so are well connected informally to people throughout the organisation, they pass on innovations in the use of the current systems, and newly gained knowledge about new systems to colleagues within and without Logistics. Much of this diffusion occurs through informal channels, including friendship networks which tend to endure even in times of change. A number of the staff in the Procurement Section also have formal training components in their position descriptions and this is carried out across the whole organisation. Thus they have *informational* and *expert*

*power* as well as *legitimate power* in those aspects not related directly to position, but related to the diffusion of knowledge and to problem-solving.

As a result of being able to solve problems and pass on solutions, as discussed in the routines chapter, the people in Logistics also gain power. In such a situation the group's distributed knowledge provides *legitimation* and results in them obtaining the *authority*, albeit delegated authority, to act in certain ways and pass on certain knowledge (Foss and Foss 2002). Power is associated with the strong relationship between problem-solving and *expert knowledge* (Pfeffer 1981, p 112) where links between power and expertise often result in collective learning through social networks and historical path dependence (Blackler and McDonald 2000).

Just as organisational learning draws on a complex arrangement of learning strategies, the people in Procurement adopt different teaching strategies, both informal and formal to assert their power in the organisation. Some people in Procurement have formal teaching roles in their positions, however they just as frequently engage in informal strategies. Colleagues refuse to enter the details of new / modified supplier forms if the hand writing or fax copy is unclear, waiting instead until the offender calls to enquire why they are unable to access that particular supplier on the system. Although they can fix small errors up on behalf of others, they frequently send incorrect invoices back to people that have made mistakes to "teach them the system". This is particularly the case when "the same people make mistakes all the time" or when people "want us to order things for" them or to do their work. Such a use of power is similar to Nelson and Winter's (1982) concept of *truce in routines*, as discussed in the routines chapter, where a truce prevents organisational conflict through an actor being motivated by the actions

of another (such as sending erroneous invoices back and expecting the appropriate response from them ) – irrespective of both people's position in the organisational hierarchy. Indeed power and politics are a significant reason why routines persist, because conflict is costly and the costs can be avoided by sticking to routines (Nelson and Winter 2002, p 30-31). The justification for this rules mindedness[132] is that if you do not send things back that are wrong, "they will never learn. Firstly, they don't want to do it (learn) and secondly you don't want to do their work for them". For instance on one particular invoice,

> "the amounts receipted were different to those on the invoice and the [overall] amount was slightly different. My colleague took one look at it and complained that the person who had sent it always did things wrong and that she was sick of sorting out his messes. She said she always made a point of returning his mistakes to him… to get him used to the system."

In this situation, such a strategy not only ensures compliance but exercises power in a *legitimate* manner in that the Procurement Officers have been delegated the *authority* (Foss and Foss 2002) to do so, as well as having the *expert power* or *knowledge power*. Returning an erroneous invoice delays payment, inconveniences the person and represents solid control over resources, that is, *resource power*. These strategies also represent direct control of information flows whereby the Procurement group dictates what information they require to pay the invoice and so have a gatekeeper type role, which in itself is a source of power (Pettigrew 1972). This *information power* (Raven 1993, p 235) is related both directly and indirectly to the position the group, and individuals, hold in the formal and informal communication networks (Pfeffer 1981, p 130), as shown by a number of authors (Burns and Stalker 1961; Mechanic 1987 [1962]) and tested by Pettigrew (1972). The decision is discretionary and thus is based on tacit knowledge and to a certain extent know-who. Such actions help teach the

[132] Mechanic (1962) and others discuss how adherence to rules or rules mindedness can be a source of power for participants, particularly lower participants. Such power is demonstrated in the success of work-to-rules campaigns where organisations can virtually grind to a halt if people follow the rules to the letter without the discretion needed to make them work.

system to outsiders and sets precedents associated with what people will accept and what people will get away with, thus becoming *normative power* (sometimes associated with charisma[133]). For instance, one of the informants told a story how there used to be someone in Finance who was so strict with the times of the EFT run that she would never accept any extra cheques or payments after 10:30 on Wednesday, the supposed time they all had to be in. Now however, it is possible to have them do little favours for you by holding the EFT run by an hour or so. Kanter notes that,

> "for those with relatively little organisational power but who must lead or influence others, their control of 'the rules' can represent one of the few areas of personal discretion. They can exchange a bending of the rules for compliance; they can reward their favourites with a lighter application of the rules" (1977, p 193).

These are just a couple of examples of the ubiquity of truces of power in the routines and procedures by which an organisation operates.

In ActewAGL the adherence to the rules is often informal, however they can be used by participants as a way of asserting their power, co-coordinating, blocking or channeling efforts, restricting certain people and achieving outcomes (Perrow 1986, p 21-24) that meet with the individual needs of the rule enforcer. Rules, and the declarative and procedural knowledge they represent, are needed in organisations. They are formal guides for organisational business but in most organisations the adherence to rules is not as rigid as it might at first appear, being more tacit than explicit and often not codified.

[133] Etzioni (1961) extensively discusses charisma as a form of power. Although observational methodologies would logically allow the observation of charisma, I saw little evidence of this at ActewAGL. I suspect that charismatic leaders (at both senior and lower levels) would sit incongruously with the culture of ActewAGL. ActewAGL has a number of influential power bases heading the organisation in the form of the Government, the various boards and joint venture partners and thus a charismatic leader may risk alienating these powerful stakeholders. At a lower level the organisational demographic of engineers and field crews are both reluctant to change and do not need the direction of a charismatic leader as roles, directions and products are historically determined and path dependent. Further work could be done exploring the role of charismatic power in ActewAGL.

### 8.5.6 REMAP Relegation and Removal of Power

Just as in Procurement, the REMAP project provides an example of the exercise of different power types with their blurred and shifting boundaries. When the REMAP project started it was given a lot of legitimacy through resources, including time, money, staff, organisational restructures and support of people across the organisation, as discussed in the routines and change chapters. The process itself had power to promote structural changes to the existing organisation, such as the co-location of Accounts Payables and Purchasing, as discussed in the routines chapter. Thus the REMAP project had *legitimate, structural* and *resources power*. At the time it also provided a strong vision for the organisation and a way forward. Cultural aspects developed around the process, in that a language of its own was created around the eight focal points and the way they were to be addressed. The project addressed the existing culture and tried to work out how to change (ACTEW 1996a; ACTEW 1996b) it and a careful analysis of the power bases, areas of interest and strategies for action was carried out (Pfeffer 1992, p 25-30).

REMAP incorporated analysis, scene setting and resources and aimed to prepare the organisation for change and the exercise of *influence* in order to improve. As part of the analysis, the project saw the circulation of a number of reports and recommendations. Through this channel the people on the project possessed *information power*, directly through the power of persuasion by logical argument and indirectly (Raven 1993, p 235-6) through the suggestions and the provision of certain background documents to people with key decision-making powers. The lengthy period of analysis and scene setting, the resources spent on producing wall charts and merchandise to advertise the project and the presentations the group gave to people throughout the organisation, were part of a strategy to win over resistance and ready the people for change. They also served as a

preparatory device, setting the stage for *social influence* (Raven 1993, p 237-8). Raven (1993) notes that preparing the scene for influence is a particularly useful power strategy but also notes that the blurred boundaries between types of power in that strategy become evident. This scene setting could be interpreted as being *coercive power, referent power, reward power* or even *expert power*, depending on the linearity and premeditated nature of the overall process.

During the life of the project, REMAP was very influential increasing the *personal* and *political power* of its participants. The way the project addressed the tacit elements of culture in explicit terms and became culturally embedded, illustrates *normative power*. As a result of the vast number of resources the project was given, it gained *political power* and at the time was an *authority*, through the *expert* and *knowledge power* of the participants, which impacted on organisational decisions being made and thus is an example of *decision-making power* (Ivancevich and Matteson 2002, p 393). Although the project was stopped before completion, it was beginning to have *reward power* (French and Raven 1968, p 263) in that because of its high profile, the project, through the senior management, had the ability to reward areas that had been flagged as significant to the REMAP project's success and presumably withhold rewards, so exercising *coercive power* on groups that sought not to comply with the change management efforts. The people selected to work on the project either had or quickly developed extensive know-who knowledge and had both tacit and explicit understandings of how the organisation worked or know-what and know-why. As the project developed, the participants could use this knowledge as a legitimate source of *interpersonal power*. This was a useful tool to have with the organisation in turmoil from downsizing, restructures, the implementation of the Goods and Services Tax (GST), Y2K compliance issues and then the privatisation of the company. As discussed

previously, the ability to overcome uncertainty and solve problems is a significant source of power (Hickson et al. 1971; Hinings et al. 1974; Pfeffer et al. 1976; Salancik and Pfeffer 1995) and REMAP was seen to be a problem-solving project and thus gained power for the project and for its participants.

The cessation of REMAP shows the changing power coalitions, but also shows that such projects can impact on the power and decision-making processes of participants long after its demise. That REMAP ceased to be supported and was officially killed when there was a change of CEO, prepared to exercise his *legitimate power* and *authority* shows that organisations are a constant ferment of changing coalitions and shifting power, as discussed in the change chapter. Yet informally the project continued to provide a holistic view of the organisation and a direction when formal directions were opaque, as discussed in the in/formal and change chapters. REMAP had been and continues to be an organising principle for the organisation, either formally or informally, and a source of ongoing power for those involved. People have ongoing power resulting from REMAP because it provided direction and thus still adds consistency to their decision-making abilities. Decision-making, as we have already seen, is integrally related to power and power to the ability to make decisions. REMAP provided an organizing principle, a basis for decisions, and a direction that was covert rather than overt.

### 8.5.7 Covert Power – Dissonance and Subversion

There are all sorts of power and it exists at all levels within an organisation (Mechanic 1987 [1962]), sometimes this power manifests itself in a discordant way. After the REMAP project was killed it continued to provide a tacit, although historically codified

direction for some of the people affected by the project. Yet because REMAP "became a bit of a dirty word" it could not be mentioned nor could the knowledge of its guiding force be explicitly asserted. This is itself a form of power that is often utilised in organisations, that is the use of covert tactics to achieve desired ends. As Morrell, Zald and Rao note, "blurred boundaries exist between covert conflict in terms of its pro- and/or anti-organisational footings" (2003, p 393), in other words covert actions can both support and / or undermine the organisational goal, as can be seen in the REMAP example. Such actions can be supported by people who "contribute and succeed at their jobs … but who are considered outsiders because they represent ideals or agendas that are … at odds with the dominant culture" (Meyerson 2001 quoted in Morrill et al. 2003, p 393) of the organisation at the time. This is not necessarily subversive, but sits on a continuum between the party line, moving to *dissonance* and then *subversion*. Where actions are undertaken in a manner that is not supported by the organisation, are not easily detectable but which do not harm the organisation and may indeed benefit it, I have called these actions dissonant actions. The following section will discuss some of the dissonant and subversive actions at ActewAGL and illustrate that these too are a source of power or at least how power is sometimes enacted.

Subversive tactics are often seen to be negative, but as Morrill et.al note there are different kinds of subversion, including but not limited to sabotage and non-cooperation. Sabotage is one form of subversion in which the goals of the organisation are deliberately undermined through restricting or producing output or the quality of goods, that is damage, destruction or disruption are inflicted on the organisation's property, products or reputation (Morrill et al. 2003, p 395). Sabotage can occur by direct action or by circumvention, the former representing the above form of sabotage where property or products are damaged, whilst the latter refers to actions that result in

other events that indirectly harm the organisation, often through non-cooperation with organisational rules, procedures or superiors (Morrill et al. 2003).

Much of the literature on covert conflict suggests that subordinates or the disenfranchised are most likely to engage in hidden subversive strategies, however people at all levels of the organisation assert their power through these and other means (Morrill et al. 2003). Other less confrontational modes of asserting power through subversive or dissonant methods include non-compliance with things such as expected behaviours or dress codes, engaging in harmful gossip, voicing grievances in circumstances where loyalty is expected, withdrawing, or behaving in a manner that is usually inappropriate in situations that are out of the ordinary such as the office Christmas party (Morrill et al. 2003). These strategies often serve to draw attention away from dissent and make punishments less severe (Morrill et al. 2003) or difficult to administer in the first place because of lack of clear evidence.

The boundaries between the different types of power blur continuously as do the boundaries between *dissonance* and *subversion* and the extent to which these represent the exercise of power or the reaction to powerlessness. Subversive strategies are not per se represented in taxonomies of power however they play an important role because they occur frequently in organisations and often, particularly in the case of covert or dissonant actions, they are not obvious power plays or uses of power. Subversion and dissonance exist in organisations because individuals have disparate personal goals and abilities to evoke power. People frequently enact power through things that they have control or influence over.

The power of individuals and groups in ActewAGL can similarly be seen in a variety of subversive and dissonant actions. The field crews act collectively in their subversive tactics, refusing to document their whereabouts or to accept the authority of the Storemen. When the Procurement team were told off in a meeting by the manager for not being as productive as they might be, they expressed their dissatisfaction and asserted their own power in various ways including working back to show their 'dedication', grumbling amongst themselves and refusing to walk with the walking group on the pretense of having too much work to do. The Warehouse staff banded together at lunch and 'smoko' times after one of them had a run-in with the Team Leader. A dissatisfied Storeman wrote all of his complaints down and once he had left, sent the catalogue of complaints to the CEO, thus asserting his power and protecting his colleagues but not jeopardising his own power base whilst in the position. None of these behaviours directly threatened others nor harmed the organisation, some of them even assisted the organisation to realise and amend situations, yet all are dissonant. As with many things in ActewAGL these responses are quite informal and rely on collective tacit knowledge of the norms of behaviour.

