Declaration

Except where cited in the text, this thesis is the result of my own original research carried out as a Ph.D student at the Australian National University.

Rahamat Bivi Yusoff

(January 2000)

For reasons of confidentiality no names of persons interviewed are cited in this research. This thesis also avoids relating any specific argument or point of view to a holder of any particular position in any companies, government ministry or department. The laws governing official government secrets in Malaysia impose severe penalties on its civil servants convicted of releasing official secrets of the Malaysian Government. The laws on government secrets also bind the researcher personally, as she is currently a serving civil servant in the Administrative and Diplomatic Service of Malaysia.
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IN MEMORY

IN THE NAME OF ALLAH, THE BENEFICENT, THE MERCIFUL

All praise is due to Allah, the Lord of the Worlds.
The Beneficent, the Merciful.
Master of the Day of Judgement.
Thee do we serve and Thee do we beseech for help.
Keep us on the right path.
The path of those upon whom Thou hast bestowed favours
Not (the path) of those upon whom Thy wrath it brought down, nor of those who go astray.

(Al-Qur'an: Surah Al-Fatihah, verses1-7)

IN MEMORY OF MY BELOVED MOTHER AND SISTER,
MAY ALLAH (SWT) BLESS THEIR SOULS.
Abstract

According to economic theory, under certain conditions markets allocate resources efficiently. However, the conditions for market efficiency are extremely demanding, far too demanding ever to be met in the real world. When markets fail, there is a case for state intervention. But two questions need to be answered first. How much does market failure matter in practice? And can governments put the failure right? These questions reflect the controversial issue regarding the role of state and market in the development process. It has been debated since Adam Smith’s *Wealth of Nations* but thus far no final resolution has been reached. The reason, according to some analysts, could be because the debates have been conducted in binary terms: state versus market. Thus, they suggested that the debates should consider the possibility of adding dimensions to the linear spectrum whereby a combination of certain features of state interventions with others of a free market is considered.

The objective of this thesis is to see whether a ‘state-market collaboration’ strategy can be an impelling force for growth and development. For this purpose, the thesis was divided into two parts. The first part reviews the literature regarding the role of state and market in the US and Japanese economies. The second part examines the public-private sector collaboration in Malaysia’s development process. Exploration of the Malaysian case centred on two levels of research. At the macro level, a survey was conducted to find out how far the Malaysian public and private sectors supported the public-private sector collaboration strategy of the government. At the micro level, a case study method was applied to substantiate the findings at the macro level. The Technology Development Program was chosen for the case study.

Based on the experience of the US and Japan, the study found that for varied reasons, state-market cooperation existed in these countries. This cooperation was mostly aimed at enhancing the market system. The only difference between these countries is in the nature of their state-market cooperation. The US approach is ‘reactive’ while Japan’s is ‘pro-active’.
As for the public-private sector collaboration strategy in Malaysia, the thesis found that, to some extent, the strategy seems to have improved the public-private sector working relationships in certain areas of the economy. In other areas however, the support for the collaboration strategy seemed to be confined mostly to the idea that collaboration is 'good' and necessary for Malaysia's development. In practice, however, the perceptions of the public and private sector respondents about the collaboration seemed to suggest that the strategy did not have an important bearing on their decision-making process. Therefore, the thesis concludes that the current form of Malaysia's public-private sector collaboration strategy might not be viable in promoting sustainable development.

The major implication of the thesis is that the state and market have a role in the development process and their collaboration has potential to promote socio-economic development. The thesis found that state-market collaboration can be beneficial if it is used to create smoothly working markets and price system. The state can assist the market by establishing appropriate macroeconomic institutions and policies that set the framework for promoting competitive markets. This approach is more likely to promote sustainable development than the sectoral approach, which promotes specific sectors of the economy. Therefore, the thesis suggests that defining the end-points of the state-market relations' continuum should not be the critical objective of the debates regarding the role of state and market. Rather researchers should also consider different combinations of the role of state and market in the development process, and suggest areas where markets should be given the liberty to perform and areas where states can assist markets to ensure efficiency.
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Chapter 1
Introduction

Introduction


Since 1983, the Malaysian Government has adopted the public-private sector collaboration strategy in its development process. Since then the Malaysian Government has partly attributed Malaysia's socio-economic achievements to this policy. To what extent is this assertion true? If it is, then is there a role for state-market collaboration in the development process?

Terminology

The appropriate relationship between the state and market or public and private sectors has been a theme of prickly debate (McCraw, 1984:31). Definitional problems abound. Does ‘public’ mean simply governmental and ‘private’ non-governmental? Wuyt *et al* (1992:3-4) argued that in some context, ‘public’ tends to be associated with the state. The ‘public sector’ is used to mean activities undertaken by the state or by state-owned agencies. Discussion of ‘public policy’ frequently refers to the decisions of governments and the actions of government employees, the combination of which are called the ‘state’. In addition, according to Wuyt *et al.* (1992:4), there was a time when the phrase ‘public services’ was generally taken to mean services provided by the state.
Meanwhile, Ham and Hill (1993:23) defined state in terms of the institutions that make it up and the functions these institutions perform. State institution, according to them, comprise legislative bodies, including parliamentary assemblies and subordinate law-making institutions; executive bodies, including governmental bureaux and departments of state; and judicial bodies with responsibility for enforcing and, through their decisions, developing the law.

Skocpol (1985:27) argued that, on the one hand, the state may be viewed as organisations through which official collectivities may pursue distinctive goals, realising them more or less effectively given the available state resources in relation to the social setting. On the other hand, states may be viewed more macroscopically as configurations of organisation and action that influence the meanings and methods of politics for all groups and classes in society.

As for the market, Averch (1990:26-7) described markets as a social arrangement that permits voluntary exchange of privately provided goods and services with known or discoverable attributes. Markets play multiple roles in economic decision-making. They provide the signals and information that consumers and producers need. They furnish the incentives and 'coercion' that make independent consumer and producer decisions consistent with each other. In every market, economic theory assumes that traders pursue their own self-interest. If maximising utility motivates consumers, maximising profits motivates producers, and thus relative prices and their fluctuations determine quantities bought and sold. On the basis of relative prices, consumers and producers make offers and counter offers until markets clear.

Mitchell and Simmons (1994:4) describe the market as an abstract concept referring to the arrangements people have for exchanging goods and services with one another in all aspects of economic life. Markets can be as formal and well organised as the stock market and as informal and unorganised as Saturday garage sales or, as suggested by Heyne (1994:177), a singles bar.

In the dictionary the term collaboration refers to work jointly especially at literary or artistic production. In war, this term refers to cooperation with the enemy. In this thesis,
the term refers to a situation where the public sector facilitates the private sector's initiatives, mostly through policy interventions. The purpose is to provide enabling environments for private entrepreneurs to conduct their business and investment. Examples of policy interventions are targeting and subsidizing credit to selected industries; keeping deposit rates low and maintaining ceilings on borrowing rates to increase profits and retained earnings; protecting domestic import substitutes; establishing and financially supporting government banks; making public investments in applied research; developing export marketing institutions; and sharing information between public and private sectors. The relationships between the public and private sectors are biased towards close cooperation rather than actual partnership or joint ventures.

The different between public-private sector collaboration and the mixed economy approach to the development process is that the later refers to a system, which combines competitive private enterprise with some degree of central control. While the allocation of resources between alternative uses is largely determined by individual actions through the price mechanisms, the authorities assume some role in determining the level of aggregate output by means of the monetary and fiscal policies. In some cases the government may take control of sectors of the economy by nationalising certain industries. Under this system, the relationships between the public and private sectors are generally adversarial (Steven 1988).

Given the discussion above and for the purpose of the thesis, the State also refers to the public sector while the Market also refers to the private sector. Also, the thesis treats cooperation and collaboration to be the same. As such, these terms will be used interchangeably throughout the thesis.

**Background to this study: the role of state and market in the development process**

The weight of views of the appropriate roles of the state and market in the development process has fluctuated. As world economic conditions have changed, the views of analysts have swayed from one end of the pendulum to the other. When most of the

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1 This is on top of its traditional role which include maintaining public safety, national security, administration of justice, maintaining public works and institutions and so on.
developing countries were hard hit by the world economic crisis of the 1970s and 1980s, analysts began to question the effectiveness of a large state role in the economy. Also, many governments in the developing countries seem to have taken to heart analyses suggesting that the most dynamic developing nations of the 1960s and 1970s (for example, the East Asian Little Dragons) were those that had opened their markets and benefited from exporting labour-intensive products. With the escalation of oil prices many developing countries fell deep into debt and this subjected them to increasing pressures from such international organisations as the World Bank and the International Monetary Fund (IMF) to adopt austerity and open-market programs (Clark and Roy, 1997:3).

Lipton and Simkins (1993:18-19) cited the disappointment with the results of highly interventionist development strategies in many Latin American and African countries, where growth rates and per capita incomes declined, while fiscal and balance of payments deficits grew alarmingly, as one of the factors that contributed to the change in the views on the role of the state in the development process. Public corporations, once enthusiastically launched to lead development in many economic sectors, came to be viewed as loss-making burdens on taxpayers. It was acknowledged that ambitious integrated development programs often failed because of limited state capacity to administer them successfully and that state power was often used to enrich ruling elites at the expense of the citizenry. Papanek's (1992) study of four South Asian economies, India, Pakistan, Bangladesh, and Sri Lanka, discovered that the periods of greater state intervention were associated with both slower economic growth and lower wages for the working poor.

Despite the above, the rapid economic growth of the East Asian economies created controversy. Wade (1990:345) argued that evidence from these economies has shown that government can, in some circumstances, guide the market to produce better industrial performance than a free market, even in the absence of neoclassical-type market failure. Bruton's (1992:109) study on cases of successful economic achievement revealed the significant and far-reaching roles of the government in economic matters. According to him, in South Korea, Malaysia, Botswana, Thailand, Taiwan, and Indonesia, the government's role has been and continues to be of great importance and, in general, has been effective.
Gore (1996:96), on the other hand, argued that since the East Asian countries' policies relied on private enterprise as the principal engine of growth they could be represented as 'market-based'. Equally, it is possible to call them 'state-led' because economic activity has been directed towards national goals. But each of these polarised descriptions is in some sense a misrepresentation of a system which relied on both markets and states, and which has been described, with reference to Japan, as 'a plan-oriented market economy system' (Johnson, 1982:10). Scholars such as Syed Nawab Haidar Naqvi (1993), Bowles and Gintis (1996) and Aoki et al (1997b) have presented arguments that state and market cooperation has the potential to promote growth and development.

