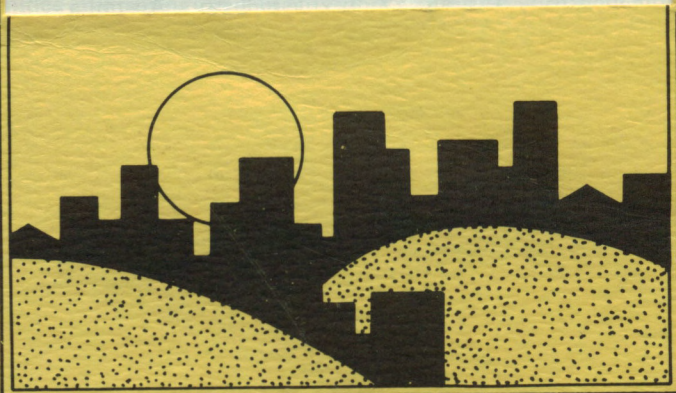


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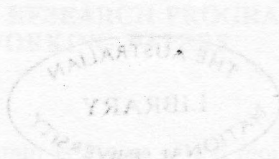
Alastair Whyte Greig

Urban Research Program
Working Paper No. 23
August 1990



URBAN RESEARCH PROGRAM
RESEARCH SCHOOL OF SOCIAL SCIENCES
AUSTRALIAN NATIONAL UNIVERSITY

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GPO Box 4
Canberra, ACT, Australia 2601

ISBN 0 7315 1016 X
ISSN 1035-3828

S/A
AG
64T101
-487
S918182



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Australian National University 1990*

National Library of Australia
Cataloguing-in-Publication data:

Greig, Alastair Whyte, 1960- .

Retailing is more than shopkeeping : manufacturing interlinkages and technological change in the Australian clothing industry.

Bibliography

ISBN 0 7315 1016 X.

1. Textile industry – Australia. 2. Textile industry – Australia – Technological innovations. 3. Clothing trade – Australia. I. Australian National University. Urban Research Program. II. Title. (Series : Urban Research Program working paper; no. 23).

338.476770994

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ABSTRACT

This paper is one of a series on the Australian clothing industry, forming part of the research project "A Local Division of Production: Technological Change and Productive Interlinkages in Australian Manufacturing". The project examines the effect of technological change and modern production philosophies upon the relationship between clients and suppliers within industry sectors. As the emphasis on quality becomes a cornerstone of entrepreneurial survival and success both process and product innovation take on an increasing significance. The project hypothesizes that these changes will have far-reaching consequences upon the interaction between leading, or 'core', firms and their manufacturing suppliers.

Within the overall context of the project, the purpose of this paper is definitional. It is argued that within the clothing industry chain (or filiere) large retail chains are 'core' firms promoting technological and managerial change among manufacturing suppliers and their suppliers. It is further argued that the responses to change from manufacturers take on diverse forms according to size and market position. While manufacturers have responded 'flexibly' to changing conditions, the diverse forms of flexibility introduced by different sectors of the market are more characteristic of 'neo-Fordism', and evidence of an emerging 'post-Fordist' consciousness among management remains limited.

The paper begins with a brief history of the Australian clothing industry over the past two decades, focusing upon the changing policy environment. This leads to a description of the Federal Government's Textile, Clothing and Footwear Plan, and an assessment of the problems manufacturers face in adjusting to the new conditions. It is then argued that an analysis of the 'industry chain' must take into account the role performed by core retailers in altering manufacturing practices. Two areas in particular are examined; the growing awareness of quality control, and the introduction of Quick Response strategies. The conclusion reached is that the core retail sector has performed, and will continue to perform, a catalytic role within the Australian clothing manufacturing sector, and that commentators and industry analysts must broaden their conceptions of industry chains in order to take account of this factor.

RETAILING IS MORE THAN SHOPKEEPING: Manufacturing Interlinkages and Technological Change in the Australian Clothing Industry¹

Alastair Whyte Greig
Urban Research Program

INTRODUCTION²

This paper is one of a series on the Australian clothing industry, forming part of the research project "A Local Division of Production: Technological Change and Productive Interlinkages in Australian Manufacturing". The project examines the effect of technological change and modern production philosophies upon the relationship between clients and suppliers within industry sectors. As the emphasis on quality becomes a cornerstone of entrepreneurial survival and success, both process and product innovation take on an increasing significance. The project hypothesizes that these changes will have far-reaching consequences upon the interaction between leading, or 'core', firms and their manufacturing suppliers.

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¹ Paper presented to the Urban Research Unit Seminar Series, R.S.S.S., A.N.U., 28th May, 1990.

² I would like to express my gratitude to the numerous individuals employed by the firms and organisations interviewed in this study. Without their assistance and information this paper could not have been written. Through previous agreement the individuals and firms remain anonymous. All unacknowledged references and quotations reflect the commercial-in-confidence nature of the information supplied.

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CHANGING POLICY ENVIRONMENT

Australian clothing manufacturing is currently undergoing a process of restructuring which will radically alter the face of the industry by the turn of the century. The responses which are being demanded of clothing manufacturers contrast starkly with the industry's performance during the post-war period, which was characterised by stable, long production runs, technological stagnation, low capital requirements and an unskilled labour force. The social and technological forces at the forefront of the current changes are microelectronic-related advances in production techniques, trade liberalisation, and work reorganisation and award restructuring. This environment did not envelope the industry overnight. It has evolved over a period of twenty years, fostered by changing market and technological forces, and policy decision-making.

As the low-wage, newly-industrialising countries of East Asia expanded their apparel manufacturing base and targetted the developed nations' markets during the late-1960's and early-1970's Australian manufacturers were forced to rely upon the traditionally high tariff barriers for protection. However, in July 1973 this rug was swept from underneath the local producers' feet when the Whitlam Government abruptly reduced tariff barriers across the board by 25%. The fragility of the industry was indicated by the outcome; between 1973 and 1975 the share of imports in

the local market jumped from 12% to 20% and the industry shed one-third of its workforce (Ellam, 1989).

The government relented somewhat eighteen months later by controlling the volume of clothing imports through introducing quota measures (see Warhurst, 1982). The decision was justified as a 'temporary' measure, giving the industry time and space to adjust to the changing conditions and reorganise itself to compete more effectively against imports (Gregory, 1985). The period between 1973 and 1977 can be labelled one of 'managed chaos' as retailers and manufacturers attempted to revise their corporate strategies to cope with the influx of imports. In this revision the conflicting interests of the two sectors of the industry manifested themselves. It was the manufacturers who lost out most by the move and many still remain bitter when recalling the extortionate margins some retailers earned through their 'bring it in and we'll sell it' policy. During this period Australian manufacturers also began experimenting with off-shore production, with companies such as Amco moving facilities to the Philippines and Midford to Malaysia, in an attempt to compete more effectively with imports through lowering their labour costs.

Between 1977 and 1981 the 'free trade versus protection' positions hardened and clarified. The Industries Assistance Commission (IAC) highlighted the costs borne by the community through protectionist measures in two major reports released in 1977 and 1980 (Aust. IAC, 1977, 1980). In response, an 'unholy alliance' between TCF employers' associations and unions pointed to the spectre of unemployment which would stalk Australia in the event of the implementation of the IAC's deregulationist recommendations. The Textile, Clothing and Footwear Industries' 1980 booklet, entitled *120,000 Jobs on the Line: Why Australia must retain its textile, clothing and footwear industries*, is characteristic of their protectionist approach at the time (TCF Industries, 1980). The Fraser Government, fearing the electoral consequences of implementing the IAC's recommendations, opted for a 'standstill program', prolonging the 'temporary' quota system with the aim, or rationale, of maintaining current levels of productive activity and employment. Throughout this period TCF employment stabilised at around 117,000, or approximately 9.5% of total manufacturing employment. However, despite higher levels of protection

than other manufacturing sectors, rates of growth in investment remained below the industrial average (Gregory, 1985).