### 8.5.8 Uncertainty and Power

A number of theorists, beginning with Crozier's (1963) study of workers in a French tobacco monopoly, have associated power with the control or reduction of uncertainty (Thompson 1967; Hickson et al. 1971; Pfeffer et al. 1976) or with decision-making under circumstances of uncertainty (Cyert and March 1963). ActewAGL is subject to quite a lot of uncertainty in relation to the frequency and fragmentary nature of change and also as a result of environmental factors in terms of dealing with unforeseen environmental issues (Becker and Knudsen 2005) such as bushfires, storms, droughts

and so forth. In an uncertain situation, the subunits or people most adept at coping with or controlling the uncertainty will tend to gain power (Greiner and Schein 1988, p 33-5; Hardy and Clegg 1996, 625). When people are faced with uncertainty and ambiguity, they often tend to rely on routinisation (Hinings et al. 1974; Becker and Knudsen 2005) or informal social communications as a means of coping with that uncertainty (Pfeffer et al. 1976, p 233; Pfeffer 1992, p 207-8). The social communications or informal social networks then anchor the beliefs and judgments of the actors and thus "reality becomes a consensual social construction" (Pfeffer 1992, p 208) where the influence of others is sought and used to assert one's own power, the way others like us and how we react to them. This is a reciprocal relationship, which increases and redistributes the power of all participants allowing decisions to be made in uncertain or unusual circumstances. For instance the bushfires, as discussed in the in/formal and routines chapters, meant that the normal rules no longer applied. People undertook roles and assumed authority that they usually did not have. This diffusion of power in the uncertainty of a crisis meant that "we got through it relatively easily, it was a big month but there weren't too many dramas that we couldn't overcome. … We definitely weren't prepared for it but we coped relatively well when it did happen." Similarly when the storms hit the South Coast approximately eight months later, "although we were very busy here at the time, the CEO pulled men out and sent them down to the coast to help out" – it was reciprocal, unexpectedly increasing the power of the people involved, ActewAGL and other energy companies. Power does not sit in isolation but is related to interpersonal relations, knowledge and situations.

## *8.6 The Usefulness of the Ethnography of Knowledge in Power*

Although knowledge underlies all action, precisely explicating knowledge in relation to power is sometimes impossible, meaning that knowledge is a clumsy lens on power in some situations. Power is social and people only have power because other people believe they have power and so act accordingly. That is, "it is always necessary to obtain [power] from the others" (Latour 1986, p 276). Therefore knowledge underpins all power. However, this power is sometimes difficult to explain ethnographically. In answering the research questions of 'does the lens of knowledge on an ethnography help to deepen the understanding of specific aspects of the social setting' and 'where, when and how is the Ethnography useful in understanding aspects of the social setting', this section will discuss the usefulness and the limitations of viewing power through the Ethnography of Knowledge. It will then conclude by discussing how the Ethnography of Knowledge can be abstracted theoretically to the construct of power in the social construction of reality.

The Ethnography of Knowledge is very useful at enabling a researcher to understand power relations at a micro level, although this is limited by the proximity of the researcher. The power held by people at an operational level is largely knowledge-based, relying on know-how, know-what, know-why and expert knowledge in the case of the Logistics staff. Some staff are well connected in the social network or have access power, such as the secretaries and so these people also have know-who. At the operational levels power comes from people's understandings of roles and positions, and from their perceived and actual expertise. The knowledge underpinning this power is know-how, expert knowledge and know-who and at this level the knowledge is very observable. However as one moves to a more system-based view of power it becomes more difficult to observe knowledge associated with that power. Just as in change, if a

study could be done which overcame the limitations of observability and proximity, that is, if an army of ethnographers could be placed strategically throughout the organisation, it would be possible to use the Ethnography of Knowledge to abstract to the construct of power. Such a study may find that the knowledge at the higher levels of the organisation in relation to power is based around know-what (in terms of what the system can do), know-who (in terms of who can get things done), explicit, possibly codified knowledge, which is procedural in nature.

At a systemic level observing power through the Ethnography of Knowledge is difficult. Sometimes people gain and lose power irrespective of what they do, and sometimes their behaviours initiate or decrease power without their conscious decision to do so. People and organisations are non-rational and sometimes use power in a non-rational way. These cannot be explained through observational methodologies because such status changes usually occur in a large and complex collection of processes and interactions. The boundedness of the ethnographic method means that observing the actions that represent knowledge does not give an insight into the system as a whole. Power is often structural and systemic, and the weakness of an ethnographic approach means that it is difficult to observe power where the locale of the power is outside the realms of observation, unless, as discussed above we could employ an army of ethnographers in this endeavour.

Although the Ethnography of Knowledge is limited by observability and researcher proximity, using a meta-analysis it is possible to theorise as to its usefulness in understanding the construct in a social reality. At a local level the Ethnography of Knowledge allowed me to see behind the power typologies and to identify the types of

knowledge that underpin the construct of power. If we abstract this to the construct itself we can begin to understand power generally, particularly in how power varies among organisational participants. This has practical implications for the study of power in organisations and for our understandings of power relations, although it has been little explored in the literature to date.

Further, as practitioners, this thesis clearly shows that everybody has some power and organisations function in part through power relations. Disregarding the knowledge-based power of the operational levels could have severe implications for the effectiveness of getting things done in organisations. Power is derived from expertise and truce in routines allows organisations achieve given outcomes. Therefore the management of power relations is an essential part of a manager's role, determining how effective the workers are within the organisation.

Within the construct of power there are a number of sub-constructs that are underpinned by knowledge. These sub-constructs change depending on the granularity of the social situation. For example the Ethnography of Knowledge allows us to see that although explicit, codified knowledge, know-who and know-what reside at all levels, this changes with application. At a lower level the know-what is based on practical expertise, at a more senior level the same type of knowledge is focused on the overall system and for middle managers this is a mix. Even the same construct that means the same thing can change as the granularity changes.

## 8.7 Conclusion

All people have power of various types and in ActewAGL they all use or choose not to use power in varying degrees. Some power bases are legitimate and based on a sense of obligation created through formal, sometimes structural or hierarchical positions. Other forms of power exist including *coercive power, reward power, resource power, informational or knowledge power, normative power, expert power, referent power* and *decision-making power*. Power is exercised by those with *legitimate* positions within the hierarchy, by those who are the organisational 'doers', doing what the organisation does and also in relation to personal goals and choices which may or may not compliment the organisation's espoused goals. Sometimes when personal choices and behaviours override the organisational goals, power can be expressed through subversive or dissonant actions. Power, in its many forms, is not always negative, indeed sometimes, as Foucault notes, power can be positive and productive (Gordon 1980, p 237) – in an organisational sense it can assist with getting things done.

The relationships between the types of power and the circumstances in which they are used are complex, variable and situational. Often the same situation can represent the exercise or potential exercise of many different types of power at once. Sometimes, such as in the case of the utilisation of expert power, network centrality and the ability to draw on or influence decision-making, power is related to knowledge. In other cases however, although using a social constructionist frame everything is related to knowledge, the utilisation of power and the outcomes of that exercise of power are more systemic than knowledge-based. Thus the Ethnography of Knowledge is only partially useful in illuminating aspects of an ethnography addressing issues of power.

This chapter has illustrated a number of examples within ActewAGL of power use, power plays and political situations. It shows that different groups and individuals use and respond to the use of power differently, and utilise resources, allies and social relations according to their personal goals, desired outcomes, organisational position and goals. Often the ability to cope with uncertainty increases the power of that group or person with that ability. The abstraction that is power is complex and ranges from passive acceptance – the choice to accept the power of another, to subversive strategies and then on to a response that is in itself combative or coercive.

Observation of power relations provides an interesting insight into the organisation, however, because of the fluid and ever changing nature of power in organisations observational methodologies can only provide a snapshot of the environment and even then only a local one.

# 9 Chapter 9 – Conclusion

## *9.1 Introduction*

This thesis provides an organisational ethnography of ActewAGL, a multi-utility company, testing the usefulness of the Ethnography of Knowledge focusing on the themes of routines, in/formal, change and power.[134] This thesis develops the methodology of the Ethnography of Knowledge, which uses ethnographic techniques to provide an account of the socially constructed social setting and then in the analysis phase assigns various knowledge taxonomies in order to gain an understanding of the social situation and the knowledge underlying it. It then empirically tests this methodology to see how, when and where it is effective in providing a knowledge-based understanding of the social setting.

As a result of doing analysis and trying to understand the usefulness of the Ethnography of Knowledge a number of facets of organisations have been explored and as a consequence a number of incidental theoretical contributions have been made in various literatures, that is, they have been a by product of looking at the Ethnography of Knowledge. The primary contribution of this thesis is methodological. As a consequence it is difficult to assign a candidate literature in which this thesis sits. The most obvious is the organisational ethnographic literature,[135] as this study provides an

[134] These four themes form the data chapters. In this context the following definitions apply: Routines are all regular and predictable patterns of [interaction and] behaviour in organisations; Informal represents those interactions, artefacts and processes which are not specifically endorsed or directed by the procedures and processes of the organisation but which are characterised by a degree of spontaneity, casualness and intimacy and which generally lack predictability / Formal in contrast represents those processes, interactions, events and artefacts (including documents) that are endorsed by the organisation, often in written or codified form; Change is the transition, alteration or modification from one state to another; and Power is defined as the potential ability to influence the behaviour of other people so that they do things that they otherwise would not.

[135] It is for this reason that I chose examiners familiar with the methodology of participant observation in organisations.

organisational ethnography and uses ethnography as a methodology. The study also sits within the social construction literature, particularly the social construction of knowledge literature.

This study has shown that in ActewAGL work gets done through a combination of many aspects including organisational routines, informal customs, processes and networks, formal structures and artifacts, and a complex virtual minefield of power relations – all imbued in a cauldron of constant fragmentary change from both bottom-up and top-down. Knowledge and knowledge-based actions permeate throughout every aspect of the organisation. However, studying and managing that knowledge in isolation means doing so void of context resulting in knowledge becoming everything and everything being interpreted as knowledge. Thus knowledge is best used in organisations as a means of understanding the limitations of the environment and how work happens. That is, as a means of adding context to constructs such as routines, power, change and in/formal. Using participant observation allows you to see the knowledge-in-action and to provide an interpretive context for observed situations. Using knowledge types allows an understanding of how the other constructs link and work together. For example without knowledge types providing context it would be easy to assume recalcitrance or incompetence in routines. By analysing the situation using knowledge types it is possible to identify that participants use cognitive processes rather than an information processing view when selecting task variations. Similarly, without knowledge power appears to be based on authority. With knowledge the observer notes that all levels have power and that much of the power at the operational levels of the organisation is knowledge-based. Changes occur because of know-why at the operational levels and through know-who in the middle levels of the organistion.

Without the application of knowledge types on the observed actions such interpretations would not be possible.

In sum, organisations are socially created work environments where 'how things get done' is important. Understanding how things get done requires contextualised knowledge of participant actions as they work through organisational routines, understand informal aspects, deal with power and cope with change. The Ethnography of Knowledge allowed me to incorporate the importance of studying knowledge with the power of the ethnographic method in observing the social actions. It enables one to test to see if various literatures can be usefully looked at as being knowledge-based. It also shows that although the Ethnography of Knowledge is a useful way of understanding an organisational social setting and myriad of knowledge types that affect and underpin it, it is not always equally useful. It allows an understanding of the types of knowledge that underpin actions, how that knowledge affects various constructs within the social setting and how the situation is socially constructed. Yet, despite its usefulness the Ethnography of Knowledge is also limited by the costliness of the methodology and the proximity of the researcher to the knowledge-based action.

In addition to exploring the usefulness (**Output 3** – Figure 2.2) of the flexible methodological approach of the Ethnography of Knowledge (**Output 2** – Figure 2.2), the thesis also makes a number of significant methodological, theoretical and locational contributions. Firstly, knowledge is significant in organisations, as shown through the vast array of literature that emphases the importance of knowledge to the functioning of organisations. The thesis has contributed to that literature by developing and empirically testing the Ethnography of Knowledge as a method of understanding social situations. It

also contributes a means of assessing whether organisational constructs and their associated literatures can be viewed as knowledge-based. This understanding of the social situation can, when analysed further, result in insights into the structure and construction of the knowledge underpinning the situation and the forces that lead to this being so.

Secondly, the thesis makes a number of chapter specific but incidental theoretical contributions. In the relevant data chapters the thesis makes some contributions to do with routines, informal processes, structures and networks and formal structures, processes and artifacts, change and power.

Finally, the thesis makes a locational contribution by bringing together the themes to provide a rich ethnographic picture of ActewAGL, a water, gas and electricity utility company based in Canberra, Australia (**Output 1** – Figure 2.2).

This chapter brings the separate elements of the research together by providing a summary of the research findings and the methodological, theoretical and locational contributions. The chapter discusses the logic of the thesis and provides an overview of the research, placing it in the context of the field of study, possible future research stemming from this work and limitations of the study.

The main methodological, locational and theoretical contributions, discussed in section 9.5, are outlined in Table 9.1, below.