Meanwhile, Meyer (1982), Brittan (1983), Wolf (1988) and Streeten (1992) raised an issue regarding the nature of the debates over the role of state and market in the development process. They argued that much of it has been conducted in binary terms: central planning versus free market. They are of the opinion that there is the possibility to add dimensions to the linear spectrum whereby a combination of certain features of state intervention with others of a free market can avoid the failures of the two poles and that may be preferable than either extreme.

Meyer (1982:2) argued that the emphasis on the choice between states or markets might be misplaced. In most situations, state and market seem to be complementary. For example, private managerial skills can often complement the public sector. Therefore, according to Wolf (1988), rather than being a pure choice between the state or the market, the choice should be between different combinations of the two and different degrees of one or another mode of allocating resources. Wolf (1988) suggested this because according to him the choice is actually among imperfect markets, imperfect states, and various combinations of the two. Klitgaard (1991) also argued that in the debate between the state and market, it was not enough to declare markets free or to rely exclusively on state efforts. A new strategy was needed, one that recognises the strengths and weaknesses of each. The challenge was to make both the market and state work better. However, Meyer (1982:2) pointed out that it would be a dangerous illusion to expect that 'corporate billions will accomplish what federal billions could not'.

In their article 'Synergy and rivalry', Ruechemeyer and Puttermann (1992:258-9) indicated that the existence of a well-functioning state, capable of efficient economic
policies, cannot be taken for granted, and neither can the existence of functioning competitive markets. In fact, according to Rueschemeyer and Putterman (1992), markets, particularly competitive markets, are not the natural outgrowths of civil societies undisturbed by state intervention. The World Bank (1991:1-2) argued that markets and governments can pull together in complementary ways. If markets can work well, and are allowed to, then there can be a substantial economic gain. If markets fail and governments intervene cautiously and judiciously in response, then there is further gain. But if the two are brought together, the evidence suggests that the whole will be greater than the sum of the parts. When markets and government have worked in unison, the results have been spectacular, but when they worked in opposition, the results have been disastrous.

In summary, these discussions seem to suggest that while market has an important role in the development process, it is not perfect and market failures do occur. As such, there is a need for the state to assume a role in addressing market failures. However, state also suffers from failures. They are not always benevolent, effective and efficient. Since each has its own strengths and weaknesses, the question then is 'is there a role for state and market collaboration in the development process so as to enable them to complement each other's strengths and weaknesses for optimum benefits?

The Roles of State and Market in the Technology Development Process

Technology development is one area where the state-market collaboration approach has been widely practiced. This is because technology is crucial to development but its markets are notoriously prone to failure to (Lall 1996b:59). As such, there is a growing realisation that market forces alone may not be sufficient to generate technological development (Hamzah, 1993). There may to be a role for the state to help shape and promote technology development (Dahlman and Ross-Larson, 1987). It is argued that the most important role of the state is to establish an environment that stimulates markets to engage in technological efforts and to develop capabilities that improve productivity and economic performance (Dahlman and Ross-Larson, 1987). William (1991:183) argued that while few would quarrel with the suggestion that civil applied research and development should in principle be funded by industry, there can be cases where defects in the market mechanism mean that selective government support for industrial technology can produce national economic benefit.
Anuwar (1992), however, cautions against extensive state intervention in technology development. He pointed out that such undertakings tend to run the risk of public research and development (R&D) institutes and the universities being insulated from the needs of industry and thus may produce results which have limited commercial potential. The United Nations (1994) also indicated that extensive government interventions might kill the innovativeness of science and technology (S&T) communities, either public or private. Nevertheless, the state could promote a country’s technological self-reliance and competence by providing technological infrastructure such as R&D culture, human resource training for scientists and technical assistance and financial arrangements.

These discussions seem to suggest that while the market should take a leading role, there is a role for the government in achieving technology development objectives. The challenge is in seeking a judicious mix of the state and market in fostering and promoting technological development.

**Objectives of this study**

Apart from Polanyi, who propounded the idea of a mixed economy in 1944, the call for state and market co-operation in the development process is a relatively new phenomenon. It arose when scholars were trying to explain factors that contributed to the rapid economic growth of the East Asian economies. Aoki (1997b:xv) argued that the publication of *The East Asian Miracle: economic growth and public policy* by the World Bank in 1993 was a watershed in this debate because, by publishing this book, the World Bank was admitting that:

> Each of the High-Performing Asian Economies (HPAEs)\(^2\) maintained macroeconomic stability and accomplished three functions of growth: accumulation, efficient allocation, and rapid technological catch-up. They did this with *combinations of policies*, ranging from market-oriented to state-led, that varied both across economies and over time (World Bank 1993:10, emphasis added).

This ‘state-market collaboration’ view, however, has been more popular among political scientists and in public fora. It has not yet become the mainstream view in economics (Aoki *et al*. 1997a:xv).

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\(^2\) The HPAEs refer to Japan, Republic of Korea, Taiwan, Singapore, Hong Kong, Malaysia, Indonesia and Thailand.
The objective of this thesis is to see whether a ‘public-private sector collaboration’ strategy can be an impelling force for growth and development. The primary argument of the thesis is that there is a role for public-private sector collaboration in the development process. To examine the argument, the analysis is divided into two parts. In the first part, the thesis examines the theory and practice regarding the role of the state and market to see whether state-market collaboration has a role in the development process (Chapter 2). The USA and Japan are chosen as case studies because rhetorically, these countries are taken to represent polar cases in the debate on the subject (Johnson 1982; Lodge 1990; Gereffi 1990; Bradford Jr. 1990).

In the second part, Malaysia’s public-private sector collaboration strategy is evaluated to find out if it has, in any way, contributed to Malaysia’s socio-economic development. Malaysia is chosen as a case study because, since gaining its Independence in 1957, Malaysia has been experimenting with development strategies that range from laissez-faire to state-led development and now to public-private sector collaboration. The launching of the Malaysia Incorporated Concept in 1983 was supposed to manifested the Malaysian government commitment to a public-private sector collaboration strategy to achieve its national goals. The Concept refers to a system of cooperation between the government and the private sector to achieve progress and shared benefits in the development process.

Another reason for choosing Malaysia is because, according to Henderson and Applebaum (1992:9), if Malaysia is successful in its late industrialiser strategy, it will be a more apt model for developing countries than the East Asian Newly Industrialising Countries (NICs) could ever be. This is because, unlike the NICs, Malaysia is relatively sectorally balanced with a vibrant agricultural sector, more typical of developing nations. Also, unlike the NICs, Malaysia is racially diverse and it has a democratic state, both in form and, generally speaking, in content. Perkins (1994:661) also argued that:

When one turns to Indonesia and Malaysia and to a lesser degree Thailand, one get closer to the kinds of underlying political-social structures found in so many other parts of the world. ... If we really understood why these societies could do it when so many others failed, we would know where to begin looking to achieve comparable success elsewhere.
The evaluation of the Malaysian case will be carried out in two stages. In the first stage, the thesis will examine the perceptions of the public servants and the private sector personnel in regards to the collaboration strategy. The purpose is to find out whether they supported the strategy or otherwise. Next, the thesis wants to determine if the support has been translated into practice. For this purpose, the Technology Park Malaysia (TPM) was chosen as a case study because it was set up under the auspices of the public-private sector collaboration strategy. The reason for choosing technology development as a case study is because technology is crucial to Malaysia's development. Its importance was reflected in the message from Datuk Amar Stephen K.T. Yong, published in the Action Plan for Industrial Technology Development (APITAD), and launched in 1990 by the Ministry of Science, Technology and the Environment. In that message, Datuk Amar Stephen stated that (MOSTE 1990:i):

> The role of technology as a crucial element for economic development and prowess is well established. Technology is indeed the foundation for development of new product and process. It leads to more effective utilisation of capital, human and natural resources. It consequently leads to higher productivity and results in expanded prosperity for the people in the country

Technology development has been considered an area where public-private sector collaboration approach can be advantageous (William, 1991). Experiences of developed nations such as the United States of America and Japan have shown that public-private sector collaboration in the technology development process has been notable (Anderson 1984; Arnold 1988; Kodama 1989; Wigand 1989; Kettl, 1993; Spulber 1995). In the case of Malaysia, public-private sector collaboration is one of the approaches adopted in the promotion of technology development (MOSTE, 1990).

**Research Questions**

In seeking the answer to this question, the following research questions were formulated as a guide. The answer to each question is explored in each chapter of the thesis. For Part 1, the research questions were:

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3 The Malaysian Government considered the TPM to be an important initiative for promoting new technology ventures and nurturing young technology-based companies. A major objective of the TPM is to promote the commercialisation of research and innovation generated by public and private research organisations, focussing on high-tech industries and collaboration among industries, government agencies, research and academic institutions.

4 The former Minister of Science, Technology and the Environment, Malaysia.
1. What are the theoretical arguments regarding the roles of the state and the market in the development process? Is there a role for state-market collaboration strategy to development process?

2. What are the roles of state and market in the development process of the United States of America and Japan? Is there any form of state-market collaboration in these countries' development process?

The major purpose of these questions is to find out if what is reflected in a theory is also true in reality and if there is a state-market collaboration in the development process in these two countries.

For Part 2, the research questions were:

3. What are Malaysia's development strategies? Why does the Malaysian Government adopt the public-private sector collaboration strategy in its development process? What are the initial response from the public servants and the private sector personnel in regard to the strategy? What are the initial assessments on the implementation of the strategy?

4. What are the perceptions of public servants and private sector personnel in Malaysia regarding public-private sector collaboration in the development process?

5. What are the perceptions of the tenants of TPM in regard to public-private sector collaboration and the facilities in TPM?

6. To what extent has the TPM contributed to Malaysia’s technology development in particular and economic development in general?

The purpose of these questions is to find out if the public-private sector collaboration has taken place in and has any contribution to Malaysia’s socio-economic development.

The conclusions address the following question:

7. What are the major findings regarding the importance of public-private sector collaboration in Malaysia's development process?

Scope of this study

According to the report in the Seventh Malaysia Plan (7MP) 1996-2000 (Government of Malaysia 1996b:5-6), one of the factors that contributed to Malaysia’s socio-economic achievements was the increasing role of the private sector both in the generation of economic growth and in its contribution to the objective of growth with equity. The Plan
indicated that the private sector contributions were feasible because of the Malaysia Incorporated Concept introduced in 1983 by the Malaysian government. It was stated that the government’s initiatives, aimed at greater deregulation, simplifying administrative procedures and providing better incentives have led to the strengthening of the private sector’s contribution to economic growth. The extent to which this assertion is sound will be examined in this thesis. At the macro level, the examination is based on how far the Malaysian public servants and private sector personnel supported the public-private sector collaboration strategy. The assumption is that if public-private sector collaboration strategy is fully supported then Malaysia’s socio-economic achievement can be partly attributed to this strategy. However, if there is lack of support for this strategy then it can be assumed that the strategy has had a limited role in Malaysia’s socio-economic achievements and has only limited potential to promote development.