In January 1982 a seven-year plan for the sector was introduced by the government, aimed at gradually managing change through progressively increasing quota levels and increasing the amount of quota to be made available for allocation by tender each year. The plan attempted to open up greater opportunities to Australia's trading partners while providing a stable environment in which Australian manufacturers could plan for the future. The plan attempted to perform a complex balancing act of competing interests. As the government acknowledged, while "having regard to employment in the (TCF sectors), the program is designed to provide an equitable balance between the often conflicting interests of Australian consumers, those involved in the industries, importers and Australia's trading partners"(Aust. DTR/DIC, 1982:1). Undoubtedly, the problems involved in performing such an elaborate act led many to question its desirability at all. The principal, if unintended, effect of the plan was the institutionalisation of a bewildering and complicated array of measures, ranging from quotas, tariffs, bounties, by-laws, developing country preferences, regional measures, payroll tax exemptions etc., which become an accepted feature of the economic landscape. The IAC was quick to point out the 'irrational' economic behaviour generated through this complex web of arrangements:

Attempts to fine-tune arrangements to meet each newly perceived crisis have in sum yielded a set of almost incomprehensible interventions. Customs and by-law schedules are replete with inconsistencies, trivial and impractical distinctions and arcane guidelines. Terms and conditions of import are almost impossible for the expert administrator, let alone users, to follow. Many have wound up as arbitrary and discriminatory to no general good purpose. People have had little option but to monitor and strive to influence decisions taken by the bureaucracy and by government, so much so that virtuosity in manipulating assistance is a high priority for the exercise of entrepreneurial talent. What a waste this is. (Aust. IAC, 1986: xiii).

By the mid-1980's the trade winds were changing as the newly-elected Labor Government began signalling its intention of pushing towards deregulation in order to meet the challenge of globalisation. Furthermore, by this time there was "an increasing awareness of the failure of policies

based on trade restrictions" to meet their stated aims (Gregory, 1985). It was within this environment that the IAC released its 1986 Report on the TCF industries, and the report's recommendations formed the basis of the TCF Plan, which commenced in March 1989 and will run its course through to June 1995. While the Plan is clearly a victory for the IAC over the protectionist lobby, it is also representative of the IAC's new agenda of attempting to avoid "the creation of special environments for particular industries"—the selective approach—and more towards attempting to remove 'overall' impediments to industry competitiveness—the general approach (Mauldon, 1988).

The principal features of the six-year plan are the gradual dismantling of the quota system and the reduction of tariff barriers by 1995. Out-of-quota penalty rates will be phased down in six roughly equal stages to zero, while the tariff net will be gradually hauled in to the end point of 55% for clothing and 45% for footwear by 1995 (see Button, 1987).

To compensate for the increased import pressure which the sector will face as the Plan unfolds a number of positive incentives have been put in place under the Industries Development Scheme. These include a Textiles Industry Modernisation Scheme (aimed at adding value to raw and semi-processed materials), an Incentives for International Competitiveness Scheme, a Management and Business Skills Scheme, and an Industries Infrastructure Program, all aimed at encouraging Australian TCF companies to become more efficient and internationally competitive. Furthermore, a TCF Unit has been established within Austrade in order to assist companies in exploiting overseas market opportunities (through the Export Development Program). Both the 1986 IAC Report and the TCF Plan acknowledge that some "TCF workers may lose their jobs as a result of restructuring" and, to compensate, a Labour Adjustment Program has been created through the Department of Employment, Education and Training (DEET) and the Commonwealth Employment Service (CES) network. This program can arrange retraining courses, wage subsidies and relocation assistance to workers adversely affected by the 'revitalisation' of the industries (see TCFDA, n.d.). Should the Plan "go horribly wrong" (defined as a production decline of 20% for the clothing industry) provisions have been made for a 'safety net' which could freeze the Plan and force a fundamental review of the sector.

This profusion of programs, schemes and strategies is being administered by a new umbrella statutory body, the Textiles, Clothing and Footwear Development Authority (TCFDA).

All interested parties appear to have accepted the inevitability of industrial restructuring. For the government, it is a logical progression down the path of deregulation and reduced government assistance for industry, and it follows the prescriptions outlined in the two major reports of the IAC during the 1980's. The Clothing and Allied Trades Union (CATU) has moved in line with the ACTU's document "Australia Reconstructed" and has actively supported the TCF Plan (Ellam, 1990). Within its framework they are working to ensure that its implementation corresponds with award restructuring, multi-skilling and higher wages. Anna Booth, CATU's secretary, believes that the industry is at the crossroads of oblivion or regeneration. "What we have to ask is: is this industry going to continue as the lowest paid industry in Australia, making a bit of everything, always desperately seeking protection from low-cost imports? Or is it going to be a high-wage industry, possibly a smaller industry, competing on the world stage on the basis of quality and fashion?" Referring to her members, she points out that "We've always got the arse-end of protectionism. That is why I say categorically that if this industry is not a high wage industry in five years time, then it's not worth having" (Bagwell, 1989; Hooper, 1989). The employers have also now accepted that the days of high protection are numbered and are tailoring their corporate strategies accordingly. They acknowledge that the 'gradualism' of the TCF Plan is superior to the overnight 25% tariff reduction implemented by the Whitlam government in 1973, allowing them time to adjust to the new conditions. Their main concern is now ensuring that the government maintains the parameters they have set for reconstruction in the face of calls to 'compress' the program within a shorter timeframe (see Garnaut, 1989)

When Keith Purcell, the Executive Director of the Textile, Clothing and Footwear Council of Australia (TCFCA), told an industry briefing in Sydney on May 3, 1990 that he "can't remember a more challenging period facing the TCF sector" many company spokespersons in the audience clearly perceived the word 'challenging' as a euphemism for 'impossible'. Many pointed to a series of unique features in the Australian environment, ranging from geographical location to the current economic climate, which

compound the problems local manufacturers are having to face while adjusting to the TCF Plan. Firstly, Australia is now unique among all other developed countries in its degree of deregulation, since the others still employ some form of volume restrictions, or quotas, on apparel imports from developing nations. The Australian government's decision is clearly pro-active in terms of international trade policy. Secondly, the clothing producers of other OECD countries have much larger markets to serve than Australia, posing the problem of economies of scale. Thirdly, these nations are much closer to the recognised centres of leading-edge technology than Australia, creating major import headaches with respect to investments in plant and equipment. (The key annual apparel machinery trade fairs are those of Cologne in West Germany and the Bobbin Show in Georgia, U.S.A.) Fourthly, the Plan has been implemented on top of some of the toughest market conditions in the past two decades. Manufacturers' problems have been accentuated by the general downturn in consumer demand and high interest rates, as the government uses its fiscal muscle in an attempt to curb spending. Indicators of its success can be seen in the depressed retail sales of large companies such as Coles Myer over 1989-1990 (*Australian*, 1990), and the effect is being passed back through the industry chain to the clothing producers, who finished 1989 with stocks 7% higher than the previous year. Thus, manufacturers are concerned that while the international playing field remains uneven, they are being forced to play by rules unsuited to the terrain.

While all players predict that the industry will contract in terms of number of establishments and employment other developments surrounding the industry suggest that the 'sunset' of Australian clothing manufacturing is far from an inevitable process. Given appropriate public policies and an environment of cooperation between companies in the industrial chain (from raw material and component suppliers through to retailers) the 1990's could witness the 'dematuration' or regeneration of the industry.