**Table 9.1Summary of Contributions**

| Contributions | Description of Contribution | Confirms | Extends | New | Practical Implications | Chapter |
|---|---|---|---|---|---|---|
| The Ethnography of Knowledge (methodological) | Develops and tests a practice-based methodology, combining the application of knowledge taxonomies with observed actions in the social setting in order to assist with gaining an understanding of the social situation and the knowledge which underlies it. | | | ✓ | The Ethnography of Knowledge changes the way that we view knowledge in organisations and has practical implications for the management / study of knowledge and the way we classify, access and develop our knowledge-bases. In order for knowledge to be a useful lens on an organisation it must be contextualised and studied along with other organisational constructs. This methodology could be developed further as a basis for future ethnographic research into organisations. Alternatively further research could be done by expanding the Ethnography of Knowledge to incorporate other constructs, organisations or even the wider social setting. | Chapters 1-9 |
| ActewAGL (locational) | New field site (ActewAGL), which has the unique position of being one of the world's few multi-utilities and one of few private and government, owned enterprises. | | | ✓ | This study is the first of its kind into ActewAGL. There are opportunities for the organisation to learn from the findings. Many of the practical recommendations from the research, particularly in relation to the Warehouse, have already been implemented by Logistics. Further work could be done exploring other areas of the organisation, other utility companies or utilities industries. | Chapter 4 and throughout thesis |
| Organisational Ethnography in Australia (locational) | Australian Organisational ethnography where the existing literature is sparse | | ✓ | | There is a dearth of Australian ethnographies. This thesis contributes to that area and begins to introduce the ethnographic method into an Australian organisational context. | Chapter 2 |
| Knowledge-based literature (theoretical) | Testing whether a particular literature can be usefully empirically looked at as being knowledge-based. | | ✓ | ✓ | Knowledge-based theories tend to assume that understanding can be derived from focusing on knowledge. Many other theorists ignore whether knowledge is a useful factor in understanding. This work empirically assesses whether theoretical constructs are knowledge-based or not. | Chapters 1-9 |
| Testing routines theory from within (theoretical) | Empirically tests routines theory from within the routine. This has not been done before from the | | ✓ | ✓ | There has been very little empirical work into routines. Given the prominence of the routines literature in organisational theory empirical | Chapter 5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | perspective of a full participant in the routines only from the perspective of observing others rather than participating. | | | | work such as this lays the foundations for further exploration and begins to test the theory at a practical rather than theoretical level. | |
| Problem-solving as a characteristic of routines (theoretical) | Adds the characteristic of problem-solving to routines theory as a result of empirically testing routines theory from within. | | ✓ | ✓ | There has been a tendency to view routines as self-actuating and mindless, this finding contradicts this and suggests that routines theory should incorporate another characteristic – that is, problem-solving. This has implications for work on routines and for the incorporation of agency into routines theory. | Chapter 5 |
| Routines are not self-actuating and participants do change routines (theoretical) | This study confirms the findings of the few empirical studies into routines and shows that participants do not enact routines in a state of mindlessness and that they do change the routines in which they participate. | ✓ | | | This is contrary to some of the literature on routines that assumes routines are stable and unchanging. This provides opportunities for further empirical work and work into how participants change the routines, leading onto further work addressing sequential variety or choice in task processes. | Chapter 5 |
| Three-mode model of in/formal (theoretical) | Three-mode model of in/formal allowing the researcher to identify aspects of the organisation and whether they are informal or formal or whether they are in-between. | | | ✓ | This work provides a basis for exploring in/formal relations, events, artifacts, processes and structures in organisations, something often discussed but not often explored in depth. | Chapter 6 |
| Ethnographic study of change in organisations (theoretical) | Ethnographic study of change in organisations from within. This has not been done to any great extent. The study confirms, as the literature would predict, that there is no single change typology that represents change in all situations in organisations. | ✓ | ✓ | | Few studies of change employ ethnographic methods so this study contributes to that literature but also provides opportunities for further studies of this kind. The Ethnography of Knowledge is limited in understanding change so other studies would need to consider the costliness of the method and devise ways to ensure observability throughout the organisation. | Chapter 7 |
| Ethnographic study of power in organisations (theoretical) | Ethnographic study of power relations in organisations from within. This has not been done to any great extent. The study confirms that people at all levels of organisations have and exercise some degree of power. | ✓ | ✓ | | This shows that whilst there are opportunities for gaining a greater understanding of the practical bases and uses of power in organisations, there is a need for multiple ethnographers in order to cover the multifarious aspects of power. | Chapter 8 |

## *9.2 Research Issues / Questions*

Over an eight and a half month period in the Logistics Branch of ActewAGL I sought to address a number of research issues using emergent ethnographic methods coupled with interviews, Social Network Analyses, complexity, discrepancy and document analyses. Firstly,

- Does the lens of knowledge on an ethnography help to deepen the understanding specific aspects of the social setting?
    - If helpful, how useful is the Ethnography of Knowledge in providing an understanding of aspects of the social setting such as power, change, informal/formal and organisational routines?
    - Where, when and how is the Ethnography of Knowledge useful in understanding aspects of the social setting?

At a secondary level the research also addresses issues related to the data chapters including:

- How valid are the characteristics and roles of routines from the perspective of a full participant in the routines?
- How can in/formal interactions and processes be viewed in an organisational environment?
- What are the characteristics of change in ActewAGL?
- What are the applications of power in an organisation such as ActewAGL?

In conducting the analysis I used qualitative methods (Glaser and Strauss 1967; Miles and Huberman 1994) aided by the NVivo program (Richards 2000; Bazeley 2003) for coding and analysis of the results. The analysis of the data resulted in approximately 250 individual codes, and over thirty memos. Four of the most significant codes in terms of numbers and inter-linkages form the four data chapters (Chapters Five to Eight) and combined provide a rich ethnographic picture of ActewAGL, showing how the work gets done.

## *9.3 The Logic of the Thesis*

The logic underpinning this thesis is unusual for research into an organisational area, being based on developing a methodology, with theory testing / building taking a back stage. It is based on the power of ethnography at viewing the knowledge underpinning the social situation. Throughout this thesis I have used a series of significant themes that emerged in the research; these themes are important in ActewAGL but are also directly related to significant theoretical constructs in the literature on organisations, and when combined these themes form an overall picture of ActewAGL. I have used these theoretical constructs or themes as a device for exploring how useful, powerful and valid the Ethnography of Knowledge is in researching organisational situations. By looking at both the organisation and a series of theoretical constructs I am able to rigorously test the usefulness of the Ethnography of Knowledge. The rationale behind this is that if I am able to draw out the knowledge underpinning the themes of routines, in/formal, change and power whilst providing added exploratory power in understanding the field site, then the Ethnography of Knowledge is a useful tool – as this thesis does indeed show. In addition to this I have reflexively analysed the Ethnography of Knowledge in relation to each of the constructs or themes listed above to see if this allows a deeper knowledge-based understanding of those constructs. This reflexive meta-analysis allows me to verify the power of the Ethnography of Knowledge, where, how and why it works at looking at the various constructs in certain social situations and provides a deeper understanding of the socially constructed reality of the field site.

## *9.4 Overview*

Through the Ethnography of Knowledge this research operationalises the view that by using knowledge types and the associated actions as a lens, one is able to gain a greater understanding of the social setting. I have done this because despite a plethora of past research on the importance of knowledge in an organisational context, ranging from the knowledge-based theories of the firm, social capital, Knowledge Management and organisational learning, a question remained for me as to how to identify and operationalise that knowledge in organisations and how to incorporate real people in actual situations into the knowledge equation. With these issues in mind and my pre-PhD experience of using ethnography, I adopted an ethnographic approach to knowledge[136] in the Logistics Branch of ActewAGL, combining knowledge taxonomies with an observational approach to produce the Ethnography of Knowledge, as discussed in Chapters Two and Three. I did this by observing actions in the social setting and assigning knowledge types from the knowledge-based literature to the particular action in context.[137]

The Ethnography of Knowledge is similar to Barth's (2002 ) theory of the Anthropology of Knowledge, which theoretically proposes that by using knowledge as a basis for explanation one is able to add to ethnographic traditions and can gain a greater understanding of the social setting under study. In this thesis I have tried to operationalise and test the usefulness of a similar approach using a practice-based

[136] Knowledge is not directly observable but it is socially constructed and carried out through actions that are visible to the observer.
[137] Many authors have provided taxonomies of knowledge in order to try and answer epistemological questions and somehow determine what knowledge is. Most of these attempt to classify knowledge according to a single taxonomy. I have not attempted to understand what knowledge is but have drawn on many pre-existing knowledge taxonomies because I feel that it is necessary to use a combinatorial approach and that doing so aids our understanding of the knowledge-based actions more than a single taxonomy. Thus my work does not so much add to the literature that uses knowledge taxonomies as a means of explaining knowledge in epistemological terms but rather utilises the vast literature of this nature to aid my understanding and to contribute to the methodology of the Ethnography of Knowledge.

methodology to investigate when, where and how it is useful in an organisational context.

Observational methodologies are particularly well suited to the study of social settings including organisations, and thus I have adopted participant observation (Spradley 1980; Agar 1996) with a confessional tone (van Maanen 1988; Bell 1999; Schultze 2000) as my primary methodology in undertaking this study, as discussed in Chapter Two.

## *9.5 Research Findings / Contributions*

This research makes methodological, theoretical and locational contributions, ranging from developing and testing the usefulness of the Ethnography of Knowledge, through to chapter-specific contributions of a theoretical and ethnographic nature and field site specific contributions. Since part of my contribution is to assess and discuss the usefulness of the Ethnography of Knowledge (**Output 3** as shown in Figure 2.2) I will talk equally about areas where the Ethnography of Knowledge is useful (routines and in/formal) and areas where it is not such a useful methodology (power / change) as this highlights the strengths and weaknesses of the method. The following section further explicates the contributions outlined in Table 9.1.

### 9.5.1 Methodological Contributions – The Ethnography of Knowledge

Methodologically this thesis provides a way of empirically combining knowledge taxonomies and ethnography (the Ethnography of Knowledge) and tests how useful this approach is in studying an organisational social setting and to abstracting to the

constructs under study generally. By observing actions in context the types of knowledge underpinning the actions can be derived by assigning an array of knowledge taxonomies. This has not been done before at a micro-level but is necessary given the wide-ranging literature emphasising the importance of knowledge in organisations and my experience with the strength of ethnographic methods.[138] This section will highlight the methodological contribution of this thesis by outlining the usefulness and the limitations of the Ethnography of Knowledge generally and then discussing its utility in understanding the constructs of routines, in/formal, change and power.

The Ethnography of Knowledge allows us to begin to understand whether organisational constructs, such as power, change, in/formal and routines, are knowledge-based. This work could be developed further to address assumptions made in the knowledge-based literature, which often tends to assume that all aspects of organisations can be explained through a knowledge-based lens. Some other approaches ignore knowledge-based explanations. This work goes some way in showing the empirical strengths and weaknesses of the knowledge-based approach in looking at four theoretical aspects of organisations.

The Ethnography of Knowledge is particularly useful allowing a greater understanding of the social setting at a micro level, when the knowledge can be observed directly, as in

[138] Just prior to submission of this thesis I double-checked the contribution of this thesis on the web. Interestingly I came across a webpage that referred to a workshop held at a conference. The session of the EASA Conference was entitled 'Ethnographies of Knowledge – from cognition to fieldwork' (See http://www.pet.au.dk/~andreas/seminars/EASA/index.htm ). Like my own work it was motivated by the fact that "knowledge', as a privileged focus of analysis, has not yet received a great deal of attention within mainstream ethnographic and social anthropological discourse" and by the question (amongst others) of "what are the methodological implications of an analytical focus on knowledge". Some of the papers in the workshop even (to my great consternation) used the term the 'Ethnography of Knowledge', however, these papers do not focus on combining knowledge taxonomies with ethnographic methods as I have defined it. Rather they focus on anthropological knowledge, local knowledge or cognitive aspects of knowing and memory.

the case of organisational routines or in/formal interactions and processes, or when the observer is close to the source of decision-making. The use of the Ethnography of Knowledge becomes less efficient for understanding the social setting the further one gets away from the source of the knowledge. For example, workers at an operational level rely heavily on knowledge-based power because the routines that enable them to exercise their power are knowledge-based, however at a more senior level power relies more on considerations of who the player is, their title and formal responsibilities rather than what they know. In the case of this study I was unable to specifically observe the actions of more senior players[139] and so found it more difficult to assign knowledge categories to these situations. Constructs, which are local and / or clearly knowledge-based, such as routines or in/formal, can be analysed through the Ethnography of Knowledge. In contrast where constructs are not locally held or explicitly knowledge-based, such as much of change or power, the Ethnography of Knowledge is a less powerful tool in providing understanding.

To a certain extent knowledge is useful in providing an understanding of routines. Knowledge is embedded in routines and routines are enacted at a local level, therefore the use of the Ethnography of Knowledge in the interpretation of the actions associated with routines in a social setting is very effective, as discussed in Chapter Five. Routines are a knowledge-based construct which necessarily use a number of observable different knowledge types, including tacit and explicit knowledge, and a social constructionist framework as part of the rationale and thus, as expected, when using the Ethnography of Knowledge as a means of abstracting understanding of the construct these and other forms of knowledge are clearly evident. A rational information processing view of

[139] Although I was unable to directly observe the actions of senior people at ActewAGL, had I been situated with them I would have been able to do so. This is indicative of the costs associated with the ethnographic method – the ethnographer can only be in one place at a time and a comprehensive study of an organisational social setting would require numerous ethnographers working in tandem.

knowledge is inadequate when looking at routines. Yet, despite its usefulness in identifying knowledge types in a local knowledge setting, the Ethnography of Knowledge does not show all aspects of routines. For example, where routines embody truce or are historically path dependent an observer is unable to see or may not have the historical understandings to be able to use knowledge to explain such aspects.

The Ethnography of Knowledge is also a very useful tool in analysing in/formal aspects of an organisation. Informality and formality are reliant upon individual social relations and patterns of action and therefore tend to be readily observable using knowledge as a lens, as shown in Chapter Six. By definition, formal aspects of an organisation are usually codified, public and explicit and the Ethnography of Knowledge readily allows the identification of codified aspects. Informal aspects, such as the feedback / communication model[140] or personal interactions, tend to rely on know-who or tacitly held, private but explicit know-what, why or how and thus these too are readily observable through the Ethnography of Knowledge. Because of our ability to understand degrees of informality and formality as part of our shared social experience, these lend themselves to being able to be effectively explored through the Ethnography of Knowledge, almost irrespective of the closeness of the study group to the actions, processes, documents or interactions that initiate action.

The Ethnography of Knowledge is a useful methodological tool at a micro level, as shown above, however as the effect of change is often felt at a macro level in organisations change is less effectively observed through the lens of knowledge, as discussed in Chapter Seven. Change affects the whole of the organisation and thus

[140] See Figure 6.3, Chapter Six.

although the ethnographer can observe the effect of change on the study group I was often too far removed from the initiation of the change to be able to utilise knowledge in understanding the actions related to change. Further, knowledge taxonomies are of limited explanatory value in this situation because often action related to change processes is too complex to observe fully. If, however, we utilise a meta-analysis the Ethnography of Knowledge could be useful in providing great understandings of the construct of change in social settings. If different parts of the organisation are studied[141] it may be possible to see differences between change at a micro level, (based around know-who, expert knowledge, and declarative knowledge), and at a macro level where it may be more heavily reliant on know-what of systems and the strategic goals, know-who in terms of who can make things happen and procedural knowledge.

The Ethnography of Knowledge is variable in its effectiveness in understanding power in organisations, as is evidenced in Chapter Eight. The Ethnography of Knowledge allowed me to see behind the power types, to identify the types of knowledge that underpin the construct of power and to see that the power held by people at the operational level in the organisation is often knowledge-based. This power can effectively be observed using the Ethnography of Knowledge, however as we move further away from knowledge-based power it becomes more difficult to understand. Just as in change, lack of observer proximity to the power source, decision-making or relations makes the Ethnography of Knowledge less useful. Also as with change, sometimes people do things related to power for reasons inexplicable to themselves or others, because they can or because it is part of their job to do so, some of these aspects are most certainly not understandable via observation. Again, although the Ethnography

[141] Using the Ethnography of Knowledge at various points throughout the organisation assumes that the costliness of the method could be obviated and that results would be forthcoming with an army of ethnographers on the job.

of Knowledge is limited by observability and researcher proximity, it is possible to abstract as to its usefulness in understanding the construct of power in a social reality. Using the Ethnography of Knowledge we are able to understand how the different knowledge types affect power at various levels ranging from the legitimised know-what, explicit and procedural knowledge of senior management to the knowledge-based power, know-who, know-how and expert knowledge at the operational levels. However, as already noted, the Ethnography of Knowledge is only partially useful in understanding constructs such as power or change.