At the micro level, this study focuses on the collaboration between the tenants of TPM and the Government. The thesis argued that if the tenants have favourable perception towards TPM and its facilities, then there is willingness to cooperate. As such, it can be assumed that public-private sector collaboration has taken place. The next question then is, has the collaboration contributed to the advancement of Malaysia’s technology development in particular and economy in general? For this purpose, the thesis will rely on the findings of studies conducted by the Malaysian Government and the World Bank and other secondary material in regard to the level of technology development in Malaysia. If these sources show that Malaysia’s technology has improved, then, the collaboration has in part contributed to this advancement. Hence, it can be deduce that the public-private sector collaboration has a role in the development process.

For the purpose of the study, the thesis covers the period 1957 to 1996. This period is chosen because Malaysia gained its independence in 1957.

**Approach Taken in this Study**

The study of public-private sector collaboration in the development process is complex. As a field of study, it is difficult to confine empirically and theoretically, as it draws from various disciplines such as economics, development studies, political economy, political science, business-government relations, sociology, public administration, international
affairs and other fields of social development. Moreover, it is not only impractical to attribute development to specific policy or strategy, but also difficult to establish the statistical links between them. What is even more difficult is to establish the causality between development and certain policy or strategy. Even the World Bank’s (1993:6) study team admitted that they faced ‘a central methodological problem’ as to how to assess the impact of government intervention on economic growth. This is because they already knew that government interventions in the East Asian economies did not significantly inhibit growth, but they found that it difficult to establish statistical links between growth and specific intervention and even more difficult to establish causality. Therefore, the World Bank’s study team have to be contented with what Keynes called an ‘essay in persuasion’ (as quoted in World Bank 1993:6) based on analytical and empirical judgements.

The same is also true with this study. The Malaysian Government has adopted the public-private sector collaboration strategy in its development process. At a glance, the strategy seems to contribute to Malaysia’s socio-economic development. Whether such is true is the subject of this thesis. However, being behavioural in nature, the manifestations of the strategy are less tangible and visible and, therefore, difficult to quantify or measure. As such, the thesis took the behavioural route to find out how far the public servants and the private sector personnel supported the strategy. The perception concept is use as a tool for this purpose. This is because, even though there is a diverse range of possible types of analysis and theoretical frameworks that can be applied, self-interest can be one way of evaluating the motivation behind the willingness of two entities to collaborate. Therefore, how the public servants and private sector personnel perceived the collaboration strategy will determine whether or not they supported the strategy. If they support it, then it can be assumed that the collaboration strategy took place in Malaysia’s development process. Although this assumption is simple, the approach is considered useful because, as pointed out by Telser (1987:10), the actions people take depend on what they believe is true, that is, their perception. Even when perceptions may be only partly true or even wholly false, perceptions of reality, not reality itself, affect their behaviour. Telser (1987:10) further argued that a theory of behaviour that assumes there is a difference between what is true and what people believe to be true can make better predictions of what they will do than a theory assuming omniscience.
While the scope of this study is broad, the breadth is necessary to assess how far Malaysian public servants and private sector personnel supported the public-private sector collaboration strategy to promote Malaysia's socio-economic development. Furthermore, as the study is the first to attempt such an answer, there is no tested methodology that might be adopted from other studies. Thus, it seems justified to begin with a broad profile of evaluation in order to obtain a general overview of the issues involved.

**Research design**

Exploration of the Malaysian case centres on three of the main research questions identified earlier. These are:

8. What are the perceptions of public servants and private sector personnel in Malaysia regarding public-private sector collaboration in the development process?

9. What are the perceptions of the tenants of TPM in regard to public-private sector collaboration and the facilities in TPM?

10. To what extent has the TPM contributed to Malaysia's technology development in particular and economic development in general?

The nature of these questions called for an examination of the government policies and the institutional framework adopted to promote public-private sector collaboration, the perception of the public servants and private sector personnel regarding the state-market collaboration approach, and the impact of the state-market collaboration on Malaysia's development in general and technology development in particular. Therefore, the research methodology incorporated qualitative and quantitative methods. Both methods were utilised because each has its own merits as indicated by Patton's (1987) extensive writings on the relative merits of quantitative versus qualitative data in the context of policy research, as summarised in table 1.1.

The analysis in the thesis was conducted at two levels. A schematic illustration of the research design is as shown in figure 1.1. At the macro level, a survey was conducted to uncover the perceptions of Malaysian public servants and private sector personnel regarding the public-private sector collaboration strategy. Their perceptions will determine whether they supported the collaboration strategy or not.
Table 1.1: A Comparison of the Relative Merits of Quantitative and Qualitative Data and Analysis

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<thead>
<tr>
<th>Qualitative methods</th>
<th>Quantitative methods</th>
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<tr>
<td>Permit study of selected issues in depth and detail</td>
<td>Use standardised measures and predetermined responses</td>
</tr>
<tr>
<td>Provide details about limited numbers of people or cases</td>
<td>Facilitate comparison and generalisations to larger populations</td>
</tr>
<tr>
<td>Provide detailed descriptions about situations, events, interactions, and observed behaviours</td>
<td>Are of limited use in providing contextual information</td>
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Figure 1.1: The Research Design

The Macro Perspective
*Main objective:* to gauge the perceptions of the public servant and private sector personnel regarding the public-private sector collaboration in the development process.

The Case Study
*Main Objective:* to find out if public-private sector collaboration is being translated into practice in the Technology Park, Malaysia and hence technology development in particular and economy in general.

Research Activities
- Survey of the Public and Private Sectors
  - Interviews
- Review of documents and previous studies
- Survey of Tenants of the Technology Park, Malaysia

At the micro level, a case study method is applied to substantiate the findings at the macro level. The aim is to see if the support for the collaboration strategy is being translated into practice. For this purpose, the thesis examines the implementation of the public-private sector collaboration strategy in TPM. The examination of the case study was divided into two parts. The macro perspective examines the various policies and strategies implemented to promote public-private sector collaboration in the technology development program in general and in TPM in particular. The analysis was carried out...
through literature reviews, earlier studies and official documents. At the micro level, the analysis of the TPM is based on a survey conducted on the tenants of the TPM. Their perception will determine if public-private sector collaboration is being practice in the Park.

**Data analysis and presentation**

Data analysis and presentation is discussed in Chapters 6 and 9. In Chapter 6, data on the perceptions of the public and private sector respondents is presented in the comparative perspective format, based on the percentage of the respondents supporting or rejecting the statements regarding collaboration. This approach is chosen because the intent is to make direct comparisons between the public and private sector respondents’ responses to see if there are important common dimensions or differences in their perceptions regarding the same issues. Meanwhile, data on the perceptions of the tenants of TPM regarding the capability of TPM to promote public-private sector collaboration in the technology development process is presented in the form of what percentage of the tenants agreed or disagreed with the statement related to TPM.

**Benefits and Limitations of this Study**

In regard to Malaysia, since this is the first evaluation of the public-private sector collaboration in Malaysia, the major benefits will be for the Malaysian public and private sectors. The study may provide insights into the perceptions of Malaysia’s public servants and private sector personnel regarding the significance and usefulness of the public-private sector collaboration to Malaysia’s development process and its impact on Malaysia’s socio-economic development. It may help the Malaysian Government to review its development strategy and to decide whether it is the most appropriate approach in order to achieve its developmental goals. It may also help implementors of this strategy in general and the Malaysia Incorporated Concept in particular to improve the implementation of the strategy and the Concept to ensure it is beneficial - especially in ensuring the achievement of Vision 2020 aspirations. In addition, this study may contribute towards an understanding of how the public and private sectors can complement each other in order to achieve economic growth. It may illustrate what roles the public and the private sectors should assume in order to established a workable relationship. Finally, other countries may be interested in the results of this study and may use it as a guide in deciding what development strategy they want to pursue.
The public-private sector collaboration strategy is by no means the only strategy applied in promoting growth and development in Malaysia. There are various other policies and strategies being implemented concurrently in order to achieve Malaysia’s national goals. As usual, these policies and strategies may complement or contradict each other. Extensive study is required to determine the net effect of each of these policies and strategies on growth and development. Such an undertaking is beyond the scope of this thesis.

Although the public-private sector collaboration strategy has been adopted since 1983, limited evaluation has been carried out to determine its effectiveness. This study, therefore, has to rely on data collected through two surveys conducted for this purpose. In addition, because of the limited studies on this subject, it is not possible to make a direct comparison with the findings of other surveys. However, there are studies that have been conducted by the Malaysian Government, the World Bank and the World Bank/UNDP that provide some basis for comparison and this is done.

In addition, since the study involves uncovering the perceptions of public servants and private sector personnel regarding the government strategy and their perceptions of each other, it means that value judgements are implicit in the responses to the survey. Therefore cautious interpretation has to be made of the responses because there could be a tendency for the respondents to be biased in their opinions or to exaggerate their case. There may also be tendencies towards bias in the portrayal of certain aspects, especially in terms of weaknesses in the implementation of the strategy.

Literature reviews indicated that thus far, Malaysia is one of the few countries that have formalised the public-private sector collaboration approach to development as a policy. However, the World Bank’s (1993:352) study indicates that ‘the success of the East Asian Economies stem partly from the policies they have adopted and partly from the institutional mechanism they created to implement them...Each of the HPAE governments created institutions to improve communication with the private sector. Formal deliberation councils established in five of the economies’

5 The countries are Hong Kong, Japan, Korea, Malaysia and Singapore (World Bank 1993).
development process are still at the infant stage and as such limited materials are available for in-depth examination and comparison. Therefore, the findings of this study may, in its small way, add to the body of knowledge on this subject.

**Organisation of this Study**

The thesis is divided into nine chapters. Chapter 2 presents the debates over the appropriate role of the state and market in the development process. The discussions in this chapter start with arguments for market to lead the development process followed with arguments for the state and state-market collaboration approach. The purpose of this review is to define the consensus and differences among economists, political scientists and other social scientists to see if there is a case for public-private sector collaboration in the development process. Chapter 2 also presents discussions on the role of state and market in technology development. Basically, these chapter present issues related to the management of technology development and technology parks. The purpose is to set the theoretical framework for the examination of public-private sector collaboration in Malaysia in general and in the technology development program in particular.