By the end of the 1980's three developments had converged with the government's stated intention to liberalise trade and called into question the comparative advantage of low-wage nations in apparel manufacturing. The first condition is the changing market conditions within developed nations, where consumers and retailers are demanding greater variety, more innovative design and higher quality products. The satisfaction of this

demand has forced manufacturers to consider more flexible manufacturing systems to react more quickly to a more diversified and segmented market (see AAMA, 1988). This transformation has led many commentators to suggest that industry is moving away from 'Fordist' techniques of mass production serving a mass consumption market to one of post-Fordism, using more dedicated machinery, producing shorter batch runs and adopting techniques offering greater flexibility at the firm level (Mathews, 1989). Secondly, technological advances during the decade moved towards solving many of the problems associated with Quick Response (QR) and Just-In-Time (JIT) production strategies. The application of micro-electronic-related products and robotics to the clothing industry has been notoriously difficult due to the limp nature of the materials handled, which are unlike steel, wood and plastics. The 'smartest' computers find it difficult to recognise and accurately transform fabrics which change their shape when gripped. Over the past decade, however, numerous microelectronic-related *products* have been harnessed to the production *process* within the clothing industry to reduce the timespan between product initiation and final delivery of finished goods (see Rush & Soete, 1984). These advances in automation have radically transformed the stages of concept initiation and pre-assembly (although the assembly stage remains highly labour-intensive and dominated by the traditional sewing machine). Thirdly, the application of new managerial strategies, such as JIT, QR, Total Quality Management (TQM) and Value-Added Management (VAM) have meant that shorter production runs are now more cost effective. Furthermore, these techniques have reduced many non-labour and non-value-adding costs (such as materials handling) and increased overall efficiencies. The implementation of these strategies also poses the question of whether they demand a more highly skilled workforce and challenge the traditional image of clothing manufacturing as a 'sweatshop' industry (AAMA, 1988; Windsor, 1989)

In the light of this changing environment, hypotheses have been generated suggesting that the comparative advantages afforded to low-wage nations may become less important as Quick Response, flexible manufacturing systems, higher quality, innovation, brand strength, and niche marketing become the critical success factors in leading-edge clothing manufacturing (Aust. DITAC, 1985; Pearson, 1986; OECD, 1988; Hoffman & Rush, 1988, Parker, 1989a). Moreover, the 'comparative advantage' of the low-

wage countries is further offset by the problems of distance in a retail market dictated by increasingly shorter turnaround times and stockholding reductions. The logic of JIT techniques demands delivery reliability coupled with smaller, more frequent, orders, and local producers have a distinct natural advantage in this field (Sloan, 1985; Parker, 1989b).

Thus, as the Australian clothing industry enters the 1990's a host of factors are forcing companies to rethink traditional methods of garment manufacturing. Furthermore, many of these factors are centrifugal, some exposing the industry to dangers and challenges, while others open possibilities and opportunities. The combined nature of these forces compound the difficulties of predicting the form the industry will assume by the turn of the century. This paper will demonstrate that there is another crucial factor, often ignored, which must be taken into consideration before any predictions are made, namely the role of the retail sector.

METHODOLOGY

It is within this evolving economic, technological and organisational context that clothing manufacturing was identified as one of three case studies for the research study "A Local Division of Production: Technological Change and Productive Interlinkages in Australian Manufacturing". The other sectors chosen were the automotive and electronics industries. In order to 'map' the structure of Australian clothing manufacturing, and identify the 'core' firms driving technological change and innovative behaviour, preliminary interviews were conducted with a wide range of groups involved with the industry. Although these interviews were unstructured their aim was to develop a multi-dimensional picture of the clothing industry, to understand the variables affecting change within the sector, and to identify problems facing diverse interests in adapting to industry restructuring. Government-related interviews were conducted with a former IAC commissioner involved in the IAC TCF reports of the 1980's, the Department of Industry, Trade and Commerce (Victoria) and the Textile, Clothing and Footwear Development Authority. Interviews then proceeded with organisations closer to the 'coalface', including the Textile, Clothing and Footwear Council of Australia (the main clothing employers' association), the Clothing and Footwear Institute (CFI) and the Clothing and Allied Trades' Union. Discussions were also held with

relevant trade magazines, TAFE fashion and design coordinators, apparel machinery suppliers and other researchers conducting studies into the industry.

The preliminary findings from these interviews suggested that any study of clothing manufacturing had to extend beyond the realm of manufacturing proper and take into account the crucial role large retailers perform in the process of product and process innovation. Indeed, there appeared to be a growing degree of cross-fertilisation of functions between retailers and large manufacturers. Thus, within the context of the overall study, the core firms within the clothing industry appeared to differ in nature from those identified in the automotive and electronic sectors. (In the automotive industry core firms were the five major car assemblers, and in the electronics industry they were usually giant multinational corporations assembling mainly overseas-produced components into electronic-related products). It was decided to define the large retailers as core firms while manufacturers were defined as suppliers. Within the manufacturing sphere proper, a distinction was made between the large, or 'principal', manufacturers and their 'makers up' (sub-contractors to whom the principals hive-off or farm out aspects of the production process, such as sewing operations). Thus, a three-tier relationship was bracketed off within the clothing *filiere* as the central focus of the study incorporating large retailers, principal manufacturers and makers up. In this sense the clothing industry more closely resembles the food-processing industry than the automotive or electronics industry.

Justification for this methodology also came from existing research literature in the UK and elsewhere, which highlighted the important role of retailers in encouraging innovation and quality improvement among their manufacturing suppliers (Tse, 1985; Senker, 1988; Gibbs, 1988).

Interviews were then conducted with a number of Australia's largest clothing retail chains in order to examine areas such as their marketing techniques, their purchasing policies, their perception of their manufacturing suppliers and their involvement in the production process, from design through to packaging. Once data from these firms was collected and analysed a structured interview schedule was administered to eighteen principal clothing manufacturers. These were either individual

private companies, individual public listed companies, or divisions within larger corporate networks. All had been listed in 1989 within the top ten performers with respect to turnover. All interviews were conducted in New South Wales or Victoria at the factory level or at corporate headquarters with senior production staff. Areas covered included company structure and operations, customer profiles, product innovation, production details, technology used in the enterprise, work organisation, company restructuring, relations with suppliers and subcontractors and perceptions on the future of the industry. Finally, similar questionnaires were administered to a number of makers-up (CMT's) and also to a number of small-to-medium sized manufacturers involved in the fashion industry.

The analysis below focuses upon the interviews conducted with the core retailers. The reasons for this emphasis are twofold: firstly, to justify the definition of retailers as 'core' firms within the overall context of the 'Local Division of Production' project; and secondly, to provide evidence that the retail sector has performed a crucial role in the transformation of manufacturing techniques and managerial practices within the industry. A more detailed analysis of the diversity of manufacturing responses to change will follow this paper, entitled 'Rhetoric and Reality in the Clothing Industry: The Case of Post-Fordism'.

THE CHANGING FACE OF RETAILING

If Australian clothing manufacturers are to survive during the 1990's they must respond positively to the changing trade environment created by the removal of the quota system and the reduction of tariff barriers. These conditions will encourage an influx of garments from the low wage, newly industrialised countries. Survival therefore depends on convincing the Australian consumer that the Australian-made product represents equal or better value than their imported counterparts in terms of quality, price and reliability. Yet, it is the retailer who interprets the wants and desires of the consumer. A more cooperative environment between retailers and local manufacturers than the conflict evident in the 1970's must therefore form the cornerstone of the local industry's survival and regeneration.