### 9.5.2 Locational Contribution – ActewAGL

In addition to the methodological contributions, locationally the thesis provides a study of a new field site and contributes to the field of organisational ethnographies. This study is one of very few Australian organisational ethnographies[142] and is the only ethnographic study of the utility company, ActewAGL (**Output 1** – Figure 2.2). ActewAGL itself is in the unique position of being both a government and private organisation as well as one of the world's few multi-utility companies, thus enhancing the contribution of the study. As such it contributes a locational study and provides an exploration into Australian utilities.

### 9.5.3 Theoretical Contributions

Each of the constructs presented in the data chapters are inter-related and interdependent throughout the research. Although I have presented each of the literatures as relatively

[142] Indeed I have been unable to find any other published book length ethnographies of Australian workplaces, although there may be some which I have been unable to locate using keywords and other search limiters. This is confirmed by Hodson's (2004) review of the literature of work ethnographies which also fails to identify any obvious Australian work ethnographies.

independent, when taken as a whole the connections between the chapters provides a powerful overall picture of ActewAGL. ActewAGL as an organisation is a rich and complex combination of work that is carried out through routinised processes, informal networks and formal structures all of which occur within multi-level power relations in a climate characterised by the need to balance historical path dependence with constant change. Knowledge underlies all work and that work is mediated and managed through social processes, the organisational environment and culture, making the Ethnography of Knowledge an ideal way of gaining some understanding of that social setting. The theoretical contributions appear throughout the data chapters, each of which is discussed below.

This work empirically tests the large and growing theoretical area on routines, ably summarised by Becker in his reviews of the routines literature (2003; 2004), and does so from the perspective of a full participant in the routines. This is important because as Becker notes, "there have been few empirical investigations into the nature of routines" (2005a, p 250). This work goes some way to addressing that gap. I found generally that routines theories are applicable when applied from within and that most work in Logistics is routinised as theory would predict. However in contrast with much of the literature on routines (with notable exceptions being empirical work, particularly observational research see Pentland (1992) and Feldman (2000; 2003)) I found that routines do change and that they are not carried out in a self-actuating or mindless fashion. This view stands in contrast with both some theorists (Ashforth and Fried 1988 cited in Becker 2004, p 648) and with those partial to the information processing view (Galbraith 1987 [1973]) who assume that if a routine is procedurised and if everyone

followed the routine there would be no errors.[143] Indeed I contribute a new characteristic of routines, that being that they require problem-solving on the part of the participants in all but the most formulaic of routines. Although problem-solving is not an area of routines that has been explored, authors such as Cohen and Dosi theoretically note their importance and suggest the necessity of incorporating problem-solving into the studies of routines (Cohen and Dosi in Cohen et al. 1996, p 670). This study takes that theoretical suggestion and empirically incorporates it into the study of routines, confirming in-practice their theoretical suggestion as to the importance of including the characteristic of problem-solving in routines. Such problem-solving reflects the fluidity of the routines and the flexibility that they provide in allowing the work of the organisation to occur.

Work occurs and things get done in ActewAGL largely through informal networks and processes. Organisations have to have formal and informal aspects in order to be able to function in the world (Dalton 1959; Barnard 1968 [1938]). This has been widely acknowledged in the organisational literature although often the terms are used as almost polarised descriptors and not explored in depth by many authors. I add to this literature by proposing that in most cases work gets done between the formal and the informal, blurring between the two, as my model shows.[144] Chapter Six of this thesis contributes a structured exploration of informality and formality in organisations from the perspective of a three-mode model of formality, informality and how it is executed. This three-mode framework addresses an area little explored in the literature, the oscillation between the informal and the formal. It is based on the assumption that

[143] Such an information processing view was prevalent in the Warehouse but the reality is that the processes are not rigidly followed and that individuals do change the routines using their problem-solving skills and their knowledge of the situation, as discussed in the routines chapter.
[144] The model confirms in-practice the theoretical speculations of people such as John van Maanen who have begun to suggest that this may be the case (see for example (van Maanen 2001, p 241).

differentiating between the formal and the informal allows you to see the trend towards one or the other in an organisation but most importantly to clearly identify the middle ground and blurring relationships which allow events, processes etc to occur between the formal and the informal.

The thesis contributes an ethnographic exploration of change and power respectively from within an organisation, so confirming a number of theories expressed in the change and power literatures. For example my work confirms what the literature would predict, that there is no single change management typology which reflects all change in organisational situations and thus a combination of approaches is necessary (Dunphy and Stace 1988; Orlikowski 1996). I explicate the nature and frequency of change in ActewAGL, concluding that ActewAGL is characterised by constant fragmentary change from both top-down and bottom-up. However I assert that because the organisation is largely driven informally and because the core business is both relatively stable and path dependent the participants are able to cope with these changes. The coping mechanisms adopted are socially constructed and embedded in the knowledge of participants.

Chapter Eight discusses the ambiguity of organisational structures and the impact that this has on power in ActewAGL and shows that, as the literature would predict, different people use the power they possess in different ways (Mechanic 1987 [1962]), including in subversive strategies, making changes to the system or through asserting their legitimate authority. Thus this thesis supports the view held in much of the literature that "organisational members have some control over their disposition to exercise power" (Hardy and Clegg 1996, p 624). Many authors in the literature have

noted the multifarious uses of power in organisations and the variety of types of power (French and Raven 1968; Pfeffer 1992), yet there is still no consensus on power in the literature and an ongoing "confusion that exists concerning the definition of power" (Hardy and Clegg 1996, p 636). This thesis shows that whilst power at the operational levels is knowledge-based and often informal and endorsed through organisational routines, at higher levels it is more based on the socially constructed norms and values of legitimacy.

## *9.6 Limitations of the Study*

Like all studies, this research is limited by a number of factors including knowledge as a construct, the inability to define the organisation as one thing or another, observability and the scalability and costliness of the method. The following section discusses the limitations of the study.

### 9.6.1 Knowledge

As a field of endeavour, knowledge (and associated frameworks and taxonomies) is a huge area of study, occupying the minds of humankind for thousands of years in various attempts to get a firmer grip on the concept. Bearing this in mind I never intended to discover the 'secrets of knowledge' itself, partly because this would have been either too big or too narrow and my time in the field would have resulted in a lifetime of philosophical wanderings, not compressible to 100,000 words. Besides, my endeavours were hampered from the beginning because I am neither a philosopher, nor (I hope) incomprehensible and thus could never hope to uncover such 'secrets'. Thus I chose to use knowledge taxonomies as a means of adding depth to the ethnographic account rather than to embark on the near impossible task of trying to explain knowledge itself.

Using knowledge taxonomies generally worked well, although in some cases were a flawed lens by which to explain aspects of the social setting. For the most part, the knowledge taxonomies outlined in Chapter Three and used throughout the thesis, provided a means of classifying the knowledge associated with behaviours whilst still allowing the ethnographic account to take precedence. However, these too represent limitations. I have used some of the most common taxonomies but there are others, perhaps others that have not yet been articulated and that may be better suited to this work. The study is thus limited by the choice of the taxonomies or possibly by the exclusion, deliberate or unconscious, of others. Such a compression of the choice of knowledge taxonomies may limit our understanding of knowledge and how it affects behaviour in organisations.

Another limitation is that ethnographic studies tend to adopt a cognitive view of knowledge and of the environment. That is, ethnographers look for and identify patterns in the behaviour of their interlocutors, patterns that may lack logic to the observer and even to the people under study. Human groupings are complex, variable and they are not necessarily fully explicable. Human cognition is not able to fully understand the complexities of a social situation, thus a limited view is all that is possible.

### 9.6.2 Organisations as X

The description of a culture, organisational or otherwise, must, by its nature, present that culture as a snapshot. Organisational cultures are fluid and ever changing and as Tsoukas and Chia note, “what is so distinctive about the ethnomethodological approach to organisations, … is its insistence on capturing the dynamism and ever-mutating

character of organisational life" (2002, p 577). One of the limitations of a study such as this is that despite the fluidity of organisations, once the analysis is committed to writing there is a risk that the organisation could be seen as stagnant or not likely to change. Despite committing the study to paper we must remember, as James Clifford said, "Cultures do not stand still for their portraits" (in Clifford and Marcus 1986, p 9).

I have tried to capture the organisation as just that - a snapshot, with the very real possibility that such generalisations are tomorrow's straw men blown away in whirlwinds of change. This study presents a snapshot of the organisation. In presenting the snapshot I have sometimes generalised about the characteristics of the organisation or of behaviours displayed therein. Yet, it is difficult to say ActewAGL is an X type of organisation. It is important to recognise that organisations are contingent, path dependent entities dominated by various individuals, agendas and fluid themes all jostling for lead position.

### 9.6.3 The Eye of the Beholder

Whilst ethnographic accounts attempt to show the social setting from the perspective of a participant, that view is itself limited. My perspective of ActewAGL is coloured by my experiences previous to and in the Logistics Branch, by the values and beliefs of myself and my colleagues in that environment and by the historical path dependence of that particular area. Had I done my research out in the sun with the field crews or closeted on the seventh floor with the executive, I may have had a very different perspective of the organisation. As Rosen says, "no matter how we might look at a particular set of data, another analyst, differently situated – in time, education, gender,

ethnicity, age, and so on – will likely highlight different patterns of meaning against the same background of raw information" (1991, p 21).

The Ethnography of Knowledge is also limited by what the ethnographer can see. The Ethnography of Knowledge allows an excellent micro view of the world under study but this is limited in the cases of power and change when it becomes necessary to abstract to a more macro level. My colleagues in Logistics and I were affected by the power relations and changes from the wider environment, however I could not use knowledge to so effectively explain these wider impacts. I could see the way people acted at an operational level and could explain their actions by the use of various knowledge taxonomies however I could not explain the reasoning behind decisions of the CEO, of other areas or even the actions of the personal assistants or field crews without directly observing these other actors for a long period of time. The Ethnography of Knowledge is limited by the proximity of the ethnographer to events; it is limited by the eye of the beholder.

### 9.6.4 Scalability

Although ethnographic methods are extremely useful in providing insights into an organisational setting, the methodology is not infinitely scalable. Ethnographic techniques coupled with other methodologies such as Social Network Analysis and mapping, interviews, document and complexity analyses have provided me with the tools to gain a comprehensive overview of the Logistics Branch of ActewAGL. The methodology is limited however by the need to be able to observe the people in the environment. In an environment with only thirty people the methodology is easily adopted. I have previously done this in an organisation with just under 100 people but

felt that this was getting a bit unwieldy, as I was unable to observe all of the people and their regular interactions. There are limitations in terms of size of the study group and in terms of the accuracy of the data when groups get too big. It also has limitations in that the methodology itself is very labour intensive and thus costly in terms of time and resources available.

Whilst there are limitations with all studies, the limitations outlined above do not detract from the findings of the study but rather provide a platform for future research.

## *9.7 General Implications, Recommendations and Future Research*

Despite the limitations of the study, this research presents future research opportunities and has implications for such research. These are outlined in the following section.

### 9.7.1 The Ethnography of Knowledge

That the Ethnography of Knowledge is most useful in situations where the ethnographer is able to directly observe micro-level activities or the actions associated with knowledge has implications for further research in both organisational and non-organisational settings. The Ethnography of Knowledge is a useful tool but careful thought needs to be given to the choice of study and the appropriateness of the using knowledge as a means of gaining insights into all situations. Yet, methodologically this could perhaps be developed further as a basis for ethnographic research into organisations generally and perhaps for specific aspects such as power and change. Alternatively further research could be done by expanding the Ethnography of

Knowledge to incorporate other constructs, organisations or even the wider social setting.

### 9.7.2 Knowledge – A Taxonomical View

The use of knowledge taxonomies provides exploratory opportunities for future research, expands the way we view knowledge-in-use in organisations and allows for the development of alternative views of the social setting. Using knowledge methodologically has implications for the management of knowledge in organisations generally and for the way organisations classify, access and develop their knowledge-bases. Spender's review of the state of Knowledge Management notes that "we probably need a rich mix of disciplines …[and] a profound reassessment of our research methodologies" (2005, p 116) in order to move KM forward. This work, like the work of Patriotta reviewed by Spender, begins to "scout the more radical ground [in the discipline of Knowledge Management] where our theories must be reconstructed after replacing the familiar rational choice assumptions with empirically grounded ideas about how we choose" (Spender 2005, p 116), in that it provides a new methodological approach to the study of knowledge focused on knowledge-in-practice rather that knowledge as a theoretical construct. Managers or organisational researchers trying to systemically understand and influence organisational social structure, decision-making and knowledge flows, could use this research as a basis for doing so. Knowledge is traditionally approached theoretically, however future research could use this work as a basis for exploring knowledge further in methodological rather than theoretical terms.

Through a multi-layered approach to knowledge-in-action I gained insights into the complexity of socially constructed knowledge. A multi-layered approach is needed

because knowledge-based actions are too complex to classify when constrained by single taxonomies. It is recommended that taxonomies of knowledge be used as a lens for further research, particularly when combined with ethnographic approaches. Care must however be taken in the choice of field site as the knowledge taxonomies are not particularly useful when conducting an analysis at the whole-of-organisation level.

The use of knowledge-in-action in this research goes some way to realising the potential for the exploration and understanding of social settings using knowledge as a focal point, however it falls short of "developing a comparative ethnographic analysis on how bodies of knowledge are produced in persons and populations in the context of the social relations that they sustain" (Barth 2002, p 1). There is further potential for ethnographic research to incorporate knowledge as a methodological lens and to explore this comparatively both in terms of other organisations and the wider study of social settings.

### 9.7.3 The Role of the Ethnographer

Throughout this study I had clearly defined roles, specific tasks and responsibilities and a purpose within the social group, making acceptance into the field quick and clean, particularly as I contributed to the social setting. Having a dual role as worker and researcher increased the intensity of the research effort requiring a great deal of time outside the 7:30am-5pm day but it meant that I was able to be a true participant. This also no doubt clouded my objectivity at times as I sympathised with injustices, was frustrated by mistakes (of myself and others), shared the communal spirit of celebration and felt the burden of staffing or resource shortages. Yet, I believe having a role is important in an organisational setting. It impacts negatively and positively on the

research effort but produces strong and rigorous results. I would recommend that future researchers in organisational settings adopt a role that is clearly defined and if possible utilises the researcher's skills and contributes to the environment. This adds legitimacy to the research effort, situates the researcher in a position that can be clearly understood by the participants and ensures that over time one becomes an active member of the group thus removing the stigma attached to research and its associated behavioural changes.