Chapter 3 evaluates the role of the state and market and the relationship between them for the United State of America (USA) and Japan. These countries were chosen because a majority of analysts (Johnson 1982; Lodge 1990; Gereffi 1990; Bradford Jr. 1990, to name a few) have classify the USA development strategy as market-led and Japan’s as state-led. The purpose of this evaluation is to find out how far the USA conforms to the market-led strategy and Japan to a state-led strategy and what is the nature of the relationship between the state and the market in these economies. This chapter also attempts to see if there is any gap between theory and reality in terms of the role of state and market in the development process.

Chapter 4 provides the background to the introduction of the public-private sector collaboration strategy in Malaysia. The Chapter discusses Malaysia’s development strategy from 1957 to 1996 and the relationship between the public and private sectors during this period. The Chapter describes the essential features of the Malaysia Incorporated Concept and presents the findings of earlier studies on the implementation
of the Concept. Lastly, this chapter provides opinions of scholars and businesspersons in Malaysia on the public-private sector collaboration strategy.

Chapter 5 presents the research methodology used to gather the information needed for the study. The results and findings of the survey conducted over the period July to August 1997 are presented in Chapter 6. The objectives of this chapter are to examine to what extent the Malaysian public servants and private sector personnel supported the public-private sector collaboration strategy; to see what changes there have been in their perceptions towards each other; and to see how far they perceive the collaboration strategy has contributed to the formulation of public policies in Malaysia, and to Malaysia’s socioeconomic development.

Chapter 7 discusses the public-private sector collaborative efforts in the technology development process and their impact on Malaysia’s technology development. This evaluation is based primarily on the findings of three major studies on technology development in Malaysia conducted by the World Bank, World Bank/UNDP and the Malaysian Science and Technology Information Centre (MASTIC). The purpose is to see if the public-private sector collaboration approach has been crucial in promoting technology development in Malaysia.

An evaluation of the role of the Technology Park Malaysia (TPM) in promoting technology development, especially indigenous technology, is presented in Chapter 8. The TPM is one form of public-private sector collaboration approach to development, in general and to technology development in particular. As such, it is important to see if this form of collaboration is beneficial to the public and private sectors and to see if it can contribute to growth. The evaluation is based on the findings of the survey conducted among the tenants of the TPM.

Finally, in Chapter 9, the findings of the study are summarised and conclusions are drawn, particularly on the role of state and market in the development process and the role of public-private sector collaboration on Malaysia’s socio-economic development. Implications for development policy are discussed and, further areas of research are suggested.
Chapter 2

The Role of State and Market in the Development Process: The debates

Introduction

The main objective of this chapter is to find out what is the current position in regards to the role of state and market in the development process and to see if there is a possibility for a state-market collaboration that combine certain features of state intervention with activities of a free market to promote socio-economic development. For this purpose, the chapter compares the views of scholars and researchers in regards to the market- or state-led development process and deduces if there is a case for the state-market collaboration approach to the development process.

The state and the market are two of the most important institutions in modern society. Their relationship has been and is expected to continue to be vital in determining a nation's socio-economic progress. They have been coexisting and interacting with each other for a long time. As such, differences in the level and degree of state intervention in the economy are expected to affect the state-market relations and the development process.

The idea that the state and the market are two diametrically opposed systems of social organisation began in the 1980s in the Western democracies, particularly in the United Kingdom and the United States, with the rise of conservative ideologies. In both countries, the post-war Keynesian consensus began to collapse. The language of Thatcherism in Britain and, later, Reaganism in the United States suggested that there was a stark choice to be made in political life between reliance on the state and resort to the markets. Their choice was in favour of the latter (Moran and Wright 1991; Colclough 1991; Rosen 1992; Bonvin 1992). By the mid 1980s, the intellectual climate had changed, with a major re-evaluation of the role of the state. Theory and policy affecting developing countries were influenced. There was a reaction against the interventionist or developmental state, with many viewing the state as a predator and its citizens as prey (Killick 1989; Moran and Wright 1991; Lipton and Simkins 1993).
The role of the state in East Asian economies has been one of the most contentious recent issues in economics (Aoki et al. 1997a:xv). Some have argued that East Asian economic development can primarily be explained by the macroeconomic stability that provided proper incentives for investment and savings as well as high human capital accumulation, while the intervention of government in specific industries was at best irrelevant, or at worst, had a harmful or distortive effect on the allocation of resources (World Bank 1991; 1993, 1997; Page 1994). Others have argued that due to pervasive market failures in these countries, state intervention was necessary to remedy it (Amsden 1989, 1994; Wade 1990; Kwon 1994; Perkins 1994; Aoki et al. 1997a). Adherents of this latter view argued that strong states in the East Asian economies succeeded in fulfilling these objectives by deliberately 'getting the prices wrong' (Amsden 1989) in order to boost industries that would not otherwise have thrived. This view has been relatively popular among political scientists and in public forums but has never become the mainstream view in economics (Aoki et al. 1997a:xv).

In the case of technology development, global economic phenomena especially in the 1970s and 1980s brought greater competition between countries. States responded to this by requiring R&D and innovation to more clearly serve the interest of economic and industrial development. In the US Secretary Ron Brown informed the Committee on Science, House of Representatives, that while innovation must continue to come from the private sector, government must work to maximise opportunities for private businesses to innovate. He further informed the Committee that the Department of Commerce listened to industry to establish departmental priorities, and served as the industry’s advocate in shaping regulatory, export control and environmental policies. The Department is ‘partnering with industry to work on the nation’s 21st Century technological infrastructure. This partnership continues a long history of cooperation between the public and the private sectors’ (Brown 1995:33).

**State or Market in the Development Process: the debates**

Alan Greenspan, the United States Federal Reserve Board Chairman, has said that (Ryan 1997:31):
Government-directed production, financed with directed loans, cannot readily adjust to the continuously changing patterns of market demand for domestically consumed goods or exports. Gluts and shortages are inevitable.

Such systems can produce vigorous growth for a time when the gap between indigenous applied technologies and world standards is large, such as in the Soviet Union of the 1960s and 1970s and South East Asia in the 1980s and 1990s. But as the gap narrows, the ability of these systems to handle their increasingly sophisticated economies declines markedly.

Meanwhile, Malaysia's Prime Minister, Dr. Mahathir Mohamad argued that (Ryan 1997:31):

The fact is that neither government nor the market can work well on their own and independent of each other. Power corrupts. As much as government can become corrupt when invested with absolute power, markets can also become corrupt when equally absolutely powerful. We are seeing the effect of that absolute power today, the impoverishment and misery of millions of people and their eventual slavery.

Greenspan and Mahathir's arguments reflect the current round of debate regarding the roles of the state and market in the economy. They emanated from the financial crisis in the Southeast Asian economies and South Korea that started in mid 1997. While Greenspan's argument seems to suggest that the financial crisis was due to the governments not performing their job of financial regulation properly, Mahathir attributed the crisis to the absolute power of the market.

Arguments for the Market

The period of classical political economy has been seen as being dominated by the principles and policies of *laissez-faire*, where the role of the state is limited to 'the protection of person and property against force and fraud, both internally and externally' (J.S. Mill 1965:936). In the *Wealth of Nations*, Adam Smith (1776:51) argued that the optimal allocation of resources between alternative uses would be produced, not by the interventions (whether of preference or restraint) of a wise state-person, but through each individual, knowing his own interests best, being 'left perfectly free to pursue his own interest his own way, and to bring his industry and capital into competition with those of any other man, or order of men'. Smith (1776) indicated that the role of the

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1 Classical political economy refers to the period of economic thought from the publication of Adam Smith's *Wealth of Nations* in 1776 to the death of J.S. Mill in 1873 (Evans, 1991:3).
state is confined to defence, the administration of justice, and ‘the duty of erecting and maintaining certain public works’. Beyond this, Smith (1776) considered state intervention to be at best ineffective, and at worst counterproductive or positively harmful to the economy.

J.S. Mill (1965) also argued that the presumption should always be against interference. Laissez-faire should be the general practice. Any departure from it, unless required by some great good\(^2\) was a certain evil. Mill (1965) listed the provision of basic education and funds for the sciences and the universities; relief of the indigent; the protection of children, juveniles, and the lower animals; the regulation of joint-stock companies and of natural monopolies; funds for low-cost housing, and aid to workers displaced by machinery; state schemes of emigration and colonial settlement; and restrictions on inheritance and a proportional income tax as areas where government intervention is needed. N.W. Senior (as cited in Evans 1991:7), in supporting J.S. Mill, indicated that ‘it is the duty of a government to do whatever is conducive to the welfare of the governed. The only limit to this duty was its power’. Meanwhile, Milton Friedman's *Free to Choose* (1980) pointed out that any expansion by the government beyond its minimal (‘public good’\(^3\)) functions impairs efficient resource use, impedes economic progress, and restricts social mobility and ultimately political freedom as well.

Beyond Smith, Mills, Senior, and Friedman, there are those who opposed all government intervention on the grounds that ‘market failure’ does not mean that government will not fail in similar circumstances. For example, Bauer (1971) indicated that comprehensive central planning is certainly not necessary for economic advance; it is much more likely to retard it. Bauer (1984) also pointed out that economic development has occurred, and would occur owing to the individual voluntary responses of millions of people to emerging and expanding opportunities created largely by external contacts and brought to their notice in a variety of ways, primarily through the operation of the market.

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\(^2\) Mill listed a range of cases where ‘some great good’ may well be obtained by state intervention; where the consumer is an incompetent judge, or where persons (for instance, children) cannot be presumed to be the best judge of their own interests; where a measure would not profit a private person but is one in which ‘the general interests of mankind’ are involved; and even where private agency might be viable but cannot be induced to perform (as cited in Evans, 1991:6).

\(^3\) For example defence and public order, but *not* the postal service (Friedman, 1980).
Even among development economists, there were those who rejected all forms of government intervention. For instance, Lal (1983:103) concluded that 'the most serious current distortions in many developing countries are not those flowing from the inevitable imperfections of a market economy but the policy-induced, and thus far from inevitable, distortions created by irrational dirigisme. Therefore, Lal (1983) suggested that the developing countries would be better off in the company of free markets than in the protective custody of the government because even the theoretically justifiable 'forms' of government intervention were harmful, as they tend to work perversely in practice.