In the existing literature on industry, there is a tendency to view retailers as merely passive recipients of products from manufacturers and wholesalers

and to treat them as simply 'shopkeepers'. As Bliss has noted "economic theory has had extraordinarily little to say about the retail enterprise. The theory of production and pricing has been mainly addressed to the manufacturing firm and does not readily translate itself to the case of the shop.... To this day the great majority of textbooks on microeconomic theory do not treat retailing at all." (Bliss, 1888: 376-7; see also Tucker & Yamey, 1973) This productive/non-productive distinction often employed in political economy has been questioned by Jacqueline Senker in her study of the role performed by supermarkets in the British food processing industry. Her conclusions "demand that traditional economic theories about retailing be revised to take account of retailers' active involvement in innovation" (Senker, 1988: 5). On the other hand, Hoffman and Rush's comprehensive analysis of the effect of microelectronic-related innovations (MRI's) upon the clothing industry devotes barely a page to retailing, despite acknowledging the importance of the structure of retailing for manufacturing (Hoffman & Rush, 1988). Currently, little attention is placed upon the way in which the evolving structure of retailing and the changing needs and strategies of retailers affect the manufacturing sector.

One of the most celebrated cases of cooperation between retailers and manufacturers involves the British retailer Marks and Spencer. The company's involvement in manufacturing began in the late-1920's when Simon Marks persuaded the hosiery company Messrs Corah of Leicester to manufacture stockings under Marks and Spencer's own label, St Michael (Tse, 1985). The company has been called a 'manufacturer without factories' cooperating with manufacturers who are 'retailers without stores' (Lord Sieff, 1978). Of the company's six basic principles, two relate directly to their relations with suppliers: firstly, "to encourage our suppliers to use the most modern and efficient techniques of production, dictated by the latest discoveries in science and technology"; and secondly, "with the co-operation of these suppliers, to enforce the highest standards of quality control". The company designs garments, tests and develops fabrics, monitors their suppliers' production, suggests new production techniques aimed at better quality and greater efficiency, markets the product under their own St Michael brandname, then receives feedback from consumers through their retail outlets. Over 350 technologists are employed with the charter to: "1) provide a technical link with our manufacturers with whom they talk a common language; 2) advise and

educate our own management in technical matters; 3) provide high standard specifications for our own products; 4) follow through the control of quality; 5) search for the most promising new lines of development and co-operate with our manufacturers in the formative period; 6) act as catalysts by keeping our manufacturers informed of new machinery or processes which would improve production and quality" (Salisse, n.d.). These activities clearly transcend the traditionally conceived parameters of retailing. The company has over 800 suppliers, 50 of whom it has been dealing with for at least 40 years, and purchases approximately 20% of Britain's clothing production. Although on average Marks and Spencer accounts for between 30-50% of its customers' turnover, a number of the largest suppliers are almost totally 'dedicated' to the production of the St Michael brand. Despite the closeness of their relationship with these manufacturing suppliers the company does not have any financial stake in them (Tse, 1985).

The Marks and Spencer model has been hailed by many as an organisational panacea for problems as diverse as 'late development' in developing nations to the streamlining of the British Civil Service and British Telecom (see Howells, 1981; Tse, 1985). Within the Australian clothing industry the model has been suggested by some spokesmen as a necessary direction for the industry's survival. For example, writing in the October 1988 issue of the CFI journal *SewTrade*, John Beckenham noted that Australian retailers "are already demanding quality improvements from local makers—and this is likely to become the norm. In United Kingdom the great Marks and Spencer chain have done much to improve British manufacturing overall. And this could and should be the shape of things to come in Australia" (Beckenham, 1988).

There are others, however, who question the benefits which accrue to manufacturers through such a close marriage with their giant retailing clients. Firstly, dependence on a single customer leaves manufacturers vulnerable if they are unable to respond to a shift in their core customer's marketing strategy. Long-term contracts are the rare exception rather than the rule within the garment retailing sector. Retailers always reserve the right not to purchase their suppliers' products. Secondly, many consider the pivotal role of Marks and Spencer within the production process as a recipe for ossification rather than innovation within the manufacturing sector by

discouraging an in-house culture of quality awareness. Thirdly, the dominant position of the company has led to the criticism that it is able to squeeze and control the profit margin of its suppliers, adversely affecting technical innovation, stunting growth and discouraging investment. These criticisms are often heard during periods of retailing downturns or price wars among the giant retailing chains. Fourthly, while Marks and Spencer argue that they have no interest whatsoever in vertical integration and continue to have no financial stake in the manufacturing sector, this has led to claims that their position allows them to assert 'power without financial responsibility' (see Plant, 1981; Rainnie, 1984; Gibbs, 1988).

The remainder of this paper will examine the evolving relationship between retailers and manufacturers within the Australian context and examine the following questions: to what extent has the evolving structure of Australian retailing affected manufacturers? To what extent have retailers followed the Marks and Spencer model of fostering closer linkages with the manufacturing sector? Finally, the paper will briefly examine how manufacturers have responded to retailers' evolving demands.

AUSTRALIA'S RETAILING ENVIRONMENT

Australia's retailing environment has undergone significant change over the past two decades. Firstly, the retailing sector has witnessed a process of mergers and take-overs resulting in a far more oligopolistic structure than previously. Up until the mid-1970's the market was dominated by a host of small-to-medium sized independent department stores. While there still remained, by the end of the 1980's, some 400 department stores, 450 general stores and 13,200 boutiques and specialty stores, a small number of large conglomerates dominated the market. The Coles Myer group, as a result of the merger of the two companies in 1985, is now the largest retailer in the southern hemisphere and the 12th largest retail chain in the world. It is also the largest private employer in Australasia with a total staff of 166,000 (Coles Myer, 1989). This represents enormous strength when the relatively small market it serves is taken into consideration. The second principal retail conglomerate is the Adsteam group, which acquired 93% of the Industrial Equity group in 1989. This brought together David Jones and the Big-W chain, plus a number of smaller retailers. However, the potential synergies are not as great within this group as within the larger Coles Myer

group, whose divisions often share purchasing offices and quality control departments. Manufacturers in this environment have lost the luxury of being able to move orders from one department chain to another, offering the same product. The loss of a major customer, or even a major order, can often spell commercial disaster for a manufacturer (TCFIC, 1984; Konstantanidis, 1987; City of Melbourne, 1987). It also enables the large retailers to dictate stricter terms and negotiate larger discounts from their suppliers.

In response, more and more manufacturers (especially small-to-medium sized companies in the fashion end of the market) have attempted to guarantee at least a partial market through establishing their own retail outlets, usually in exclusive sectors of major cities. An associated development has been the growth of 'concept' stores, or 'stores within a store', whereby core department stores sublet floorspace to a manufacturer or designer, who employs specially trained sales staff and fills/refills the space with its own coordinates and collections. This practice lessens the distance between manufacturer and final consumer, while attracting customers, who have to walk through other sections of the retail establishment. In turn, core retailers, such as David Jones, are attempting to promote the image of shopping as an 'entertainment' in order to compete with the mass-merchandising discount stores (BRW, 1990a). While more department stores are adopting this form of restructuring an independent consortium is planning to open a specialty department store in Sydney catering for fifty suppliers along the lines of *Galleries Lafayette* and *Printemps* in France and the *Diamaru Department Store* in Tokyo (Ragtrader, 1989).

Secondly, the process of mergers has created a number of locational difficulties for many manufacturers, as the large retailers move towards more centralised purchasing policies, in order to avoid duplication of buying offices. For example, from the winter of 1990 onwards, the Coles Myer group will close its Grace Bros buying office in Sydney and replace it with central buying from Myers in Melbourne. Sydney manufacturers who previously dealt with Myers will feel the effect less, but for those who dealt principally with Grace Bros (Sydney's last big department store group) the move will be a disaster if they fail to penetrate Myers' orders book (Menswear, 1989; Ragtrader, 1990).