### 9.7.4 An Ethnographical Approach

As a number of authors have noted (Cohen et al. 1996; Tsoukas and Chia 2002), the use of an ethnographical approach is the most appropriate way of viewing organisational settings from within. Observational approaches provide an ability to *see* what is occurring in the social setting, to match patterns of behaviour and to make explicit actions that occur in a way that may not be possible with other methods. Van Maanen notes that the use of ethnographic techniques in the study of organisations could be used for focusing on "organisational culture and sub-culture, power and authority, … change (and resistance to change) and so on" (2001, p 253), as I have shown to some extent. Such techniques also allow the use of a number of different methodologies for the purpose of triangulation. Yet despite the strengths of the method, curiously there are only 204 book length ethnographies of work organisations existing (Hodson 2004). There is scope for further ethnographies of work to contribute to this field.

The strength of this methodology presents opportunities for further research, particularly since organisational ethnographies are few in number, and since it is almost always possible to explore a 'new' field site. It is recommended that researchers

contemplating looking at organisations consider the benefits of observational strategies and try to incorporate these into their research designs as a means of gaining comprehensive and rigorous data and insights into the field site.

An ethnographic approach to the study of organisations enjoys a number of strengths, however there are implications in the choice of method. As noted, ethnographic approaches are costly in terms of time, resources and intensity. Such a method should therefore be employed only if that costliness can be accommodated. Should organisations be able to overcome the problems of costliness there are opportunities for future research to incorporate multiple ethnographers in one organisation / site at different levels and different areas so as to be able to gain a whole-of-organisation understanding.

## *9.8 Implications and Future Research – Chapters Five-Eight*

In addition to the implications stemming from the main findings in the thesis, there are a number of data chapter specific implications, as outlined below.

Few people have specifically looked at routines from an ethnographic perspective, as I have done (Chapter Five) viewing the routines from the perspective of being involved in the routines. This study has implications for future research as it shows that routines are not passive but active and that although they are pinned in a web of interlinked hierarchical routines, people can change some aspects of them. Given that my research has shown that routines are not self-actuating (as some of the recent literature has begun

to suggest[145]), and that they include problem-solving skills, there is both a need and an opportunity for further research to explore routines more from these perspectives. Additional research also needs to be undertaken from within the routines, particularly in empirical studies. The work could be expanded by further exploring complexity and discrepancy analyses possibly leading onto work measuring the relationship between written procedures and actual processes or possible sequential variety.[146] There is a commonly held belief that "informal work practices rarely conform to official guidelines" (Pentland 2003, p 538) but these analyses could be further expanded to provide explanations as to why these divergences occur. Pentland (2003) has done some preliminary work assessing the potential for task variation, however using the analytical frames presented in this thesis this could be built on to provide a more comprehensive assessment of the work processes in organisations such as ActewAGL. This could include expanding task complexity (as discussed above), Empirical work on routines would be particularly constructive in assisting with understanding and mapping organisational change processes (Becker 2004, p 649). This will allow researchers to discover further aspects that have not yet been addressed in the extensive but largely non-observational literature on routines.

This research was conducted in the Logistics section of ActewAGL where the findings suggest a generalisability across other similar functions and /or in similar organisations (see for example Van Vliet's (2003) work on utilities, Suchman's (1983) work in an accounts payables area and March and Simon's (1958) study of inventory management processes). It would be interesting to further this work by applying ethnographic

[145] For examples see Feldman (2000 ; 2003) and Pentland (1992), as discussed in Chapter Five.
[146] Perrow (1967 cited in Becker 2005bp, 824-33) conducted some work, which is now seen as an antecedent to the study of organisational routines, but which could be expanded in the study of routines through an ethnographic approach. This included task complexity and task interdependence (as discussed) but could be expanded to include his other elements including time pressures, uncertainty of the task and turnover of agents.

techniques to processes that were less procedurised or other more dynamic industries. This could particularly be explored from the perspective of the dichotomy that exists between routines as a launch place for entrepreneurship and them promoting stability.

The informal and formal organisation is vastly under-researched in the organisational literature, although it is widely referred to. More work could be done exploring exactly what is meant by informal and formal. There is little explicit discussion of where the two merge and the formal is enacted informally or the informal legitimised through the formal, yet this bridging is where a vast proportion of the unexplained aspects of organisations occur. Chapter Six presents a framework and an ethnographic exploration of the in/formal. This also has implications for future research as a foundation from which to further explore the relationship between the formal and the informal in organisations. If carried out comprehensively this could significantly advance the existing knowledge in this area.

Similarly, change has rarely been explicitly looked at from inside. As Chapter Seven shows, when change is addressed ethnographically new levels of complexity are identified. Ethnographically informed methods allow the whole social situation to be taken into account and to see change as a constant, actor-initiated and sometimes emergent phenomenon in organisations (Tsoukas and Chia 2002). Little research has been done into how change occurs endogenously and how factors such as power have an impact on change. These provide opportunities for future research.

Chapter Eight has implications for research into power through an ethnographic and taxonomic exploration of the use of power. All people at various levels have power, as

this study has shown. This means that the study of power must be multifaceted because a simplistic view of power misses its multifarious nature. Observational techniques allow the researcher to determine the uses of various types of power, to identify the ways in which different people and groups have and exercise power, and how in-action some groups can have little political clout but a great deal of power in making things happen (or not). There are opportunities for expanding the study of power using ethnographic explorations and also explaining the impacts of various types of power usage in organisations.

This research has practical implications in allowing us to gain an understanding of how things happen in organisations. It shows that things get done through routines that occur in between the formal and the informal organisation. Routines are structured through power-based truces, and in a framework of ongoing change and stability. Thus there is a need for managers to specifically be aware of and manage routines, the informal and formal concurrently and power relations, particularly knowledge-based power. The study has also shown that all work is knowledge-based[147] and that knowledge-bases are multiple, complex and with many direct and indirect feedback loops between them. This complexity makes managing such knowledge difficult. The implications for management and for future research is that in light of such complexity perhaps it is necessary not so much to explore the management of knowledge but the management of such concepts as routines, in/formal, power and change in order to provide an understanding of how these complex knowledge-bases are actually managed in organisations.

[147] At least knowledge is in the mix, along with tradition, blind prejudice, information, data, astrology, state of the liver etc as Dr David Stephens noted on reading a draft of this chapter.

There are other opportunities for future research stemming from this thesis addressing such issues as agency, expanding ethnographic studies of ActewAGL, work organisations, communities-of-practice or of organising within organisations. For instance, there is potential to build on Feldman's work (2000; 2003) which addresses the influence agency has on recurrent interaction patterns, such as those displayed in organisational routines (Becker 2004). The work presented in this thesis begins by acknowledging the effect of individual agency in organisational routines, change and power but does not explore this in any depth, something which could be expanded on in future research.

Other areas for possible future research include expanding the study of ActewAGL to include other areas or even a comparative study of other utility companies, or by applying an ethnographic perspective further on in/formal, change and power. Further opportunities to explore other organisations using ethnographic techniques exist, particularly the study of organising within organisations, the development of a post-bureaucratic view of work and the study of problem-solving in organisations (Barley and Kunda 2001). Barley and Kunda (2001, p 88) also note that research opportunities exist to explore further the use of communities-of-practices as the primary source of analysis, thus drawing more extensively on the informal aspects of organisational knowledge exchange. The use of observational techniques in organisations is a small but growing field, representing further opportunities for exploration. As discussed above, these opportunities are particularly realised in the study of specific areas that can best be explored through being inside situations.

## *9.9 Final Words*

By using the Ethnography of Knowledge to illuminate the field site through the ethnographic account I was able to gain a deeper understanding of ActewAGL, and of the theoretical constructs of routines, in/formal, change and power, albeit a variable understanding depending on the aspect of the research that I was looking at. It is almost impossible to study knowledge directly and in isolation however when viewed in conjunction with other ways of viewing organisations, knowledge is very useful as a lens in understanding the socially constructed work environment. The Ethnography of Knowledge provides a methodological means of doing this.

An ActewAGL colleague noted that, "frustration and patience might be a significant part of your thesis", but at the end of the day as van Maanen says, "we must be willing to listen to each other and listen with respect. The goal is not to control the field, increase our prestige, run a tight ship …[but] to learn from one another such that our ink-on-page theories and consequent understandings of organisations can be improved. Too often we forget" (van Maanen 1995, p 140).

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# Appendix 1 – ActewAGL Administrative History

1. NAME OF CREATOR
Department of Home Affairs, The Federal Capital Territory

2. DATE RANGE
1904-2000

3. PREVIOUS
N/A

4. SUBSEQUENT
ActewAGL 2000 – Current

5. ADMINISTRATIVE HISTORY[148]

| DATE | DESCRIPTION | SOURCE |
|---|---|---|
| 1904 | The selection of a site for the new national capital of Australia was dependent on a natural water supply and featured prominently in Robert Scrivener's deliberations. | Donovan 1999, p 5 |
| 1 Jan 1911 | The Federal Capital Territory was formally established (renamed the Australian Capital Territory in 1938). The Department of Home Affairs, Central Office was responsible for building the capital city. | Donovan 1999, p 3, 6, 296 |
| 23 May 1912 | Walter Burley Griffin won the competition to design the national capital. In 1913 he was appointed Federal Capital Director of Design and Construction to oversee the implementation of the design. | Donovan 1999, p 9 |
| 1912-1916 | In 1912 work began on constructing the Cotter Dam to provide Canberra's water supply (designed and supervised by Henry Gustav Connell, the Department of Home Affairs' supervising engineer).<br>The water was to be pumped using electricity generated at the power station in Canberra. | Donovan 1999, p 10 |
| 12 Mar 1913 | Lady Denman, wife of the Governor-General, named the city 'Canberra'. | Donovan 1999, p 10 |
| July 1915 | The Minister for Home Affairs, King O'Malley proposed that electricity be the chief energy source for the national capital so that the city remained smokeless.<br>The power station was commissioned as a three phase power generating system (as used in Sydney / became the national standard). This was the first permanent building in Canberra.<br>Personnel from the Department of Works and Railways ran the power station because the Department of Home Affairs did not have qualified people to manage it. | Donovan 1999, p 15, 18 |
| 1915 | A sewer was constructed at Weston Creek between 1915 and April 1917 when work was halted due to a Royal Commission called to examine Canberra's administration. | Donovan 1999, p 20 |

[148] The researcher gratefully acknowledges the assistance of Kaye Adams of Information Management Solutions in preparing this Administrative History.

| | | |
|---|---|---|
| 1 Jul 1921 | The Department of Works and Railways, Central Office assumed full control of the power station. | Donovan 1999, p 296 |
| 1 Jan 1925 | The government appointed an independent Federal Capital Commission to take responsibility for planning and developing Canberra and assuming responsibility for local government type functions.<br>An electrical engineer assumed responsibility for operating the electricity supply between 1925-27.<br>Matters relating to electricity supply were regulated by the Canberra and Jervis Bay Electricity Supply Regulations proclaimed in 1924.<br>The Commission replaced the Federal Capital Advisory Committee which existed between 22 Jan 1921 and 3 Dec 1924.<br>On 1 May 1930 the Federal Capital Commission was abolished by the Scullin Labor government. | Donovan 1999, p 295-6, 22, 31, 39 |
| 1927 | The Weston Creek sewerage treatment plant was completed to coincide with the opening of the provisional Parliament House. | Donovan 1999, p 30 |
| 1 May 1930 | The Scullin government divided its functions between departments. The Federal Capital Territory Branch of the Department of Home Affairs was responsible for electricity services and the Department of Works and Railways was responsible for water and sewerage services. (This arrangement remained virtually unchanged for 50 years).<br>The Works and Services Branch continued to be responsible for design, construction and maintenance of essential water services. | Donovan 1999, p 39, 295-6 |
| 12 Apr 1932 | The Department of the Interior was created from an amalgamation of the Department of Home Affairs, the Department of Transport and the Department of Works and Railways. The Department took over responsibility for electricity services.<br>From 1932-38 the Works and Services Branch, within the Department of Interior was responsible for water and sewerage services. | Donovan 1999, 295-6; National Archive of Australia Agency Note CA27 |
| 1938 | The Works and Services Branch, responsible for water and sewerage services, was transferred from the Department of Interior to the newly created Department of Works. (The Department of Works was abolished on 26 April 1939). | National Archive of Australia Agency Note CA27 |
| 26 Apr 1939 | The Department of the Interior was restructured to incorporate the functions of the abolished Department of Works.<br>Between 26 Apr 1939 and 1964, the branch providing electricity services within the Department of the Interior was known as the Canberra Electricity Supply.<br>Between 26 Apr 1939 and 1946 responsibility for water and sewerage services was located in the Works and Services Branch in the Department of the Interior. | National Archive of Australia Agency Note CA27; Donovan 1999, p 41, 31 |
| 1 Jan | From 1 Jan 1946 to 19 December 1972 the Works | National |

| | | |
|---|---|---|
| 1946 | Director, ACT agency within the Department of the Interior was responsible for water and sewerage services. On 19 Dec 1972 the Works Director, ACT agency moved to the newly created Department of the Capital Territory. | Archive of Australia Agency Note CA743 |
| 1945 | From 1945 to 1953 the Department of the Interior was responsible for the administration and billing for electricity services while the Department of Works was responsible for the engineering aspects of electricity services. | Donovan 1999, p 46-7 |
| 1 July 1963 | The *Australian Capital Territory Supply Act 1962* constituted the ACT Electricity Authority (ACTEA) as a corporate body, consisting of a chairman and two other members. The Department of the Interior retained responsibility for ACTEA, although it functioned as a separate entity.<br>ACTEA's functions were:<br>• To supply electricity<br>• To promote the use of electricity within the ACT and such functions in relation to matters affecting or connected with the supply or use of electricity in the ACT as were conferred upon the Authority by ACT law<br>This empowered ACTEA to:<br>• Generate electricity<br>• Purchase electricity from outside the ACT<br>• Transmit and reticulate electricity in the ACT<br>• Supply, maintain or repair electrical equipment required or used by the Commonwealth, or its authorities<br>• Determine charges for the supply of electricity, or connection to that supply<br>(ACTEA was superseded on 1 July 1988 by ACTEW) | Donovan 1999, p 79; National Archive of Australia Agency Note CA1774 |
| 19 Dec 1972 | The Prime Minister, Gough Whitlam established a new Department of the Capital Territory responsible for the administration of the Australian Capital Territory.<br>From 19 Dec 1972 until 11 March 1983 the ACT Electricity Authority (ACTEA) was located within the Central Office of this department.<br>From 19 Dec 1972 until 18 Jun 1974 the Works Director, ACT within the Department of the Capital Territory was responsible for water and sewerage services.<br>The Department of the Capital Territory was abolished on 11 March 1983. | Donovan 1999, p 116, 296; National Archive of Australia Agency Note CA1477 |
| 30 Nov 1973 | The name of the Department of Works was changed to the Department of Housing and Construction. Water and sewerage services were the responsibility of the Director-General of Works agency within the Department. | |
| 18 Jun 1974 | The Public Service Board redesignated all existing positions of Director of Works as Director of Housing and Construction. Water and sewerage services were the | Donovan 1999, p 295; National Archive of |