Lal (1988) also argued that the state uses its legal monopoly over the use of violence to maximise the returns to government. Clark and Roy (1997:3) pointed out that the collapse of state socialism in most of the welfare states in the 1980s was due in large part to its profound economic inefficiencies and deteriorating economic performance, where large government bureaucracies increasingly came to be viewed as drags on economic vitality. This neoclassical view tends to see the state as predatory in nature. That is, the individuals and groups making up the state are pursuing their own interests even if their interests clash with those of the majority of the society. The mechanisms of the state are used to extract surplus in order to support the interests of the ruling elite (Grabowski 1994:414).

The central argument of the property rights literature (Coase 1937; 1960; Alchian and Demsetz 1972; Williamson 1975; Cornes and Sandler 1986) is that the private sector organisations, in which rights to profits are clearly defined, will perform better than public sector organisations, where rights are diffuse and uncertain. The public choice theorists such as James Buchanan and Gordon Tullock (1962), Mancur Olson (1965), Gordon Tullock (1965) Anthony Downs (1967), and William Niskanen (1971) are of the opinion that politicians and state bureaucrats pursue their own self interest rather than the 'public interest' or the will of the people. Policies are arranged to maximise votes and departmental budgets are expanded so that bureaucrats benefit from better jobs and higher salaries. The public choice theorists argue that the pursuit of self-interest in the

4 The major element of the Dirigiste Dogma is the belief that the price mechanism, or the working of a market economy, needs to be supplemented (and not merely supplemented) by various forms of direct government control, both national and international, to promote economic development (Lal, 1983:5).
economic marketplace can be expected (with a few notable exceptions) to yield socially desirable outcomes while similar behaviour in the political marketplace can have damaging consequences. Tullock (1994:xiv) said that ‘most public choice theorists do not think the government provides very high-quality service’.

Krueger (1993) raised questions regarding welfare economics, which is based on the premise that when there are departures from a competitive Pareto optimum there is a self-evident case for government intervention. According to Krueger (1993:55), even if the objective of policy is to achieve a Pareto optimum, questions regarding governments’ capacities to implement alternative programs and activities would still have arisen. She raised the following issues regarding the benevolent social guardian role of a government (Krueger 1993:55-58):

- Firstly, economic theory has long been based on the premise that most individuals are pursuing their own self-interest in the private sector. Therefore, given the consistency of the assumption of self-interest, it should not be assumed that those in the public sector would not also seek their own self-interest.

- Secondly, in most countries, lobbies and interest groups are widely perceived to use their influence to bring about policy outcomes they desire. These outcomes are often inconsistent with an efficient allocation of resources.

- Thirdly, it has been widely noted that in collective decision making, there can be substantial free-rider problems

- Fourthly, when government institutions implement controls in attempting to prevent private individuals from carrying out profitable transactions or from conveying valuable property rights without charging for them, there are bound to be incentives for people to profit from receiving the property rights or to capture the profits legally or extra-legally at some cost. These activities are ‘rent seeking’ in the sense that the resources devoted to obtaining the item of value do not create value and constitute a deadweight cost.

- Finally, there are inherent uncertainties and informational asymmetries in economic activity. This approach goes back to the Hayekian view that the essence of economic activity is the information held only by individuals who will not be willing to reveal it to others. In this view government officials may be in poorer position than private agents with respect to information. Information asymmetries can prevent behaviour of the sort assumed by the benevolent social guardian model.

Mitchell and Simmons (1994) argued that those who justified government action in solving market failure did not stop to ask questions regarding government failures. They showed the idealised democratic state to be just that, idealised but not realised and with no potential for realisation. Mitchell and Simmons (1994:63-4) said that:
Democratic politics are not really government by the people but rather an intense competition for power by means of votes among contending politicians. In that competition, politicians find it highly rational to engage in obfuscation, play acting, myth seeking, ritual, the suppression and distortion of information, simulation of hatred and envy, and the promotion of excessive hopes.

The World Bank's 'market-friendly' approach (1991, 1997a) calls for governments to intervene less in certain areas and more in others. The state should let markets work where they can, and to step in promptly where they cannot. This approach makes it clear that intervention by the public sector is not undesirable in itself. On the contrary, many sorts of intervention are essential if economies are to achieve their full potential. The World Bank (1991) provided an abbreviated list of indispensable interventions that include the maintenance of law and order, the provision of public goods, investments in human capital, the construction and repair of physical infrastructure, and the protection of environment. In all these areas (and arguably more) markets 'fail' and the government must step in. But according to the World Bank (1991) the countless cases of unsuccessful intervention suggest the need for caution. Markets fail, but so do governments. Therefore, to justify intervention it is not enough to know that the market is failing; it is also necessary to be confident that the government can do better (World Bank 1991:131).

According to the World Bank (1991:131) governments are prone to fail, at least in economic terms, for reasons such as: (a) a combination of political objectives and constraints and weak administration; (b) the creation of vested interests due to government intervention which makes it difficult to change the policy; (c) corruption arising from excessive intervention that weakens government's ability to carry out its functions efficiently; and (d) bribery, nepotism, and venality that cripple administration.

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5 Mitchell and Simmons (1994:82) caution that this does not mean democracies should be replaced by an alternative ideology. According to them: 'even imperfect democracies have far more to be said in their favour than non-democracies. Democracies honour individual sovereignty as a goal worth attaining. And whether one citizen likes another's preferences in the market or polity is unimportant compared with the opportunity both have to give voice to their opinions.'

6 For example, once protection is granted, it is exceptionally difficult to remove. Protection creates rents: owners of some labour, capital, or land obtain higher returns than they would in the absence of intervention. New resources are drawn to the protected industry until, at the margin, the rents disappear. Removing the protection penalises not only the owners who first received the rents as a windfall, but also those who came later, seeking normal returns. Thus, even when industrial interests have not created protection, protection creates industrial interests. These then become a formidable obstacle to liberalisation later (World Bank, 1991).
and dilute equity from the provision of government services and also undermine social cohesiveness.

Meanwhile, Stiglitz (1989:45) suggested the following as the major sources of public failure: (1) the fiduciary role of the government imposes severe constraints on employment policy (both pay and tenure); (2) the government fiduciary role also imposes severe constraints on expenditure patterns, particularly arising out of equity concerns; (3) problems of imperfect information and incomplete markets, which are a source of market failure, are also pervasive in the public sector; (4) the potential for redistribution inherent in the government's powers of compulsion may give rise not only to inequities but also to wasteful rent-seeking activity; (5) the limitations of a current government to impose binding commitments on future governments (a limitation which can be traced both to restrictions on property rights transfers in the public sector and to democratic processes) may impose large economic costs; (6) other limitations on property rights transfers in the public sector provide further limitations on the design of effective incentive structures; and (6) lack of competition within the public sector further attenuates incentives.

The difficulty with the pro-market arguments is that market is perfect and as such should be left unfettered to lead the development process. To justify the virtues of market, the pro-market analysts referred to in this section argued that state is prone to failures and as such cannot assume a leading role in the development process. This is because, according to these analysts, state does not have the mechanisms that market has that could make independent and possibly conflicting strategies of a large number of individual agents (pursuing their self-interest) compatible. Also, state does not have the supply and demand and ultimately price formation mechanisms that market has to enable it to take into account the scattered and specific knowledge owned by each household or firm and transmit it to the rest of society. It is also market and not state that has the ability to stimulate technical change and innovations and to enhance competitiveness of labour and capital. In other words, market is the necessary ingredient for reaping the dynamic increasing returns of scale associated with competition and its stimulus innovation. In addition, the pro-market analysts such as Buchanan, Niskanen, Down, and Krueger argued that politicians and state bureaucrats pursue their own self-interest rather than the 'public interest' or the will of the people. As such, policies were arranged to maximise votes and departmental budgets were expanded so that bureaucrats benefit from better
jobs and higher salaries. As such, state’s intervention, more often than not, according to the pro-market analysts, would only distort the market, hence the effectiveness of its mechanism to foster development. Therefore, except for maintaining law and order, and providing what Mills called the ‘great goods’, state has no other role in the development process. Whether this assertion is justified will be evaluated in the following section.

**Arguments for the State**

Keynes (1936) argued that ‘market forces’ were patently incapable of guaranteeing full employment, and therefore, government intervention in the economy was required. According to Keynes, in the real world ‘perfect competition’ and extreme flexibility of wages and prices which led to equilibrium was a fantasy. Even if such equilibrium were achieved, there was no reason why this should be at full employment. Adequate public regulations and fine-tuning of monetary and fiscal policies were believed to promote full employment and a fast and steady growth path. Market mechanisms had to be tamed by legislation, regulations, collective agreements, built-in stabilisers in the tax system and the reactive functions of the Central Bank. As Joan Robinson pointed out (as cited in Boyer 1996:84) markets are probably efficient mechanisms in allocation of scarce resources and the setting of prices, but they are generally unable to provide full employment and prevent major macroeconomic instabilities. Thus, governments had to control market and intervene in their regulation.

Klamer (1984:10) reported Tobin as saying ‘I think the basic issue there is the question of whether there are any deadweight losses or market failures of a macroeconomic nature in the market economy. Neo-Keynesians think that there are, and that the government can do something about them’. According to neo-Keynesian commentators, the market economy is not inherently self-equilibrating. A socially desirable income distribution cannot take cognisance, if the free market is left to its own devices. These social and political considerations provide an independent justification for government intervention in capitalistic mixed economies where income and wealth are, as a rule, unequally distributed (Naqvi 1993:76-77).

Economic development theory emerged as a separate field of academic inquiry in the postwar period because of the needs to understand why some nations were poorer than others and what their respective governments could do to rectify the situations (Brown
1993:2). The landmark studies included Rosenstein-Rodan’s (1943) conceptualisation of the ‘big push’ needed for industrialisation. Rosenstein-Rodan argued that pioneering industrial investments is unlikely to be profitable if undertaken in isolation. The centrally coordinated series of such investments could generate positive returns. Other early development thinkers such as Nurkse (1953) and Myrdal (1957) shared a belief in the potential for interventionist policies to secure the benefits of more rapid growth. According to Arndt (1987), when Gunnar Myrdal’s book, entitled *Economic Theory and Under-Developed Regions*, was published in 1957, it amounted to something entirely new in history. In that book, Gunnar Myrdal (1957:80) wrote:

> The emergence in underdeveloped countries of this common urge to economic development as a major political purpose, and the definition of economic development as a rise in the levels of living of the common people, the agreement that economic development is a task for government...