A third change in clothing retailing over the past two decades has been the growth of the discount market. Coles Myer dominates between 65-70% of the discount market through their K-Mart and Target chain stores alone, excluding their other volume-purchasing stores such as Fosseys and Katies. As this paper will later demonstrate, the discounters have performed a catalytic role in transforming relations between retailers and manufacturers.

Fourthly, the discounters, and to a lesser extent the department stores, now also compete directly with the manufacturers branded products through their own housebrands. Within the Target discount chain, for example, the majority of clothing items are sold under the store's own Target brand, while department stores also market their own in-house, 'pricewise' brands, such as David Jones' St James and Agenda labels. Mass manufacturers who previously occupied the middle of the market have therefore been forced to diversify their brand strength and sharpen their marketing strategies in order to cope with the segmentation of the market into department stores and discount stores (PSA, 1987). For example, one of the reasons for Holeproof's strength over the past decade has been its success, through product diversification, in tapping into the discount market with its Rio brand. In order to succeed in this price-sensitive end of the market the company was prepared to run a loss on the brand from its inception in 1979 until 1982. Today Rio is Holeproof's single largest seller with an annual turnover of \$120 million and a marketing budget of \$3.5 million (Shoebridge, 1989).

Fifthly, the large retail chains have also become increasingly active in the field of direct importing (TCFIC, 1984; Cummings, 1986; PSA, 1987). For this reason wholesaling importers have become an increasingly less significant feature in the Australian clothing landscape. Importing has always been an important element in the industry and since the establishment of the Tariff Board in 1921 there have been some 500 reports released relating to importing arrangements in the TCF sector (Aust. IAC, 1986). Interestingly, during the 1930's Japan was one of the largest countries of origin of cheap apparel into Australia. By 1988 33% of clothing imports came from China, 10% from Taiwan and 8% from Korea (TCFCA, 1989). The large retailers now use their volume-buying power to purchase imports directly, or through overseas agents, and are able to

absorb the margins traditionally taken by wholesale importers. Coles Myer are Australia's largest quota holder, while Big-W are also significant. However, some 2,000 establishments are still involved in wholesaling or importing of TCF products. Only one of Australia's top ten clothing companies, the Danchen Corporation, is principally an importer rather than a manufacturer. As the quota system is progressively dismantled during the course of the TCF Plan, principal manufacturers, such as the Gazal Corporation, have voiced their intention to become more and more involved in competing with the retailers in apparel importing in the cheap end of the market, in an effort to supplement their ranges and retain their market strength (Thomas, 1989). As one Manufacturing Manager stated: "We won't sit back and let the retailers take our part of imports".

Thus, both the changing structure of retailing and the changing trading environment have forced changes in Australian clothing manufacturers' practices: The manufacturers' *spread of customers* has been adversely affected by the growing concentration of retailing establishments while the segmentation of the market into discounting and department chains has forced the manufacturers to *diversify their range of products*. The introduction of housebrands by the retailers has also forced the manufacturers to become more conscious about the image of their own brandnames and targeting a particular niche, and consequently heightened the importance of their own *marketing strategies*. Lastly, the TCF Plan has forced many manufacturers to consider expanding their non-manufacturing activities through competing directly with the retailers in the *importation* of garments. The changes noted by the American Apparel Manufacturers' Association in the United States are also beginning to make themselves felt within Australia:

Revolutionary changes in the apparel marketplace have seen large retail organisations integrating backwards into manufacturing, sourcing their own private label merchandise directly while assuming many of the product development roles once performed exclusively by manufacturers. At the same time, vendors with strong brands have set up their own retail outlets, or taken control over their own space within department stores. Such role changes have distorted the boundary line between vendors and retailers, while raising the premium on more flexible and responsive manufacturing capability (AAMA, 1988: 2).

The remainder of this paper will provide two examples of how Australian retail organisations have integrated backwards into manufacturing. These are areas where retailers have actively encouraged changes in manufacturers' practices. The first area concerns 'quality control' and second involves 'quick reponse'. These examples also provide further evidence of retailers' core status within the clothing *filiere*.

RETAILING AND QUALITY CONTROL

The discounters have been at the forefront of revolutionising relations between retailers and manufacturers through their growing concern (some manufacturers would claim obsession) with quality control in the extremely competitive high volume, lower end of the market. All the large discounters have invested millions of dollars in extremely sophisticated quality control laboratories and demand exacting specifications from their manufacturing suppliers. Quality control has evolved to become a core component of the discounters' purchasing policy and now encroaches on many operations traditionally conceived of as lying within the manufacturers' sphere of responsibility.

Until the late-1960's the boundaries between manufacturing and retailing remained conventional: manufacturers designed, produced, assembled and packaged while retailers remained shopkeepers. No Australian mass retailer had attempted to emulate the Marks and Spencer philosophy, developed in the 1930's and 1940's, whereby the retailer functioned as a 'manufacturer without factories'.

There was a peculiarly local reason why major issues of quality control emerged in Australia. It did not simply emerge as a desire to emulate successful overseas models. One of the main catalysts for change was the retailers' frustration with the anarchy that existed (and still exists) with size specifications among Australian clothing manufacturers. There were virtually no standards regulating, for example, the dimensions of a mens' size 12 shirt. This problem reaches its height at the interface between the retailer and the final consumer, resulting in customer returns and product mark-downs. Unlike European countries, which undertake regular surveys of the changing physical shape of their populations, anthropometric studies are almost non-existent in Australia. Ironically, there have been exceptional

cases where Australian manufacturers have pioneered scientific research into the changing shape of the human body. For example, as far back as 1926 the Berlei Company (now part of the Pacific Brands division of Pacific Dunlop) in collaboration with Sydney University conducted a study of 6,000 women and revolutionised corset fitting through their 'Berlei Figure-Type Indicator' and the 'Berlei Five Figure Type Classification'. These indicators became internationally accepted standards for corset manufacturing. However, such collaboration between research institutes and the industry have been rare exceptions rather than the norm. Even today there are no body measurement standards for mens' clothing, while the accepted standards for womens' clothing, the AS1344-1975, was based upon a 1969 study conducted by the Standards Association using overseas information topped up with responses from people who filled in a coupon in the *Australian Womens' Weekly*! Most industry spokespersons acknowledge that these statistically unreliable standards are in need of revision (see *SewTrade*, 1990).

Given the lack of coordination among Australia's 1,700 clothing manufacturers, retailers are constantly calling for a uniform set of standards agreed upon by all manufacturers and retailers. In the meantime size specifications have become an important part of the function of retailers' quality control departments.

Prompted by the lack of coherence in garment sizes K-Mart established quality control in 1968 (the same year they entered the Australian market in a joint-venture between Coles and the US company SS Kresge). Around the same time Woolworths set up a quality control department, consisting of a desk, a telephone, an iron and a domestic washing machine. From these modest beginnings quality assurance departments grew to assume more and more control over the specifications demanded for garment purchasing, such as fibre content, country of origin (and other factors of component and production traceability), care labelling, flammability, dyefastness, shrinkability and variability or replicability. All major discounters now rely upon quality control facilities to inform and guide their purchasing departments and monitor suppliers' production.

While retailers will still stress that they are 'shopkeepers' and that "quality is none of our business", the central role of such quality control

departments within the retail sector has radically transformed the traditional relationship between retailers and manufacturers. While no Australian retailer has gone as far as Marks and Spencer in monitoring and controlling their manufacturing suppliers, the trend over the past twenty years has been in this direction, especially in the high-volume discount end of the market. Target is widely considered to be the Marks and Spencer of Australia, closely followed by their Coles Myer cousin, K-Mart. At a seminar held in mid-1988, jointly sponsored by the Australian Retailers Association (ARA) and the National Industry Extension Service (NIES), entitled 'Without Quality, What Future?', K-Mart announced its intention to begin 'quality auditing' their manufacturing suppliers. "The audit would measure their competence and their ability to prove reliable suppliers, and the information would be provided to buyers to help assess the manufacturers quality attitude." Likewise, Target demands that suppliers submit themselves to a quality assurance test before they are placed upon Target's supplier list (*Ragtrader*, 1988). Their quality controllers can walk into manufacturers' establishments at any time to monitor production techniques.