| | | |
|---|---|---|
| | responsibility of the Director of Housing and Construction within the Department of Housing and Construction until the department was abolished on the 22 Dec 1975. At the regional level, Director of Housing and Construction, ACT, was replaced by the Director of Construction, ACT. | Australia Agency Note CA1899 |
| 22 Dec 1975 | Department of Housing and Construction abolished resulting in the Commonwealth works functions becoming the responsibility of the Department of Construction with the head office being split between Melbourne and Canberra.<br>The ACT regional branch (formally the Director of Housing and Construction) became the Director of Construction, ACT from Dec 1975 until 5 Dec 1978. This branch was responsible for water and sewerage services in the ACT. | Donovan 1999, p 295; National Archive of Australia Agency Note CA2077 |
| 5 Dec 1978 | Works functions transferred from the for Department of Construction and the name of the ACT regional office was changed to the Director of Housing and Construction, ACT. The regional office was responsible for water and sewerage services until 7 May 1982 when they were transferred to the Department of Transport and Construction. | Donovan 1999, p 295; National Archive of Australia Agency Note CA2779 |
| 7 May 1982 | The Department of Transport and Construction was established, inheriting the construction activities (including water and sewerage services) from the abolished Department of Housing and Construction. | Donovan 1999, p 295 |
| 11 Mar 1983 | The Department of Territories and Local Government took over the functions of the Department of the Capital Territory. The Australian Capital Territory Electricity Authority (ACTEA) was located in the new department until 13 Dec 1984.<br>The Department of Housing and Construction was created by a meeting of the Federal Executive Council. The Department inherited construction functions, including water and Sewerage Services from the Department of Transport and Construction.<br>The Department of Transport and Construction was renamed the Department of Transport. | Donovan 1999, p 155, 295, 296; National Archive of Australia Agency Note CA1477 |
| 13 Dec 1984 | Responsibility for the Australian Capital Territory Electricity Authority (ACTEA) moved to the newly created Department of Territories, Central Office, from the Department of Territories and Local Government. | Donovan 1999, p 296; National Archive of Australia Agency Note CA4135 |
| 2 Dec 1985 | The Minister for Territories announced the Government's intention to combine most ACT administrative functions within a single portfolio. Responsibility for water and sewerage services transferred from the Department of Housing and | Donovan 1999, p 295; National Archive of Australia Agency Note |

| | | |
|---|---|---|
| | Construction to the new ACT council within the new Department of Territories. | CA4135 |
| 24 July 1987 | ACT Government services were brought together to form the new ACT Administration within the Department of the Arts, Sport, the Environment, Tourism and Territories, Central Office. Water and Sewerage Services and the Australian Capital Territory Electricity Authority (ACTEA) (transferred from the abolished Department of Territories) were administered by ACT Administration but ACTEA remained statutorily independent. | Donovan 1999, p 156, 295-6; National Archive of Australia Agency Note CA5984 |
| 1 July 1988 | The Australian Capital Territory Electricity and Water Authority (ACTEW) was established under the ACT Electricity and Water Ordinance 1988. The Authority combined the functions of the former ACT Electricity Authority (ACTEA) with the Water and Sewerage Branch of the ACT Administration.<br>The Authority's functions were;<br>• To supply electricity and water<br>• To promote and manage the use of electricity and water<br>• To collect and treat sewerage and otherwise to provide and manage sewerage services<br>• To produce sewerage treatment by-products, and<br>• To do such things in relation to electricity and water under the provision of sewerage services as are conferred on the Authority by or under the Ordinance or any other law of the Territory | National Archive of Australia Agency Note CA6872 |
| 11 May 1989 | After debates lasting over a decade, the Australian Capital Territory became self-governed, carrying State Government responsibilities rather than being governed by the Federal Government. | Donovan 1999, p 185 |
| 1 July 1995 | The Australian Capital Territory Electricity and Water (ACTEW) Corporation Limited was established as an ACT Government owned company with assets and investments in water, sewerage, electricity, gas and telecommunications.<br>The objects of the Company were;<br>• To supply energy, including electricity and water<br>• To promote and manage the use of energy and water<br>• To provide sewerage services<br>• The provision of communication services, and<br>• To undertake other related business or activities which may be taken by a natural person | ACTEW Corporation Annual Report 2003, p 2; Constitution of ACTEW Corporation Limited |
| 3 Oct 2000 | ACTEW Corporation Limited and the Australian Gas Light (AGL) company entered into a joint venture, to form ActewAGL, based in the Australian Capital Territory to provide utility services. ACTEW Corporation, a company wholly owned by the ACT Government, owns the water and sewerage assets in the ACT and 50% of the ActewAGL partnerships. | ACTEW Corporation Annual Report 2002; 2003, p 3; ACTEW Corporation website – |

| | | |
|---|---|---|
| | (AGL, Australia's largest energy provider, was established in 1837 and listed on the Sydney Stock Exchange when it opened in 1871. AGL has business interests in Australia and overseas and is the owner, operator or major investor in major gas pipelines, reticulation networks and electricity distribution. AGL owns 50% of the ActewAGL partnerships).<br><br>ActewAGL was organised as two partnerships, one distribution and one retail.<br><br>The ActewAGL Distribution partners are ACTEW Distribution Limited and AGL Gas Company (ACT) Pty Ltd. ActewAGL Distribution is responsible for the network side of the energy business. It also operates and maintains the water and sewerage networks under contract to ACTEW Corporation.<br><br>The ActewAGL Retail partners are ACTEW Retail Limited and AGL ACT Retail Investments Pty Ltd. ActewAGL Retail manages customer service, marketing and selling energy. | Corporate information |
| 31 May 2000 | TransACT Communications Pty Limited was officially launched. ACTEW Corporation owns 24.9% of TransACT. | ACTEW Corporation Annual Report 2003, p 3; TransACT Website |

# Appendix 2 – Complexity of Tasks in the Warehouse

This table shows a number of tasks in the warehouse, related tasks or actions and interconnections with other people.

| **Process** | **Number of Steps** | **Linked steps and processes** | **Links to other actors** | **Forms** | **Reference** | **Ethnographic Notes** See also Node 'Complicated' |
|---|---|---|---|---|---|---|
| Receipts | **22** | See also Log 7.5.P1[149] Control of Hazardous Materials, Log 8.6.P8 Receipt, Issue and Return of Transformers, Log 8.6.P10 Cable Movement, Returns to Suppliers, Inspection, Log 8.6.P1.W1 Receipt Discrepancies | - Customer Deliveries<br>- Suppliers / Customers<br>- Specifying Officers | | Log 8.6.P1 Receipts | 413:4[150] |
| Picking | 8 for picking +16Reqs + 8SIRs +7-8 for forecasted = **40** | See also Log 8.6.P10 Cable Movement, Log 8.6.P8 | - Field crews<br>- Energy Networks<br>- Shipper | Interim Pick slip, Requisitions | | 423:1, 434;6 |

[149] Codes such as Log 7.5P1 refer to the internal number given to procedures and work instructions in Logistics.
[150] Codes in the ethnographic notes column refer to the page and paragraph numbers of the author's ethnographic notes. Eg. 413:4 refers to page 413, paragraph 4.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Transformers, Enter Req, Over counter Req, Issues, | | | | |
| Ship Confirm | **9** (11 if shipping quantities) | Completion of all processes | - Store people<br>- Field crews<br>- Energy Netwks | Requisitions, Interim Pick slips, | Ship Confirming Document | 412:1, 419:4, 415:5 |
| Enter Requisition | **16** | Project Issue | Warehouse staff | Interim Pick slips, Store Issue Request, | Requisition Enter Doc, Log 8.6.P3 Issues, | Field notes Book 4 |
| Over Counter Requisition | SIRs 8 (field crews) + 7 (if forecasted), 8 (if not forecasted) + 16 (entering req) = **32** | Requisition Enter, | -Field crews<br>- Store people<br>- Forecasting Officer<br>-Technical Officers / Project Officers | Store Issue Request, Interim Pick slip, Requisition | Requisition Enter Doc, Log 8.6.P3 Issues, | Field notes Book 4, 434:5 |
| Issues (Project Issues) | **21** | Returns, Shipping, Log 8.6.P8 Receipt, Issue and Return of Transformers, Log 8.6.P10 Cable Movement, See also Board of Survey, Sale of inventory, Requisition Enter. | -Field crews<br>-Warehouse staff | | Log 8.6.P3 Issues, Project Issues Doc | 412:1, 415:5 |
| Returns – items to store | 19 + 25 (if returned to stock) | Log 8.6.P8 Receipt, Issue and | -Specifying Officers<br>- Inventory Control | MRV EW29 (Materials | Transactions Project Returns | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | = **44**<br>19 + 19 (if not returned to stock) = **38**<br>19 + 14 (if large items but haven't left store) = **33** | Return of Transformers, Log 8.6.P10 Cable Movement, Returns to Suppliers, Inspection, Log 8.6.P1.W1. See also Log8.6.P9 Return of Items to Supplier, Log 8.6.P2 Surplus Materials, | Officer<br>- Forecasting Officer | Return Voucher) | Doc, Log 8.6P11 Return of items to store | |
| Cable Movement | **37 (**NB This figure excludes the steps involved in CMRs which are also essential for a successful Cable movement) | CMRs, Transact Cable Movements, See also Log 8.6.P1 Receipts, Requisition Enter, Shipping, Project Issue, Project Returns | -Field crews<br>-Energy Networks<br>-Store people<br>-Shipper | Requisition, CMR | Log 8.6.P10 Cable Movement, Log 8.6.P10.W1 Cable Movement Flow chart | 430:3, Node - Cable[151] |
| CMR (Cable Movement Record) | **23 (**NB 23+37 for cable movement = **60)** | Cable Movement, Transact Cable Movements. See also Log 8.6.P1 Receipts, Requisition Enter, | -Field crews<br>-Energy Networks<br>-Store people<br>-Shipper | Requisition | Log 8.6.P10 Cable Movement, Log 8.6.P10.W1 Cable Movement Flow chart | 430:3, Node - Cable |

[151] Nodes refer to the NVivo nodes / codes

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Shipping, Project Issue, Project Returns | | | | |
| Transact Cable Movements | 60 (steps for cable movt) + 10 = **70** | CMR (23 steps), Cable movement (37 steps), | -Transact<br>-Transact contractors | Transact Cable Movement Spreadsheet, CMR,<br>Pick slip | Transact Cable Movement Procedure | 430:3, Nodes – Cable, Transact |
| Transformer Movement | Receipt of Transformer → 22 (receipts) +15 (if accepted, 10 if rejected) = **37**<br>Returns of Transformer→ 4 (Returns) + 11 = **15**<br>Issues = **48**<br>Therefore 22+48 = **60** | Receipts, Shipping, Returns | -Purchasing Staff<br>-Works Co-ordinator Energy Networks<br>-Specifying Officers | Transformer & Padmount Spreadsheet, Transformer Movement Voucher (TMV) EW 330 | Log 8.6.P8 Receipt, Issue and Return of Transformers, | |
| Discrepancy | 10+ | Cycle Counts, See also Log 8.6.P1 Receipt Discrepancy, Log 8.6.P1.W1 | - Team Leader Inventory & warehousing to approve | - Discrepancy investigation report | Log 8.6.P5.W1 Discrepancy Identification | Node – Discrepancies 362:4 |
| Receipt Discrepancy | 8 categories of error = average of **14.25** steps per process | Receipts, Returns to suppliers, | -Suppliers<br>- Inventory Control Officer<br>-Procurement Staff | - Discrepancy Advice EW 278 (DA) | Log 8.6.P5.W1 Discrepancy Identification, | Node – Discrepancies |

| | | | | | | |
|---|---|---|---|---|---|---|
| Cancel item on requisition | 3 main steps<br>Ship = 6<br>Cancel = 11<br>Cancel Req=10 = **27** | Requisition Summary, | | | Field notes | 411:1,2, 411:5, 410:10, 416:5 |
| Change of bin location | **14** | Discrepancies, | -Project Officers – can't change location if forecasted | Change of location form | Change of location form | 410:10 |
| Sale of inventory item | 4 (enter req) + 3 (copies) + 1 (consult) + 2 (change to sale of inventory) = **10** | Requisition Enter, | -Inventory Control Officer<br>-Admin Officers<br>-External Customer<br>-Store people | | Log 8.6.P3 Issues | 434:7 |
| Forecasting – Review and closure | 19 + 19 (returns) + 6 (open batch) = **34** | Returns, Open batch, | -Team Leader Inventory & Warehousing<br>-Forecasting Officer<br>-Project Officers<br>-Shipper | Closed Project report, | Forecasting field notes – 21/1/04 | |
| Open Batch | **6** | Forecasting, Shipping | | Open Batch Report, | Field notes | 428:3 |
| Cycle Count | 3 main processes = 27 (on system) + 2 (physical count = **29** | Discrepancies, | -Warehouse staff<br>-Team Leader Inventory & Warehousing<br>- Standards & Disposals Officer | Discrepancy investigation report, | Log 8.6.P5.W2 Cycle count investigation, Log 8.6.P5 Cycle count procedure, Cycle count set item to recount doc, Cycle Counts Approving Counts doc, Cycle counts | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | enter counts doc, Entering Unscheduled Counts doc. | |

# Appendix 3 – Discrepancy Analysis Aggregate Totals ActewAGL Warehouse

| | A | B | C | D | E | F | G | H | K | L | **TOTAL** | % Mistake of Total Mistakes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No signature** | 0 | 0 | 0 | 3 | 0 | 4 | 1 | 0 | 1 | 1 | **10** | **7.3%** |
| **No reasons** | 0 | 0 | 2 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | **8** | **5.8%** |
| **Quantities** | 0 | 2 | 3 | 3 | 1 | 2 | 8 | 1 | 1 | 1 | **22** | **16.1%** |
| **CMRs** | 2 | 2 | 17 | 1 | 2 | 6 | 2 | 1 | 0 | 1 | **34** | **24.8%** |
| **Cancelled items** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **0.7%** |
| **Cross referencing** | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | **3** | **2.2%** |
| **Dates** | 0 | 1 | 35 | 3 | 0 | 7 | 0 | 0 | 0 | 2 | **48** | **35.0%** |
| **Shipping Requisitions** | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | **5** | **3.6%** |
| **Interim and Pickslip supplied** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **1** | **0.7%** |
| **Stock count initiated** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | **1** | **0.7%** |
| **Misfiled** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | **2** | **1.5%** |
| **No location for forecast** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | **2** | **1.5%** |
| | | | | | | | | | | | | |
| **No mistakes** | 2 | 6 | 58 | 11 | 9 | 25 | 12 | 5 | 2 | 7 | **137** | |
| **Total # of Ship reports** | 12 | 134 | 90 | 22 | 43 | 49 | 42 | 9 | 14 | 71 | **486** | |
| **% Mistakes per person** | **16.7%** | **4.5%** | **64.4%** | **50.0%** | **20.9%** | **51.0%** | **28.6%** | **55.6%** | **14.3%** | **9.9%** | **28.2%** | |
| | | | | | | | | | | | | |
| **% of Shipments** | **2.5%** | **27.6%** | **18.5%** | **4.5%** | **8.8%** | **10.1%** | **8.6%** | **1.9%** | **2.9%** | **14.6%** | | |

Types of mistakes are listed vertically. Mistake types with no mistakes over data collection period have been removed.
Storepeople (including the researcher but excluding two storepeople who were located offsite) are listed horizontally.