Developmental economists such as Alexander Gerschenkron (1962) argued that the ‘catch-up’ nature of industrialisation in late developers required a rapid and massive accumulation of capital for infrastructure and capital-intensive industries (for example, steel), which was simply beyond the capabilities of private entrepreneurs in nations such as Germany and Russia in the late nineteenth and early twentieth centuries and many extremely poor developing nations today. According to Prebisch (1984) there is a need for an active state role in development planning in order to induce structural change and to intensify the rate of internal capital formation. Mellor (1986) also noted that in order to promote balanced sectoral growth, it is essential to pursue a deliberate policy of raising the real incomes of the rural poor by keeping the price of food lower than would prevail in the free market. Economists who subscribe to this school of thought openly advocate an activist role for the government without de-emphasising the informational and allocative economies that free markets achieve at a minimal cost. That policymakers accepted this advice was evident from the large number of medium-term (indicative) plans that have guided public sector development efforts in developing countries (Naqvi 1993).

In 1977, John Kenneth Galbraith presented a television series entitled ‘The Age of Uncertainty’. Galbraith (1977) viewed government policy and intervention as essential to bringing about economic stability, efficiency, and enhanced social equity. In his analysis,
Wolf (1988:4) pointed out that Galbraith's stance against the market draws support from a formal theory of market failure, which constitutes the core of welfare economics. The market failure theory elaborates the predictable shortcomings of markets when confronted with public goods, externalities, increasing returns, market 'imperfections' of various kinds, and the possible social inequity of even 'efficient' market outcomes (Stiglitz 1988; 1989). In its turn, welfare economics provides guidelines for government intervention to remedy, or at least alleviate, these shortcomings.

Ram (1986) studied the impact of government size on economic performance and growth using cross-section and times series data of 115 countries. He reached the following conclusion (Ram 1986:202):

The main result is that it is difficult not to conclude that government size has positive effects on economic performance and growth. Even more interesting seems to be nearly equally pervasive indication of a positive externality effect of government size on the rest of the economy. It is also possible to infer from the cross-section evidence that relative factor productivity was higher in government sector than in the rest of the economy at least during the 1960s. At a more detailed level, three tentative results are discernible; the positive externality effect of government may have increased over the 1970s; relative factor productivity in the government sector could have declined during that period; and the positive effect of government size on growth could well be stronger in a lower-income context.

Evans et al. (1985) argued that states create markets and the possibility of markets. Even multinational capitalists, who may at first glance appear to strive for the freedom of statelessness, constructed strategies of accumulation that depend on strong interventionist states. As states create markets, the growth of markets, in turn, is central to the emergence of the modern state. In fact, contemporary state socialist administrators preside over the creation or recreation of market structures to pursue their own domestic goals, as well as deal with pressure created by their nations' participation in international markets. And even more clearly, world markets were both necessary to and require something like the modern inter-state system in which rival states compete geopolitically. That requires a framework that ensures predictability for transnational interactions.

According to Rueschemeyer and Puttermann (1992:243), markets can accomplish a number of things and many of them are critical to economic efficiency. However,
markets also allocate income in disregard of prevalent notions of equity, leaving some needs unmet and creating concentrations of economic power that coexist tensely, at best, with democratic political life. As such, Rueschemeyer and Putterman (1992:244) argued that the state is expected to establish and maintain the framework within which the pursuit of individual advantage in the market is carried out. Due to its monopoly of legitimate coercion and the associated claim to make and implement binding collective decisions, the state can overcome the free-rider problem. The state can also promote socioeconomic development because development necessitates many institutional innovations and structural transformations in society and economy aside from the creation and ordering of markets. In addition, the state can raise major socioeconomic policy issues that are not satisfactorily addressed by the sheer interplay of market forces. Dutt et al. (1994:4), on the other hand, argued that even in the absence of market problems, the state must do a variety of things such as maintain law and order to protect private property and ensure that contracts are honoured. Based on his study of the role of government in East Asian industrialisation, Wade (1990:345) concludes that government can guide the market to produce better industrial performance than a free market, even in the absence of neoclassical type market failure.

Grabowski (1994:420) argued that it was the failure to industrialise and not state intervention that caused the lack of development in many of developing countries. He argued that the key distinction between failure and success in economic development was not due to the size of the government’s role or to the functions and policies the government undertakes. It was the ability of the government to make its protection and subsidies conditional on attaining dynamic efficiency. Successful development occurred when the state was able to discipline firms and failure occurs when the state lacks the ability to discipline. Myrdal (1968) introduced the ‘Soft’ and ‘Hard’ state concepts. He argued that soft states are generally thought to be responsive to a variety of interest groups, with the latter playing an important role in defining government policies. Meanwhile the hard state is able to resist these influences and autonomously define goals and policies. Based on Myrdal’s concept, Grabowski (1994) argued that the hard state was able to commit itself to policies by taking into account the response of the private sector while the soft state followed the private sector. Therefore, a hard or autonomous state was a necessary prerequisite for state-driven economic development.
Scholars, such as Johnson (1982, 1987), White and Wade (1988), Amsden (1989, 1994), Wade (1990) and Lipton and Simkins (1993) argued that the state must inevitably play a major part in promoting industrialisation in late-developing nations and that the 'strong developmentalist states' that supposedly exist in East Asia validated this point. These commentators see the role of the state in creating the conditions for economic growth as crucial because late developers needed the state to give a 'big push' to break the cycle of low investment, low growth and continuing poverty; and to ensure more balanced growth.

The discussions presented in this section refute the assertion made by the pro-markets analysts that state has a limited role in the development process. In fact, the pro-state analysts suggested that the state should assume a leading role in the development process. However, as in the case of pro-market arguments, the difficulty with the pro-state arguments is that they assume market is so prone to failures that state has to intervene to correct them. In fact, the pro-market analysts assume that state always acted benevolently, and therefore has the ability to ensure efficient allocation of resources, particularly in ensuring equitable distribution of income and development. In addition, they argued that state intervention is necessary for late industrialisation process because only the state could give the 'big push' required to break the cycle of low investment, low growth and continuing poverty.

The problem with pro-market or pro-state debates is that each exploits the virtues of one or failures of the other to reinforce the reason for suggesting that either market or state assume a leading role in the development process. As such, the pro-market or pro-state analysts were not able to see if there is a possibility for state and market to collaborate in the development process. Whether such collaboration is possible will be evaluated in the following section.

**Arguments for State-Market Collaboration to Development Process**

As an advocate of a mixed economy and the welfare state, Polanyi (1944:139) argued that 'Laissez-faire was not a method to achieve a thing, it was the thing to be achieved. There was nothing natural about laissez-faire...[it] was enforced by the state'. Polanyi (1944:140-41) further wrote that 'even those who wished most ardently to free that state from all unnecessary duties, and whose whole philosophy demanded the restriction of
Despite Polanyi and before the East Asian miracle, there were two dominant paradigms for development. One focused on markets and the other on government and planning (Stiglitz 1996). According to Brittan (1983:13) the basic problem with these arguments is that the interventionists are overstating the effects of government action, while the free-market school is overstating the benefits of government withdrawal. Therefore, in contemporary debate, views have emerged with application to specific developing countries. In his article on the growing interdependence between transnational corporations and government, Stopford (1994:1) argued that a greater degree of cooperation in wealth creation between transnational corporations and the individual nation is possible, provided that both parties understand each other's requirements fully. In particular, Stopford argued the need to consider policy and policy coordination in terms of a positive-sum game, not the zero-sum game that has dominated so much Western thinking.

At the theoretical level, Streeten (1992:16) argued that a free, competitive market is a public good and as such, like other public goods, it called for public action to maintain it. He suggested that it is important for the government to organise markets so that they work efficiently. Furthermore, Streeten (1992:18) maintained that private and public actions often have to go together. Prices have their impact on demand and supply only if government takes complementary action. A factory may depend on a road, which was normally constructed by the government. Increases in agricultural output in response to higher prices may depend on irrigation or research into new varieties. The ability to make use of high-profit opportunities may depend on the availability of information about inputs and markets provided by the government (Killick 1989).

Naqvi's (1993:70) new paradigm for development economics indicated that the mixed-economy route to development is preferable because even though free markets by themselves may lead to a Pareto-optimal constellation of production and consumption, such an optimum is not necessarily unique. There may be many such optima, depending on the desired distribution of income. Hence, as the Fundamental Theorem of Welfare Economics insists, free markets can maximise social welfare only if supplemented with
the appropriate mechanism to regulate the distribution of income and wealth. By themselves, free markets cannot yield optimal social choice globally, especially in the cases in which choices among alternative courses of action have to be made under conditions of uncertainty.

Bowles and Gintis (1996) raised an issue regarding the relationship between inequality and economic performance and how they determined the structure of economic governance. Using what Bowles and Gintis (1996:334) termed an asset-based redistribution paradigm, they argued that the role of the state is to implement outcomes not directly, but by establishing the property rights and rules of competition, as well as other rules that determine the outcome of social interaction. According to them, this conception is a redefinition of the state's role in governance as compared with traditional notions of the Interventionist State, but not necessarily a reduction in its presence in economic affairs. While the state's role in production would be minimal, the scope of its activities would expand to redefining and reassigning rights of residual claimancy and control, in its credentialing role in educational voucher system, or in implementing children's rights, and in providing insurance. Moreover, the state would have an ongoing role in redistribution, though less in overriding market outcomes than in the continuing redistribution of property rights to overcome the disequalising consequences of luck, increasing returns to scale, differences in individual abilities, and other forces contributing to uneven development.

In presenting their perspectives on factors that contributed to the East Asian economic miracle, Aoki et al. (1997b) introduced what they called a market-enhancing view. This view considered the role of government policy as facilitating or complementing private sector coordination instead of viewing government and the market as the only alternatives, and as mutually exclusive substitutes. Aoki et al. (1997b) start from the premise that private-sector institutions have important comparative advantages vis-à-vis the government, particularly in their ability to provide appropriate incentives and to process locally-available information. However, Aoki et al. (1997b) argued that private-sector institutions cannot solve all market imperfections and that this is particularly true for economies in a low state of development. The market-enhancing view thus stressed the utilisation of government policy to improve the ability of the private sector to solve coordination problems and overcome other market imperfections.
Ataul Huq Pramanik (1993) argued that so long as the presence of government was only to (1) promote the cause of growth or fill-in the vacuum created by the absence of the private sector in providing supportive services and (2) ensure social justice as a precondition for establishing socio-political and economic stability together with racial harmony, an even more dominant public sector seems beneficial. On the question of how much, how long, for what and when the government intervention should take place, Streeten (1995) suggested that the moment the private sector becomes more mature, rational and dynamic, being motivated both by productive efficiency and distributive justice, the public sector should concentrate more on the traditional arena of maintaining internal and external law and order coupled with administrative justice.