It is clear that the transformation in client-supplier relations over the past two decades has been driven principally by the discounters rather than the more up-market department stores, such as David Jones and Grace Bros. David Jones does not even possess a quality control department, while Grace Bros inspections are conducted on receipt of goods using AS1199, a statistical method 'Sampling Procedures and Tables for Inspection by Attributes'. One means of expressing this distinction between the department stores and the discounters is through describing the department stores' approach to their suppliers as 'arms length', compared to the discounters more 'direct control' approach (Gibbs, 1988).

The more up-market department stores practise quality control while the discounters have moved beyond this stage into the realm of quality assurance. Quality control involves the inspection of the finished product at the end point of the production process or at the customers' receiving stations. The methods used are usually statistical spot-checking. On the other hand, quality assurance involves 'building in quality at the source'. The method centres upon ensuring that as far up the production chain as possible, from suppliers, to suppliers' suppliers, suppliers' sub-contractors

and component and raw material suppliers, quality problems are discovered and isolated and that any offending garment or component is either reworked or rejected. Through using this method of building in quality at the source retailers have witnessed a dramatic improvement of the quality of goods-on-receipt. For example, Best and Less, which undertook a major restructuring of its quality assurance program in 1983, has reduced the proportion of rejected garments from 25% down to around 2%. This reduction is even more impressive since the company now possesses one of the most sophisticated quality laboratories in the country. In other words, the company has raised the quality of its garments while lowering rejects, using more sophisticated quality indicators (*SewTrade*, 1988).

Quality assurance, rather than quality control, is even more important for a retailer such as Best and Less, which has resisted the trend towards centralised warehousing and distribution. Manufacturing suppliers and wholesalers send their orders direct to Best and Less' 80 retail outlets. This strategy requires an enormous amount of trust between the retailer and the manufacturer because any quality faults are more likely to be detected by the final consumer rather than the retailer. Under these conditions, priority in quality assurance must lie in educating and assisting manufacturers to be more quality aware rather than 'policing' goods for quality as they arrive in delivery trucks at the retailers' gate.

The process, or cycle, involving design, ordering, inspection, reordering or redesigning, is known as the 'quality control loop' by both discounters and department stores. The discounters' loops are generally more rigorous, involving more inspection steps. A typical loop practised by one of the major discounters is described below, in order to demonstrate the influence which retailers assert over the manufacturing process. There are five main stages in the control loop: sample testing and report raising; garment inspection in production; inspection of finished goods at the distribution centre; random sampling in selected stores and store complaint-feedback; analysis of computerised sales figures and final gross profit performances of items.

A garment sample or prototype will be delivered by the manufacturer to a retailer's quality assurance department. This prototype will have been

designed by the manufacturer or the retailer will have asked the manufacturer to produce it according to their specifications, or some combination of the two. The garment then undergoes a process of testing for fibre content, size, dyefastness, shrinkage in washing machines and tumble dryers, shading, flammability etc. From the test a report will be raised. There are three types of reports, based on a 'traffic light system', which are sent to the purchasing or buying department for decisions on the volume to be produced. A green report signals that the prototype meets the retailer's quality specifications and enables the purchaser to place orders with the manufacturer. A yellow report signals that the prototype requires some minor modifications before entering the mass production stage, while a pink or red report signals that the garment requires complete reworking before being considered by the purchasing department.

Once the garments are given the green light they are inspected in production, and the retailers' quality controllers monitor the production methods applied in the factory. The principal quality assurance problem at this second stage of the quality loop is ensuring replicability, or minimising variability. Enormous frustration was voiced by Quality Control Managers interviewed on this problem. According to one "the main problem is once an excellent prototype is developed they can seldom assure replicability of 2,000. Why? God knows! If it's done in three different factories we often get three different styles!". Apart from the human error inevitable in any labour-intensive process such as garment manufacturing, production is often either farmed out to other factories or is hived-off to sub-contractors employing individual outworkers. According to another Quality Control Manager, "garment quality in the volume end has decreased with the practice of sub-contracting garment manufacture" (*Ragtrader*, 1988). It is physically impossible to monitor production at every sub-contractor's establishment, especially considering that many sub-sub-contractors are outworkers operating from home. Many manufacturers are ignorant about where a garment or a bundle of garments will be at any particular time. Suppliers' lists are often no more than a list of phone numbers! This practice of sub-contracting, or hiving-off, various aspects of production has been described by some commentators as a feature of flexible manufacturing systems (FMS). However, within the clothing sector this practice is as old as the industry itself (cf. Hutchins, 1908; Bolton, 1975; Fry, 1986; Morokvasic, 1987; Hargreaves, 1982; Ellam, 1990). As Probert

and Wajcman note, the practice has traditionally represented an "attempt to overcome the limitations of inflexible Fordist production systems" (Probert & Wajcman, 1988: 438). Many core retailers are now calling for greater traceability in order to control variability in the assembly stage. According to one: "From 1980 onwards there has been a major swing away from in-house manufacturing to outdoor makers. This remoteness of the direct manufacturer has caused quality problems for the retailer. We've been forced away from quality assurance back to quality control, to inspection control." (For a discussion of this swing, see Cummings, 1986; Morokvasic, 1987)

As will be discussed in the next section, most of Australia's principal manufacturers have attempted to retain a competitive edge and satisfy retailers' quality demands through introducing microelectronic-related innovations in design, pre-assembly and the assembly stage. Their scale of production has made investment in such equipment feasible. Furthermore, the majority of principals interviewed tended to limit the practice of subcontracting to a minimum (if they engaged in it at all). Quality concerns were often stated as the main reason for its avoidance. On the other hand, among the small-to-medium sized fashion companies interviewed, subcontracting and the use of outwork was systematic. More and more companies in the small batch, high fashion end of the market are divesting themselves of in-house manufacturing and concentrating on their strengths, such as design and marketing. It is also significant that the principals which engaged in the highest proportion of subcontracting were also in this end of the market. This practice (combined with the sophisticated use of information technology in production planning and distribution) formed part of Benetton's strategy for growth in the fashion industry from the late-1960's onwards (Belussi, 1987). Furthermore, many small-to-medium sized manufacturers in the volume end of the market have adopted this form of 'numerical flexibility' (shedding the most labour intensive component in the production process) in order to remain competitive against cheaper overseas labour, while retaining the advantage of their proximity to the market. Moreover, in a competitive market dictated by 'feasts and famines' many manufacturers are forced to deliberately overcommit themselves to orders and rely upon sub-contractors and outworkers in order to meet the tight schedules imposed upon them by the

retailers. Yet, in the long-run, the continuation of sub-contracting militates against the process of quality improvement and enhancement.

The third point in the quality loop involves the delivery of the order to the retailer's distribution centre. With the tendency towards centralised, computerised distribution centres, retailers are now demanding much stricter delivery times. If deliveries are early or, more commonly, late large distribution centres cannot cope with the offending order, often leading to the cancellation of orders or discounting, even at this late stage. Delivery reliability has become a major factor which is added to the physical attributes of the garment in determining a manufacturer's eligibility as a quality supplier. For this reason retailers have become increasingly interested in the production planning mechanisms used by their manufacturing suppliers. This will be explored in greater detail in the next section.