# Appendix 4 – Social Network Analysis: Information Map and Social Map of ActewAGL Procurement Section

The following maps represent observations of interactions made over a period of approximately 50 days in the Procurement Section of ActewAGL.

Names have been retained with permission from informants.

## *Considerations*

A researcher bias can be noted in the first map, partly due to the fact that the researcher is able to observe all of her interactions but not all of the interactions of other players, and partly because of the physical position the researcher is located on the map. Further the researcher was learning the processes at the time of observation and thus was possibly more likely to have more intense interactions with various actors than if she had understood the processes. In the second map, an attempt has been made to eliminate this bias by deliberately not mapping the interactions with the researcher, although this data is available.

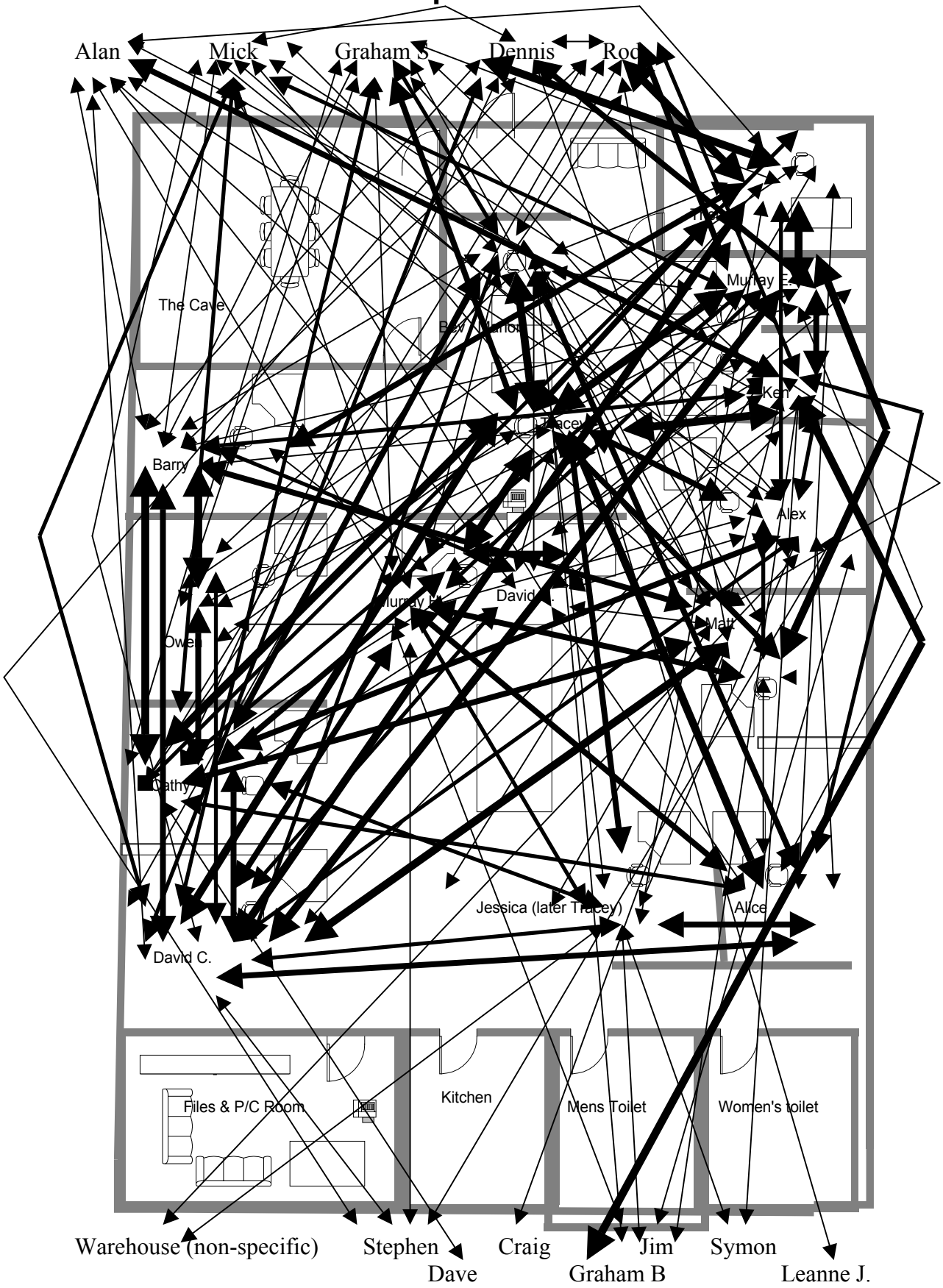
No doubt due to the small number of people in the logistics branch, the social interactions are quite strong. A small number of actors means that there is more chance that informal interactions will occur between most parties relatively frequently.

The knowledge is fairly evenly held across the logistics branch. The maps do indicate that some people are more widely sought for information than others but this is balanced by criss-crossing links to most people in the organisation indicating that on different topics the knowledge of different people is sought.

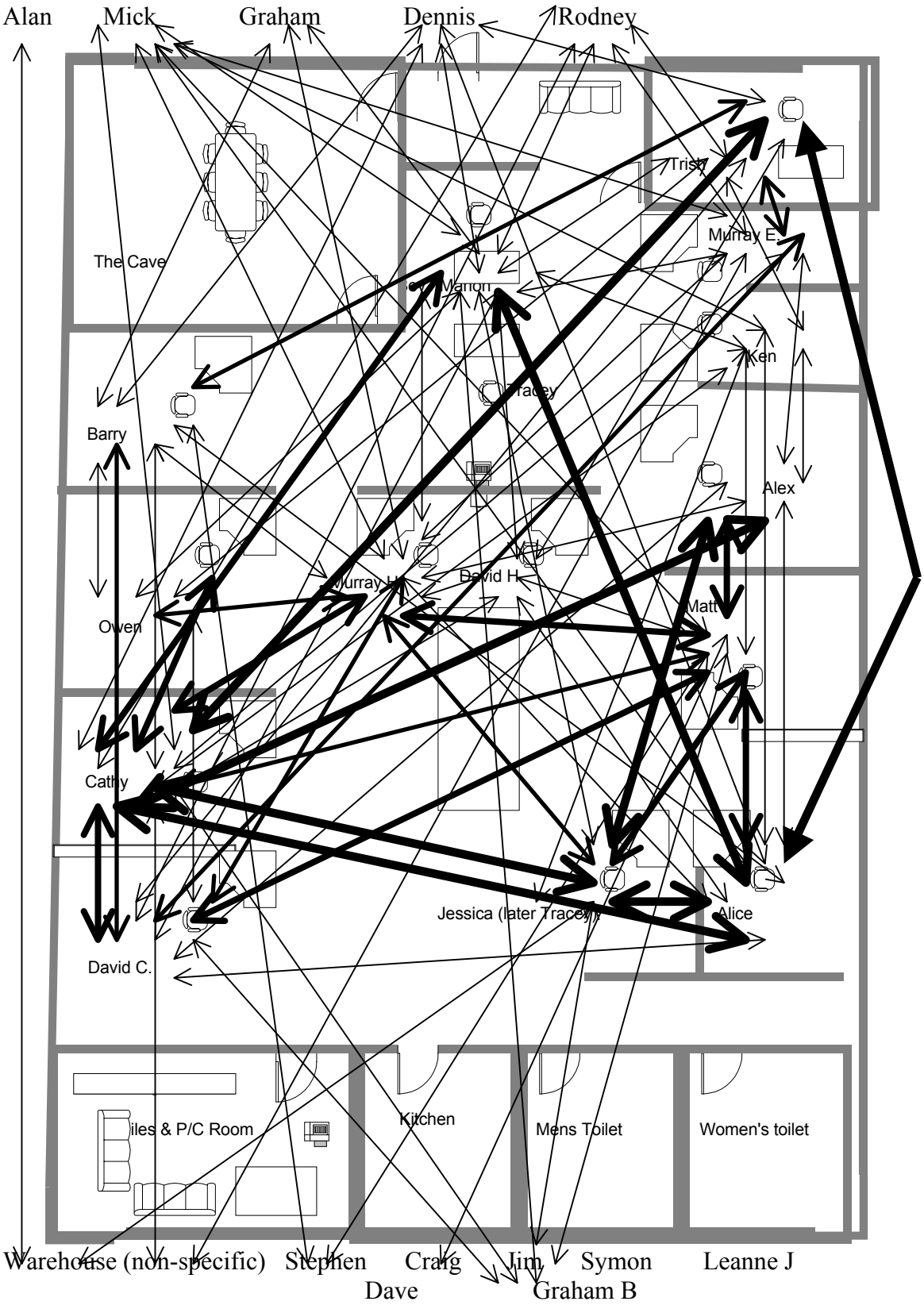
The maps indicate a variety of strong and weaker ties, as indicated by the frequency of interactions observed. This is particularly useful for knowledge exchange in the branch. Studies have shown that having weak ties speeds up the knowledge transfer when the knowledge being transferred is not complex, whilst having strong ties aids knowledge transfer when the complexity is increased (Hansen 1999). Given this, it is likely that combinations of strong and weak ties increase the diversity of knowledge transfer in environments such as logistics where neither strong nor weak ties predominate.

The lines in a social network map indicate connections between two people in the social grouping and the arrows represent the direction of the knowledge exchange in that they indicate who is being sought for information (Cross and Prusak 2002). In the case of the social network maps for the logistics branch of ActewAGL, the arrows represent mutual exchange of knowledge. I have chosen to represent the interactions in this way as both people generally seemed to benefit from the knowledge exchanges. Further over time, connections represented by repeated interactions often reflected information seeking from both parties, rarely was this a one way street.

## Informal Information Map



# Social Mapping



## *Conclusions*

ActewAGL Logistics branch operates on a series of informal interactions and subsequent informal knowledge exchanges.

The social interactions contribute to this exchange of knowledge through the formation of trust relationships.

There is a fairly even balance of social and work related exchanges and both compliment the other.

The knowledge within ActewAGL logistics branch is spread throughout the branch with different people having knowledge of different aspects, although there are some people that are consulted more widely because of the knowledge that they hold.

This informal knowledge exchange is a hallmark of the operation of the branch and as such is much more heavily relied upon than formal procedures and processes.

# Appendix 5 – Interview Information / Consent Forms

## *Interview Information Form*

The details below are for the information of participants in the research outlined below.

Researcher: Tracey Dalitz

Research to be conducted for: the degree of PhD at the Australian National University.

Researcher's Contact Details : Tracey Dalitz
School of Archaeology and Anthropology
A.D. Hope Bldg (Building # 14)
Australian National University
ACT 0200

Researcher's Phone Number: __6295 4258 (ActewAGL) 6125 3365 (ANU)

Date of interview: _____

Thank you for agreeing to participate in this study which will take place from July 2003 – March 2004.
This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this project are:

1) to gain an understanding about how organisations create, capture, share and utilize their knowledge.[152] The information gained will form part of the researcher's PhD thesis

The methods to be used to collect information for this study are explained below. From this information, I will write a report for the organisation and prepare social network maps to assist with checking my understanding of the knowledge exchange processes within the organisation. I will also write a thesis for the University.

[152] This was the original purpose of the project, prior to entering the field when the consent form was devised for the ANU ethics process, it should not be read as the dissertation's research purpose – this is clearly outlined in sections 1.4.1 and 9.2 of the thesis. Once I entered the field it quickly became apparent that organisational knowledge was everywhere and studying and studying knowledge in the broad was too large and thus I changed my focus to be more methodological, focusing on understanding how knowledge can be used as a tool in aiding ethnography. I did not change the consent form as I was already in the field when the current research focus of the thesis emerged and the stated purpose made sense to my informants. Whereas the purpose of investigating whether and how "the lens of knowledge on an ethnography helps to deepen the understanding of a social setting" would have made no sense to my informants. Further the questions I was asking were not affected by changing the purpose of the research and thus I felt it would have confused the informants to have done so.

## Methodology

- Interview a number of staff at various levels;
- Collect information about who they communicate with, where they get their information from, by whom they are influenced and what their social networks are within the workplace;
- Map this information to produce a social network map, an influence and information map of the workplace;
- Confirm with participants the results of the process and allow them an opportunity to comment on the report prior to the completion of the final version.

## Participant Rights

You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the address/phone number listed above.