The Asian Crisis and its Impact on the East Asian Model of Collaboration

Following the Thai Bhat devaluation in mid 1997, the East Asian region entered severe economic crisis. The once booming economies of Thailand, Korea, Indonesia, and Malaysia have drastically declined. Singapore, Hong Kong, and Taiwan witnessed their own export markets shrivel and businesses contract. Growth was slowed in 1998 in most of these countries and for the hardest hit; the recession was the deepest since the Second World War. The crisis rocked the conventional wisdom. Yesterday's "miracle" countries became today's pariahs, and policies that were supposed to be emulated by every emerging nation, and that were pushed with unrestricted enthusiasm by the multilateral institutions, became questionable (Edwards 1999:1). Everyone seems to be asking whether the "miracle" was actually real (World Bank 1998).

Before the crisis, effective public institutions and governance were commonly believed to have fostered the impressive economic performance and high growth of the East Asia miracle countries (World Bank 1993; Asian Development Bank 1995). Since the crisis, views of East Asian governance have become less rosy. Although other issues such as contagion, weak financial institutions, short-term external debts, short-term capital flows, currency speculations and weak fundamentals had been suggested by many analysts (Edwards 1999; Bussiere and Maulder 1999; Baig and Goldfijin 1999; Johnston and Tamirisa 1998; Aizenman 1999) as the cause of the Asian financial crisis, governance has
been recognized as the overriding factor that brought to fore these problems. Corporate arrangements between the state and economic elites were blamed for government favouritism that propped up failing business and banks. For example, Korea’s *chebol* and the state institutions that mediate their interest had been characterized as dysfunctional cronyism. Accusations of corruption had proliferated (World Bank 1998).

According to the World Bank (1998) the conventional wisdom was that the well-trained, enlightened technocrats provide the predictable and transparent policies needed for sustainable growth with equity in East Asia. Three institutional mechanisms that were at work were (1) a politically insulated, well educated, technocratic team to formulate and manage policy, (2) A government that was competent, incorrupt professional bureaucracies recruited and managed according to competitive, meritocratic rules and principles, operating with comparatively high efficiency; and (3) deliberation councils supplied an interface between state and society that gave business elites a say in policy and assured stability and predictability in macroeconomics and policy dimensions. However, the World Bank (1998) argued that the three tenets were not entirely accurate. Technocrats were not completely insulated from patronage and political influence. Civil service practices suffered deficiencies, opportunities for rent seeking undermined bureaucratic neutrality and performance. Finally, the virtues of deliberation councils may have been overstated.

Fons (2000) argued that poor transparency has contributed to the East Asian Financial crisis. According to him, there are several reasons why certain banks would favour poor transparency. Primarily, it cost money to institute timely, accurate and detailed accounting system. Also, transparency restricts management’s ability to engage in self-dealing. In many cultures, it is expected that loan officer would receive a ‘gift’ for making a loan to certain borrowers. These activities may be difficult to hide under a fully transparent system of reporting. In addition, fully transparent reporting may reveal competitive strategies or vulnerabilities where a bank holds a large unhedge position in some asset or currency. State-owned banks may not want transparency to reveal policy lending or loans to finance a project considered to be state secret. The key lesson being learned in Asia is that the true extent of problem loans at many Asian Banks is still not officially recognized. The inaction on the part of the authorities to deal with this banking problem reflects the unwillingness to see firms fail. There appears to be a culture bias
against failure and in the Asian Banking system there is no winners and no losers. Management was not held accountable for mistakes and misdeeds go unpunished.

According to Rodrik (1999), due to the crisis, policy advisors and multilateral institutions are tempted to extent their advice and conditionality to a broad range of institutional areas including monetary and fiscal institutions, corporate governance, financial and asset market supervision, labour-market practices, business-government relations, corruption, transparency and social safety nets. However, he argued that while such efforts have got the basic diagnosis right, they suffer from two weaknesses. First, it is not clear if the policy advisors and multilateral institutions can overcome their bias towards a particular “neo-liberal” social-economic model. It is telling that when South Korea came under the IMF conditionality, the IMF asked the country to undertake an ambitious range of reforms in trade and capital accounts, government-business relations and labour-market institutions that entailed remolding the Korean economy into the image of a Washington economist’s idea of a free-market economy. Rodrik (1999) further argued that this model is not only untested but forecloses some development strategies that have worked in the past, and others that could work in the future. Therefore, Rodrik (1999) is of the opinion that the approach that presumes the superiority of a particular model of a capitalist economy is quite restrictive in terms of the range of institutional variation that market economies can (and do) admit. Secondly, even if the policy advisors and multilateral institutions could shed their preference in favour of the neo-liberal model, there would remain an organisational bias towards providing similar advice to client governments.

In summary, the arguments presented by the World Bank (1998) and Fons (2000) suggested that governance is weak in the East Asian countries. The weakness, however, is not an indication that the East Asian model of development is ineffective. This is because in the past, the model has proved that it can contribute to development. In fact, other development models can be ineffective if there is lack of good governance as indicated by the experiences of many developing countries outside of East Asia.

Discussions in this section suggested that it is possible for state and market to collaborate in the development process. This is because, state and market have their own strengths and weaknesses and the proponents of state-market collaboration are of the opinion that
collaboration would enable state and market to maximise their strengths and minimise their weaknesses and foster development. As indicated in this section, the collaboration strategy requires state and market to complement each other, where state should institute enabling environment to facilitate market initiatives.

**Institution and Policy for Collaboration**

Collaboration has become widely discuss in recent international development strategies, spurred by the staging of the Rio Earth Summit in 1992. It has now been describe as a tool for development (Paoletto 1999:35). Concrete experience is accumulating in policy fields of education, health care, energy policy, criminal justice, transportation, environmental policy, technology policy and many more (Linder and Rosenau 2000:1). According to Butler and Gill (199:69), the search by Government for the third way between state run nationalized industries and privatisation has put the subject of public-private collaboration on the political agenda. Paoletto (1999) argued that within the spectrum of globalisation and global economy, collaboration is considered to be useful in effectively expand resources and improve services. Countries around the world are interested in the approach while United Nations and World health Organisation are experimenting with them (Linder and Rosenau 2000:1).

**Why Public-Private Sector Collaboration**

There is a need to identify the reason for promoting the collaboration approach to development. Udell (1999:606) suggested that collaboration is becoming increasingly necessary because of the increase global competition and mobility of industry. Paoletto (1999:36) suggested that there are a number of key patterns that are emerging in the globalisation process that contributed to the growing proposition for the collaboration approach to development.

One aspect of the globalisation process is the overall move from centralization to decentralization in government, business, industry and organisations. For governments, decentralization does not mean that there is no need to have a national government (Wang 1999:3). In fact, according to Paoletto (1999:42), the governments funding and supporting projects that have a positive impact on the future of a country and its people are still critical. However, governments are keen to shift more welfare provision to private hands to keep public spending under control and to avoid having to raise taxes or cut benefits (Economist,
The key is to envision a structure that blends centralization and decentralization in an effective manner. Paoletto (1999:43) suggested that environmental, health and education are among the options where the collaboration approach could be beneficial.

Another major pattern emerging from the globalisation process is a move towards cooperation. The reasons for this include maximizing the use of funds and resources for a given purpose and innovation through which ideas could be shared and improve. For example, the more diverse a group of people working on an issue for common objective, the more likely a favourable result will be achieved. Moreover, cooperation is a by-product of strong information flows that would enables organisations to perform better. According to Paoletto (1999:44) a key point for business, government and other organisations is to have systems that promote and facilitate cooperation.

Innovation is a key to the New Economy, without which national economies would stifle. In an era of rapidly advancing technology, public-private sector collaboration can be instrumental in enhancing innovation and in turn the (a) development of new and improved products and services, (b) protecting and enhancing the competitive standing of a state’s and nation’s industry; (c) providing the educated and skilled labour force. However, these collaboration, either formal or informal, are most likely to arise and succeed if they are based on accurate information revealing how each party's interests can be served through cooperative efforts (Udell, 1999: 612).

According to Butler and Gill (1999: 72) organisations might pursue collaboration strategy because contextual factors and inter personal factors. Contextual factors refer essentially to resource dependent relationship in the environment covering variables such as scarcity, interdependence, ambiguity, strategic fit, regulation and experience. Scarcity refers to the shortage of resources that may be due to crowding within a field of activity. A partnership becomes a way of reducing competition through exchange of obligations. Interdependence refers to the extent to which the workflow of an organisation is mutually dependent upon the workflow of other organisations in a field. Ambiguity refers to the lack of knowledge about a particular area of activity that an organisation may wish to move into. As such collaboration will allow two organisations to share knowledge in a particular field of activity. Strategic fit refer to the extent to which the notion of partnership fits with other strategies an organisation may be pursuing in other parts of its
domain. The lack of endogenous competition but the presence of exogenous competition would increase the propensity to collaborate. Finally, the regulatory imperatives may require an organisation to form collaboration.

Meanwhile interpersonal factor such as trust is necessary for successful partnership (Gill & Butler 1996, Schaan & Beawish, 1988). This is because most collaboration was form out of the necessity to tackle the severe issues facing the organisations. The partners believe that they can benefit more through collaboration than working separately (Darwin, 1999: 125). Therefore, according to Darwin (1999:136) trust is a must between partners. As trust deepened, activities emerged and intensified. However, Darwin (1999:136) caution that trust alone is not enough; there must be a contract or any form of written agreement, however, simple, to which could be referred to in case of an impasse between the partners.

**Public-Private Sector Collaboration to Promote Economic Development**

Collaboration can take place if there are common objectives, an agreement to undertake the propose activity to take advantage of each other strengths and to overcome weakness by sharing of expertise, knowledge or experience. According to Udell (1999:605) collaboration that does not stifle competition or create monopolistic advantages for one party can be productive. Even there are some types of public–private collaboration that could be socially and economically dysfunctional; it does not suggest that all public and private sector collaboration or co-operative ventures are bad.