Once orders pass through the doors of the distribution centre they undergo statistical inspection and are repackaged for the individual retail outlets. At this, the fourth, stage in the quality loop random samples are taken in selected stores and feedback is recorded through customer complaints. However, the ultimate determination of quality depends upon consumer preference. For this reason the final link in the quality loop is regarded as the computerised sales figures and the final gross profit of the items. Bar-coding has enabled the retailer to measure the performance of each garment stock-keeping unit (SKU) in the store, in each size and colour. This information is then fed back to the purchasing department and/or the quality control department for the next generation of orders or redesign.

Thus, while no Australian retailer has gone as far as Marks and Spencer's 'manufacturer without factories' philosophy the tendency has been for retailers, especially the discounters, to become more actively involved in quality control and the production of garments. Many manufacturers, frustrated by quality control problems and rejected garments, have responded by approaching the retailers' quality control laboratories seeking advice and assistance in areas such as textile quality and production techniques. As on Quality Control Manager noted: "More and more are coming to us for assistance. It's frustration. They're sick of being the ham

in the sandwich. They are sick of being crucified by ----- (one of the core retailers)".

RETAILING AND QUICK RESPONSE

While the core discounting retailers have become more actively involved in the engineering of garments, the manufacturers themselves have not been slow to develop their own responses to the changing environment. Many divisions within Australia's principal clothing companies do not deal with discounters, targetting their products at the more up-market department stores and smaller specialist stores and boutiques. Their own ability to respond flexibly to changing conditions is reflected in their willingness to adopt new microelectronic-related production processes and, in some cases, new managerial systems, such as JIT, VAM and TQM.

There are numerous myths which need dispelling about the industry, especially among the principals (the top ten of whom account for some 30% of production). As anyone who has taken the time to walk through their production plants quickly discovers, their operations do not conform with the 'sweatshop' image which has traditionally characterised the industry. While sweatshops, sub-contracting and outwork still plague the industry (especially among small-to-medium companies and women's fashion) and will continue to do so because of the various structural and economic reasons alluded to above, the majority of principals operate facilities which can justifiably be labelled world-class. As noted in the previous section, most have invested heavily throughout the 1980's in 'greenfield' sites, have adopted the latest automated machinery from overseas (and in many cases patented unique adaptations to suit their requirements) and with it also have adopted the more flexible manufacturing and managerial systems which reflect the increasing speed of fashion change and consumer demand. In addition, the overwhelming majority of principals operate closed union shops and have limited the practice of systematic sub-contracting, preferring in-house production.

The use of computer-assisted design (CAD) is now prevalent among the principals, who have invested in systems such as Gerber and Lectra graphic stations, pattern scanners, graders, plotters and markers. In the pre-assembly stage most have robotic spreaders and pattern cutters (either of

the laser or waterjet variety). In the assembly stage, tracking systems (such as the Eton 2002) are being introduced in an attempt to reduce material handling times. Thus, in terms of physical plant Australia's major clothing manufacturers are as technologically efficient as the limits of innovation allow.

The retailers acknowledge this. The problems, as they see it, lie elsewhere. When asked whether their manufacturing suppliers required technological upgrading, retailing Quality Control Managers often respond in the same way:

In terms of technology they are up-to-date. The problem is the need for management training. At one end you've got retailers with sophisticated QC systems. At the other end you've got fabric converters who are technologically competent. In the middle there are the apparel manufacturers who are quite primitive, with a few exceptions. The problem is the technology of management. This is especially the case with small-to-medium suppliers.

Another Quality Control Manager argued:

Machinery is not the problem. Don't underestimate the up-to-datedness of Australian machinery! They've got it all and more! It's a management problem.

While a number of principals have introduced new managerial strategies, such as JIT, TQM and VAM, few have embraced these methods in their totality. The Yakka plant in Shepparton is often considered a model plant in JIT. However, it is apparent that most establishments have merely "picked the eyes out of JIT" (to quote one Production Manager), adopting some elements while ignoring others, such as work organisation. For example, the shopfloor is still dominated by the traditional progressive bundling system, rather than JITlines or the modular system (Windsor, 1989). Within the context of the post-Fordist debate, what was less apparent than the investment in MRI is work reorganisation, or evidence of a process of multiskilling. MRI and Taylorist work practices (in the form of the bundle system and piece rates) usually operate in 'peaceful coexistence' with each other, suggesting that neo-Fordism rather than post-Fordism is the norm in the industry. It remains to be seen whether this simply reflects the

preliminary stage of the bi-partisan Consultative Committees set up by CATU and the employers. However, there was little evidence of the emergence of a post-Fordist consciousness among the principals interviewed. Again, as noted in the previous section, small-to-medium sized fashion companies are also responding 'flexibly' to the changing market. However, the numerical flexibility adopted hardly warrants the optimism of post-Fordism.

JIT is usually referred to in the literature as a managerial strategy affecting the flow of production within the manufacturing sector. However, as most commentators note, its implications flow through the entire chain of production and its ultimate success depends upon a high degree of planning and scheduling among firms in the production chain. As the strategy uses a 'pull' system, a flexible response from manufacturers to customer demand, more attention needs to be placed in the literature upon the role that retailers and distributors perform, for these are the firms which directly interface with the final consumer. The closed quality loop outlined above highlights the important role which retailers perform, or can potentially perform, in effectively pulling through the right products in the right quantity at the right time. The benefits of JIT and FMS are most effectively achieved through tighter coordination between producers and clients, or end-users. All too often the potential benefits of these processes are lost through being "inserted like an 'island' into an ocean of ... chaos" (Eber quoting Brown, 1985: 136). The clothing industry is an excellent example of how the changes which are taking place in production affect the relations between retailers, manufacturers and their suppliers. As in the case of quality control, retailers are at the forefront of the adoption of more flexible manufacturing responses in the industry.

As retailers have become increasingly concerned about speeding up their stock turnaround and reducing lead-times, inventory and delivery times, they have also become more concerned about their manufacturing suppliers' quality loop. In other words, the success of quicker turnaround times within the retail sector relies to a large degree upon the implementation of flexible manufacturing strategies, such as JIT, within the manufacturing sector.

While still at an exploratory stage, core Australian retailers are beginning to take steps which will force a quicker delivery response from manufacturers and their suppliers. While the retail sector has been gearing up for some time for this move, through installing computerised stock re-ordering, Electronic Data Interchanges (EDI) and bar-coding, at least one core firm is preparing for a qualitative leap in this form of partnership development with their manufacturing suppliers. The first pilot project between a core retailer and a principal manufacturing supplier will be conducted this year. This retail-led version of the JIT system is appropriately named Quick Response (QR). Within the next few years the core retailer involved will be demanding Quick Response from all its suppliers, at the pain of substantial discounts for non-conformity.

Quick Response originated in the United States (although it is an adaptation of JIT). Since 1984 the clothing management consultancy firm Kurt Salmon Associates (KSA) has been involved in over 100 Quick Response pilot studies, each showing considerable benefits on returns (see KSA, 1989a, 1989b. See also US Office of Technology Assessment, 1987). It is defined as "a partnership strategy for retailers, manufacturers and mills to achieve faster movement of the right information and products through the merchandising and production pipeline" (KSA, 1989a). The partnership component of the program requires suppliers to maintain balanced inventories and an ability to respond and ship stock item orders within 48 hours of receipt. The pivotal role of retailers is fundamental to the success of QR. According to KSA, in order to capitalise on the potential of the program "retail top management must lead. Retailers must define the operating criteria that define how a Quick Response program must work. Retailers must also measure results and reward both buyers and vendors for achievement" (KSA, 1989b).