I will use the information from this study to contribute to the report I will give the organisation and to contribute to the social network map/s of the organisation. You will be allowed to read this report and comment prior to the final version in order to check the accuracy of the report and the social maps.

I guarantee that the following conditions will be met:

1) Your real name will not be used in the written report.

2) If you grant permission for audio taping, no audio tapes will be used for any purpose other than to do this study, and will not be played for any reason other than to undertake this study.

3) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected and records and reports written will be turned over to you.

4) You will receive a copy of the final report before it is handed in, so that you have the opportunity to suggest changes to the researcher, if necessary.

Should you have any further questions please do not hesitate to contact me (contact details above), or in the case of ethical concerns you may contact the Human Research Ethics Committee at the ANU, c/- Sylvia Deutsch
Human Ethics Officer
Research Services Office
The Australian National University
ACT 0200
Tel.: 02-6125-2900
Fax: 02-6125-4807
Email: Human.Ethics.Officer@anu.edu.au

## *Interview Consent Form*

Researcher _____

Research to be conducted for: _____

Researcher's Phone Number: _____

Date: _____

Name of participant: _____

Work Unit:_____

Thank you for agreeing to participate in this study which will take place from (date) to (date).
This form outlines the purposes of the study and provides a description of your involvement and rights as a participant.

The purposes of this project are:

1) to gain an understanding about how organisations create, capture, share and utilize their knowledge. The information gained will form part of the researcher's PhD thesis

The methods to be used to collect information for this study are explained below. From this information, I will write a report for the organisation and prepare social network maps to assist with checking my understanding of the knowledge exchange processes within the organisation.

### Methodology

1) Interview a number of staff at various levels;
2) Collect information about who they communicate with, where they get their information from, by whom they are influenced and what their social networks are within the workplace;
3) Map this information to produce a social network map, an influence and information map of the workplace;
4) Confirm with participants the results of the process and allow them an opportunity to comment on the report prior to the completion of the final version.

### Participant Rights

You are encouraged to ask any questions at any time about the nature of the study and the methods that I am using. Your suggestions and concerns are important to me; please contact me at any time at the address/phone number listed above.

I will use the information from this study to contribute to the report I will give the organisation and to contribute to the social network map/s of the organisation. You will

be allowed to read this report and comment prior to the final version in order to check the accuracy of the report and the social maps.

I guarantee that the following conditions will be met:

1) Your real name will not be used in the written report.

2) If you grant permission for audio taping, no audio tapes will be used for any purpose other than to do this study, and will not be played for any reason other than to undertake this study.

3) Your participation in this research is voluntary; you have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information collected and records and reports written will be turned over to you.

4) You will receive a copy of the final report before it is handed in, so that you have the opportunity to suggest changes to the researcher, if necessary.

Do you grant permission to be quoted directly?

Yes _____ No _____

Do you grant permission to be audio-taped?

Yes _____ No _____

I agree to the terms

Respondent _____ Date _____

I agree to the terms:

Researcher _____ Date _____

# Appendix 6 – Interview Guide

In the course of the interviews I used the interview guide as simply that, to guide the questions I asked and to ensure that I covered roughly similar ground with all interviewees. I probed from their answers and for some participants asked targeted questions about something they knew about.

## *ActewAGL Staff Interview Questions*

### *Name of Interviewee :*

### *Division :*

### *Name of Interviewer:*

### *Date of Interview:*

### *Place of Interview:*

| | | |
|---|---|---|
| Consent form signed | Yes | No |
| Permission to tape | Yes | No |

- How long have you been at ActewAGL? How long have you been doing the job that you do now?
- What job do you do at ActewAGL?
- Could you please describe in detail what your job entails?
- How did you learn your job? (Was this through a formalised training program, on the job training, through the application of a manual or via word of mouth…? (Are you still learning about your job? How?)
- Approximately how long did it take for you to feel comfortable doing the job you do?
- Have you recently undertaken any professional development? What was this in? Did this assist with the way you work?
- In terms of similar knowledge of key issues you are dealing with, who could take over your job or who does the job fall to when you are absent?
- What sort of skills might that person require?
- From where do you get most of the information you need to do your job? (Includes people, literature, www sites, locations etc)
- From whom do you seek information at least once a week on work related matters?

- From whom do you seek information at least once a week on non-work related matters?

- To whom do you give information at least once a week? (Work related and non-work related matters)

- On which topics do people seek your advice?

- How do you receive information? (Electronically, over the phone, in person**)**

- With whom do you socialize at work? (Clarification needed on this to make this an OK thing to do)

- How does the system (Oracle, WASP, MinMax etc) support you in undertaking your job? What do you think about the system? (Expand)

- How has the system (Oracle etc) developed to meet the organisational needs? (How do you feel about your interaction with the system? Eg changes to the system to facilitate improvement brought out through suggestions etc) (How does the system get changed?)

- Do the formal procedures and processes in the organisation reflect what you do? How? (How are these different to what you actually do?)

- In your work how do you get support for decision making and advice when you are unsure? (How do you use the hierarchy / power relations.)

- How does the organisational hierarchy affect your job? Who do you think is the most powerful person in the organisation (both organisation and log)?

- Why do you think people stay at ActewAGL for such a long time?

- What do you think about 'Connected' (Staff newsletter) ? How would you prefer to have it received? (Probing here for communication issues)

- Can you think of any ways that Communication could be improved in ActewAGL? Does it need to be improved?

- Show informants Communication / Feedback model – elicit responses

- Do you think the fires changed the way ActewAGL views itself, in particular in relation to communication and knowledge exchange?

- Teamwork - Within Logistics do the teams work well?

- What do you like / dislike most about working for ActewAGL?

- You have eluded to there being some problems with the implementation of the self-directed work teams, what do you think those problems are?

- Reason behind self directed work teams?

# Appendix 7 – List of Codes assigned to the Ethnographic Data

In the course of analysis of the data, using a grounded theory approach, I assigned codes to the data based on the recurrence of such themes. These codes emerged as the data collection developed and were at no stage assigned from the literature.

Below is a list of the codes I assigned to the data as themes emerged. These show a number of local issues of importance to the people in the Logistics Branch of ActewAGL.

The codes I chose to explore in the body of the thesis were chosen because of their frequency of recurrence, because together they provide an overall picture of ActewAGL and show how work gets done. The codes chosen also link to and, in part, complement the other local themes.

| Codes | Total number of passages coded |
|---|---|
| [adapting routines] ~internal~ | 18 |
| Accreditation | 19 |
| Acknowledgement | 26 |
| Adapting Routines | 124 |
| adapting routines to suit other orga | 32 |
| Adapting Technololgy | 52 |
| Arrival | 38 |
| Artefacts | 19 |
| Attention to detail | 26 |
| Attitudes | 122 |
| Attitudes to management | 33 |
| Audits | 40 |
| Authority | 28 |
| Autofax | 13 |
| autopurchasing | 8 |
| barcoding | 4 |
| Behaviour | 38 |
| Blame | 26 |
| Boss's secretary | 8 |
| cable | 35 |
| Call Centre | 27 |
| call outs | 18 |
| Canberra Unique | 9 |
| Caring | 41 |
| CEO influenced | 22 |
| change | 265 |
| Change Management | 3 |
| Changes to Oracle | 37 |
| children | 26 |
| Clothing | 33 |
| Codified knowledge | 12 |
| Communication | 178 |
| Community | 52 |
| competencies | 19 |
| complaining | 62 |
| Compliance | 31 |

| | |
|---|---|
| complicated | 56 |
| Contestability | 30 |
| Contracts | 88 |
| Cover your arse | 16 |
| creation & disbandenment of positions | 14 |
| crisis | 33 |
| culture | 25 |
| customer not penalised | 8 |
| Customer Service | 179 |
| Dana | 15 |
| Data Entry | 10 |
| Data Loader | 27 |
| David Knows | 19 |
| Decentralisation | 15 |
| Decision making | 42 |
| declarative knowledge | 1 |
| defence | 14 |
| Delegations | 29 |
| Desk Officer | 2 |
| Discoverer | 5 |
| discrepancies | 95 |
| diversification | 13 |
| Don't care | 13 |
| downsizing | 36 |
| Duplicates | 22 |
| empowerment | 3 |
| engineers | 21 |
| enthusiasm | 7 |
| Environment | 49 |
| expansion | 14 |
| expert knowledge | 27 |
| f-2-F | 14 |
| Family | 16 |
| Feedback loops | 56 |
| feedback loops  warehouse | 11 |
| field crews | 42 |
| field guys in warehouse | 25 |
| Fires | 63 |
| Flexibility | 34 |
| Food | 31 |
| Forecasting | 27 |
| Formal | 286 |
| Fragmentary initiatives | 49 |
| Freedom | 13 |
| Fun | 12 |
| Gifts | 6 |
| good corporate citizen | 54 |
| handover | 8 |
| hide things | 2 |
| hierarchy | 35 |
| historical | 42 |
| home use | 4 |
| I just do my job | 72 |
| identity | 2 |
| improvement | 84 |
| Inaction | 14 |

| | |
|---|---|
| incentives | 114 |
| Inconsistencies | 79 |
| individual | 54 |
| Informal | 300 |
| information | 142 |
| infrastructure | 25 |
| Innovation | 26 |
| internal [customer service] | 27 |
| intranet & Internet | 53 |
| Introductions | 11 |
| Inventory | 46 |
| job evaluation | 10 |
| joking | 85 |
| keep control | 49 |
| know how | 27 |
| know what | 123 |
| know who | 38 |
| know why | 4 |
| Knowledge | 251 |
| knowledge exchange | 173 |
| KPIs | 33 |
| Leadership | 40 |
| learning | 67 |
| Learning the system | 83 |
| legislation | 16 |
| Little work to do | 32 |
| Logistics - from outside | 2 |
| Look busy | 12 |
| management | 223 |
| management bonuses | 3 |
| Manipulating the system | 72 |
| Marketing | 49 |
| meetings | 71 |
| mistakes | 140 |
| money | 127 |
| monitoring | 162 |
| moving | 63 |
| Moving - Internally | 22 |
| Moving - Logistics | 19 |
| moving payables from finance | 12 |
| multiskilling | 5 |
| Multi-utility | 5 |
| munchkin | 40 |
| Mutual Help | 158 |
| networks | 49 |
| not listened to | 14 |
| Opaqueness of the organisation | 2 |
| Optimiser | 16 |
| organisational structure | 28 |
| outside organisation | 24 |
| Outsourcing | 5 |
| Ownership | 28 |
| Passivity | 40 |
| Performance Management | 59 |
| personal traits | 34 |
| Physical Space Design | 32 |

| | |
|---|---|
| Play | 34 |
| power | 138 |
| Pride | 12 |
| Proactive | 14 |
| problem solving | 76 |
| Procedural knowledge | 23 |
| Procedures | 164 |
| product knowledge | 37 |
| productivity | 27 |
| Professionalism | 11 |
| project management | 7 |
| Project Officers | 8 |
| public service | 45 |
| Puzzles | 2 |
| Reciprocity | 9 |
| Record Keeping | 74 |
| Relationships | 20 |
| REMAP | 29 |
| reporting | 39 |
| Reproach | 54 |
| Research | 39 |
| researcher status | 60 |
| responsibilities | 153 |
| returns | 2 |
| rework | 23 |
| Ringfencing | 16 |
| RMAA | 5 |
| RB | 20 |
| roles | 69 |
| Rotations | 34 |
| Routines | 349 |
| Rules | 4 |
| Safety | 117 |
| Secrets | 13 |
| Security | 8 |
| Selection of people | 37 |
| Self-Directed work teams | 68 |
| SH | 15 |
| Silos | 7 |
| slow response | 12 |
| Social | 150 |
| Social Encouragement | 5 |
| social mapping | 36 |
| Specifying Officers | 19 |
| Stability | 14 |
| Staff | 138 |
| staff absences | 61 |
| Staffing | 23 |
| standardisation | 14 |
| Statements | 22 |
| statistics | 22 |
| Strategic Management | 28 |
| Strategizer | 23 |
| Street lighting | 9 |
| supplier management | 35 |
| Suppliers | 10 |

| | |
|---|---|
| supply chain management | 9 |
| surveys | 23 |
| Tasks | 194 |
| Teaching them the system | 18 |
| teamwork | 96 |
| technology | 295 |
| Telling people what to do | 15 |
| theft | 2 |
| them and us | 16 |
| thrown into jobs | 22 |
| Time | 62 |
| Training | 135 |
| Transact | 66 |
| Trucks | 25 |
| trust | 6 |
| turnover | 60 |
| Unions | 4 |
| Upgrades | 21 |
| Visits & Visitors | 27 |
| warehouse | 106 |
| WASP | 26 |
| Water vs Electricity | 24 |
| workarounds | 43 |
| workload | 51 |
| TREE NODES | |
| (1) /Adapting Routines | 98 |
| (1 1) /Adapting Routines/adapting routines to suit other orga | 22 |
| (1 2) /Adapting Routines/Adapting Technology | 45 |
| (1 2 1) /Adapting Routines/Adapting Technology/Changes to Oracle | 10 |
| (1 2 2) /Adapting Routines/Adapting Technology/Autofax | 13 |
| (1 2 3) /Adapting Routines/Adapting Technology/autopurchasing | 8 |
| (1 3) /Adapting Routines/[adapting routines] ~internal~ | 18 |
| (1 4) /Adapting Routines/adapting routines to suit other or 2 | 32 |
| (2) /Attitudes | 65 |
| (2 1) /Attitudes/Attitudes to management | 12 |
| (3) /change | 263 |
| (3 1) /change/Change Management | 3 |
| (3 2) /change/Changes to Oracle | 10 |
| (4) /Customer Service | 117 |
| (4 1) /Customer Service/customer not penalised | 5 |
| (4 2) /Customer Service/internal [Customer Service] | 21 |
| (5) /Communication | 100 |
| (5 1) /Communication/Feedback loops | 24 |
| (6) /Knowledge | 219 |
| (6 1) /Knowledge/Codified knowledge | 11 |
| (6 2) /Knowledge/expert knowledge | 17 |
| (6 3) /Knowledge/know how | 9 |
| (6 4) /Knowledge/know what | 53 |
| (6 5) /Knowledge/know who | 22 |
| (6 6) /Knowledge/know why | 3 |
| (6 7) /Knowledge/knowledge exchange | 119 |
| (6 8) /Knowledge/product knowledge | 10 |
| (6 9) /Knowledge/Procedural knowledge | 4 |