This consumer-driven, or 'pull', strategy will require substantial investment from manufacturers in three main areas. The first is in bar-coding, Point Of Sale (POS), and EDI equipment for product marking, computer-to-computer communications between firms and shipping container marking. Second, CAD equipment will be needed for shortening lead times in design, sampling and pattern making. Third, firms will have to introduce production planning systems such as JIT, VAM and TQM for flexible responses in reducing batch sizes and production lead times. Thus, while

JIT has been justified in its own right, due to reduced inventory costs, manufacturing flexibility, space savings, quality control and employee participation, its extension through QR into the retailing sector is expected to further increase returns through closer cooperation between retailers and manufacturers in production scheduling.

Thus, QR is a retailer-driven version of JIT, or, as one retailer defined it, "pulling from the customer interface back to the needlepoint". It is likely to further encourage manufacturers to invest in computer-related stock-keeping, sales and ordering equipment, CAD equipment and flexible manufacturing systems. The core Australian retailers will be in a strong position to enforce these changes in relationships and practices throughout the production chain due to their dominance within the retail sector. Manufacturers have few, if any, alternative sources of demand. The core retailers are likely to use both carrots and sticks in their effort to ensure its implementation. A combination of the 'three p's' used by Latin American dictators and *caudillos* to alter behaviour and ensure compliance will be employed by the core retailers over the next few years to enforce QR. There will be *plata* (money) for those who fall into line, through secure orders and closer cooperation with the giants; there will be *palos* (sticks) for the hesitant in the form of discounting of orders through the costs of not being linked into the retailers' sophisticated ordering system; and there will be *plomos* (bullets in the head) for those unable to accommodate to the changes. As one Quality Control Manager warned: "EDI will be fully operational in three years. We will introduce it. No two ways! Suppliers will have to accommodate to it."³

³ The adoption of QR by core retailers to enhance profitability expands beyond the clothing sector and will affect other industrial chains. The following note in *Business Review Weekly* illustrates the expected transformations within the food processing industry.

"Coles Myer managing director Brian Quinn made it very clear to food retailers at the Foodweek convention last week that he expects large profit increases for the company as a result of what the group calls its quick-response technology. The quick-response technique will substantially reduce the time between the sale of food and other retail items at the checkout and the processing of the purchase order. It will integrate the factory production process and the retail operation. The benefits of this for the retailer and the manufacturer will be substantial, but the manufacturer and the retailer have yet to decide how the bonanza should be divided. Quinn clearly believes most of the additional profit should go to the retailer, and he is in a position to introduce distribution on that basis.

"It was apparent from discussions later that some of the food manufacturers at the convention were not fully aware of the significance of what Brian Quinn was telling

Many principal manufacturers are introducing the associated technology and techniques on their own initiative, recognising the competitive advantage they provide in their own right. For example, the Gazal Corporation has recently upgraded its information systems. In its 1989 Annual Report Joe Gazal wrote that "while further improving our own administrative procedures, [the new information systems] will also provide assistance to the electronic data interchange systems now being operated by large customers in their own sales and reordering controls" (Gazal Corporation, 1989). However, small-to-medium sized firms, already constrained by a tight capital market, will find it far more difficult to respond to the challenge of the retailers and also the TCF Plan. The only options available to such firms may be the opening of their own retail outlets (to guarantee a limited market), the discovery of a comfortable niche or a move up-market, concentrate upon corporate apparel, or an attempt to reduce labour costs through either moving off-shore or expanding the use of sub-contracting and outwork. Through a combination of *plata* and *palos* the principals will be more than likely to survive the process of industry restructuring. However, for a large number of small-to-medium firms, *el plomo* may be the only answer. The argument presented here supports the prediction made by N. Alan Hunter in 1986 that:

The driving force for increased use of technology by the manufacturer will probably come from retailers.... The retailer who recognises the opportunities QR offers can be expected to promote the concept forcefully with his suppliers as he, in effect, passes many of his inventory problems to his suppliers. (Hunter, 1986)

In turn, this forces a more flexible response from manufacturers in order to control inventory.

Quick Response, it must be stressed, is still in its pilot stage in Australia. However, the core retailers have geared themselves towards its implementation and their manufacturing suppliers will have to follow suit. Some principals, as mentioned above, are already preparing for the change. For the hesitant, the knowledge that future orders may depend upon their

them. Those who do not adapt to quick-response, better known as a form of EDI (electronic data interchange) will almost certainly fall by the wayside." (BRW, 1990b)

accommodation to the strategy will certainly provide an incentive to adopt the technological and managerial changes associated with it. What remains to be seen is the form this response will ultimately take. As Campbell has pointed out, the strength of the post-Fordist argument lies in its recognition that important changes are occurring in the production process (Campbell, 1990). However, the evidence presented here suggests that the flexible responses open to manufacturers are diverse, and that while changes are clearly emerging in clothing manufacturing practices at all levels in the market evidence of post-Fordist work reorganisation altering the relationship between capital and labour are far from being realised. On the contrary, a danger exists that the existing segmentation of the labour force into core workers and outworkers will become more structurally distinct as different firms adopt 'appropriate' forms of flexibility.

However, within the context of this paper, the point to emphasize is that quick response and quality control demonstrate the importance of understanding the role performed by core retailers when considering the factors driving technological and managerial changes within the clothing industry.

CONCLUSION

Using the example of the Australian clothing industry, this paper has questioned the parameters most commentators adopt when examining industrial restructuring and the variables affecting technological and organisational change. Economists and political economists all too often concentrate their attention upon the so-called 'productive' sector, or the manufacturing sector proper in devising industry policy. The evidence presented here suggests that a broader conception of an industry chain is more helpful for explaining the variables promoting or hindering technological and organisational change. The study of the Australian clothing industry demonstrates the usefulness of lengthening conceptions of an industry chain to include retailers as a core element, rather than simply an end point or a passive recipient. Retailers in a mass consumption industry such as the clothing industry are a key link in the 'pull' system from the consumer through to the manufacturer and their suppliers. One important policy implication deriving from this is that industry analysts need to focus more upon the interaction between producers and users. In

other words, the development of a national innovation system must take into consideration the process of "learning by producing, learning by using and learning by the interaction of producers and users" (Anderson & Lundvall, 1988; Dodgson [ed], 1989).

The Australian clothing industry illustrates this and examples of the effect of core retailers upon manufacturers have been described. Firstly, the trend towards oligopoly within the retailing sector has led to greater manufacturing dependency upon a small core of clients. Secondly, the segmentation of the retail market into discount and department stores has helped promote a diversification of product ranges. Thirdly, the discounters have performed a catalytic role in heightening the awareness of quality control among manufacturers. Fourthly, in the last section the prediction was made that the core retailers will be a driving force behind the wider adoption of new managerial techniques, such as JIT, due to the emergence of Quick Response systems. The core retailers have progressively encroached upon terrain traditionally considered the manufacturers' sphere of responsibility, to the extent that modern core retailing is as much about production as it is about selling. Shopkeeping is only one function of the core retailer. In addition, the adoption of QR by retailers is forcing manufacturers to broaden their own scope of activities, resulting in a cross-fertilisation of traditional functions between retailers and manufacturers. It is often forgotten that the role of retailing in JIT practices has a long history. It was back in the immediate post-war years that Kiichiro Toyoda and Taiichi Ohno first received their inspiration for the Toyota production system after witnessing the stock replenishment methods used by United States' supermarkets (Sayer, 1985; Sainsbury, 1990).

As economists have pointed out, the TCF Plan will open the Australian market to stiffer import competition. For manufacturers, this pressure will make the introduction of flexible manufacturing systems more and more imperative and more justifiable in their own right. However, the more immediate pressure is closer to home. As one Quality Control Manager warned: "Only those who can meet retailers' standards will survive."

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