Udell (1999) highlighted the Wisconsin’s Joint Finance Committee as an example of public-private sector collaboration that has contributed to economic development. This Committee held public hearings on the business property tax study because the two houses of the Wisconsin Legislature were in a deadlock concerning the 1973-1975 state budget. Those involve in the public hearing were the tax committee of the Wisconsin Manufacturers Association, a representative from industry and Wisconsin’s head of the State’s American Federation of Labour-Congress of Industrial Organisations (AFL-CIO). The unexpected result of the hearing was a substantial reduction of a major tax on industry. The state went from having the highest tax on Manufacturer’s machinery and equipment in the USA by over 100 per cent to no tax on machinery and equipment. The economic impact of the tax changes was that despite a national economic downturn in
1974, Wisconsin’s economy prospered. The exodus of industry from the state not only stopped abruptly, it was reversed. Within 10 days of the budget bill, American Motors Corporation announced it would locate a new plant in Wisconsin and cited the tax revision as the reason for locating the plant in Wisconsin rather than in Canada as previously planned. During the first 12 months following the legislation, the State, with 2.1 per cent of the nation’s population, accounted for 13.4 per cent of the nation’s growth of manufacturing employment expanded at five times the national rate. For many years, the growth of personal income in the state had lagged that of the nation and that of neighbouring Midwestern States. During 1974, Wisconsin’s personal income expanded 9.8 per cent, exceeding that of the nation and every other Midwestern State.

Health and education are two fundamental sectors that must be develop to promote economic development. Traditionally, the public sector has assumed a major role in financing and provision of health and education services. The dominant role of the government arises from the characteristics and the definition of ‘public goods’. Health and education are considered as public goods, particularly at the basic level since they benefit a nation’s social and economic growth as a whole. As such, in the past, governments developed elaborate and expensive public infrastructures to deliver these services, which resulted in a very large network of facilities (Mitchell 1999; Wang 1999).

Recently, many policy makers are beginning to question if this is the best model to use (Mitchell 1999; Wang 1999). There are basically two concerns: quality and funding. In terms of quality, in both health and education, the public systems throughout the world have come under attack for the poor quality of the services delivered due to, among others, difficulty to recruit and keep motivated and qualified staff at the peripheral facilities; low pay; difficult working conditions; low status; and lack of support from the government bureaucracy, which has inevitably led to poor quality services. Lacks of books, drugs, equipment and maintenance of the buildings have further undermined the motivation of the staff and the quality of education and health services (Mitchell 1999).

In terms of funding, Mitchell (1999) suggested that the lack of financial support that is available for social services is due to population growth and the enormous cost of hospital and university services. For example, in Asian countries, the growth of the population and the dramatic reductions in infant and child mortality has resulted in an
ever-increasing number of school age children. Therefore, Mitchell (1999) argued that even if the funding per child is held constant, the total budget needed for education of this large cohort of children has grown with the increase in students and has outstripped the government’s ability to pay.

As for the enormous cost of hospital and university services, Mitchell (1999) argued that these institutions have becoming increasingly expensive as the try to keep up with the escalating costs of technology, diversity of services offered and demands for imported drugs and equipment in hospitals. Few if any government can fund tertiary care at the levels needed to maintain excellence and one result has been that money needed for primary education and primary health care is often lost to he tertiary institutions.

The lack of resources and poor quality of health and education services call for a greater involvement of the private sector, including non-government organisations, business corporations, the community, parents and families in the financing and management of these services (Mitchell 1999; Wang 1999:1). This is because over the years some private organisation and groups have proved to be very effective in supplementing the public sector initiatives in providing health and education services. In some cases, they have cooperated with governments in providing effective and efficient management of government-financed or subsidized services.

An important outcome of globalisation on education is the internationalisation of education at all levels and in particular on managing education. Technological developments in computing and information technology and telecommunication are increasing the speed of this internationalisation process. These developments are altering the nature of work that in turn is expanding the requirements for training and education, the range of education and training players and the types of delivery. Four themes emerged as a typical response this. They can be generalized as concentrating on the internationalisation of the curriculum, the location of the teaching, the student body and the course research. In Australia, publicly funded universities are finding ways and means to meet the challenges of the internationalisation of education and at the same time cope with the discipline on government funding. The Central Queensland University is one of them. The University has entered into a unique joint venture arrangement with a for profit organisation which manages customized, high quality outlets for full fee paying
students. This joint activity allows the university to provide a wide range of its accredited courses in venues far beyond its original area of operations (Shepherd 1999).

In Bangladesh, the Government has formed collaboration with the Non-Government Organisations (NGOs) to provide non-formal education. This is because the government recognized that it could not fulfil its states goals of providing education to all. Therefore, the government has move towards collaboration with the NGOs because they are more skilled than the government in reaching the marginal, unschooled population. They are also seem to be more pro-poor and much more flexible in being able to adapt to meet local needs. In addition, the Government has adopted the models for providing non-formal education developed by NGOs (Haq 1999).

**Nature of Public-Private Sector Collaboration**

Among advocates, collaboration represents the second generation of efforts to bring competitive market discipline to bear on government provision of goods and services. As distinct from the first generation of privatisation efforts, partnering involves a sharing of both responsibility and financial risk (Linder and Rosenau 2000:6). Rather than shrinking government in favour of private sector activity, the collaborative approach institutionalised collaborative arrangements where differences between the sectors become blurred. However Linder and Rosenau (2000:6) argued that this should not involve turning a policymaking responsibilities over to the private sector entirely.

Collaboration may be viewed as mutually beneficial arrangements that involve all stakeholders such as government, the community, the NGOs and the private sector. By taking advantage of the special strengths of each, synergies can be achieved. It will enhance the role of civil society, democratisation process, participatory approaches, and greater accountability in governance. To maximize the respective strengths of public and private sectors and minimize their weaknesses, there is a need to fully understand the possibilities and conditions for collaboration including legal and regulatory framework, and benefits and costs that forming collaboration may involve.

In applying the public-private sector collaboration, there is a need to ensure the achievement of the designated goals. For example, in the health and education system,
there is a need to choose a collaboration strategy that can provide quality health and education more efficiently, effectively and with equal access. Through appropriate arrangements, the public and private sector should be able to utilize and explore their combined strengths. This is not to diminish their respective role because the role of the public sector is important but the function of the private sector that are involve in financing and providing the services cannot be excluded in the overall development strategy to improve health and education (Wang 1999).

Collaboration is a form of joint effort or undertaking of public and private sector to achieve common objectives. However, sharing common objectives may not be the core condition. Partners may have different views and objectives. Therefore, the challenge of achieving objectives exists for the public and private sector and as such collaboration is likely to be critical to meet the challenge. The value of collaboration relies on the judgment of which to form the collaboration with and how they can best combine their strengths.

There are many types of possible collaboration, ranging from informal to highly formal arrangements. Butler and Gill (1999:69) suggested the following as the possible type of public-private sector collaboration. They are: (a) informal collaboration where an informal agreement to share information or premises may precede more formal joint-ventures, (b) co-optation where the outside elements are absorb into the management of an organisation (c) non-equity joint-ventures which involve a formal agreement to carry out a definite project, and (d) contracting which involve a formal agreement between two or more organisations whereby each undertake to fulfill certain mutual obligations

Mitchell (1999:74) suggested a public-funding private-delivery model. In this model, the services, or at least some part are delivered by the private sector in the belief that the quality and efficiency of the services will be better than if they were provided by the public sector directly. The most common type of the public funding private delivery model is the contracting model. Many governments have long experience with this model in contraction of hospital and secondary school services, often in the rural areas. Often the model is that government supports staff salaries of staff working at private hospitals, but increasingly other types of contracting models are being introduced where hospitals are paid per patient or per hospital day.
In addition to contracts, other models are being used in the public-financed private-delivery environment. In health, an emerging area is the use of health insurance programs that give individuals health care coverage at a provider of their choice funded through a public program. The theory is that private providers in this system are of higher quality and more efficient than the government delivered system, even though the evidence is not yet clear. Another model is the use of vouchers. This model provides individuals with government funded vouchers that entitle them to receive a fixed amount of services in education and health. The advantage of vouchers is that these are targeted to specific individuals or groups of individuals and are used to pay for services up to a predetermined limit (Mitchell 1999).

State-Market Collaboration in Technology Development

As stated in Chapter 1, the technology development program has been chosen as a case study for the thesis because the public-private sector collaboration approach is one of the strategies adopted by the Malaysian government to achieve its technology development goals. Technology development is considered to be important because in many industrialising countries, issues associated with technological development are beginning to assume an important dimension. These countries are attempting to industrialise without the benefits of the long, more or less evolutionary process of technological change characteristic of mature industrial nations (Hamzah 1996:1). The pace of development and international competitiveness of industries in the developing countries, and particularly in the NICs, has been attributed to their technological competence and capabilities to identify, select, adapt, diffuse, and improve modern technologies to suit domestic conditions as well as the changing international environment (Anuwar 1992:100).

There is, according to Hamzah (1993), a growing realisation that market forces alone may not be sufficient to generate technological development and therefore, there is a role for governments to shape and promote it. The experience of the Asian NICs with different policy regimes and degrees of state intervention has indicated that the best approach lies somewhere between limited state intervention, through simply providing a broad policy environment, and pro-active state intervention through direct R&D support (Anuwar 1992:100).
Anuwar, nevertheless, cautions against extensive state intervention in the production system. He pointed out that such undertakings tend to introduce rigidities incompatible with the requirements of the new competitive environment, unless state enterprises have autonomy in strategic decision-making. Also, public R&D institutes, as well as the universities, run the risk of being insulated from the needs of industry and thus may produce results which have limited commercial potential. On the other hand, the minimum state intervention formula ignores certain potential external economies to which new technologies give rise.

According to Dahlman and Ross-Larson (1987:773) what governments can do in developing and promoting technology has so far been implicit. Even so, the underlying principles for government intervention should by now be clear. The most important role of government is establishing an environment that stimulates firms and specialised technological agents to engage in ongoing technological efforts and to develop added capabilities that improve productivity and overall economic performance. Government can also intervene directly to induce choices of techniques that are socially most appropriate, foster imports of technology on the best possible terms, and stimulate the development of specialised technological agents.

Dahlman and Ross-Larson (1987:773) further argued that the choice of an appropriate technology depends on the availability of the necessary information and the ability to use that information effectively. Because of large economies of scale in collecting and organising information, and because information is a public good in the sense that its diffusion and use do not deplete its value, governments often justifiably subsidise its collection and dissemination. For example, Brazil and Mexico have set up technological information centres that charge private users only a small fee for access to their data banks. And because few firms in developing countries have sufficient technological capability to evaluate alternative techniques appropriately, governments have a role in emphasising technical training and in subsidising the development of that capability. Again, Brazil and Mexico have agencies that subsidise technical training and equipment purchases by the consulting firms that conduct these studies.

Besides providing information to assist in the acquisition and dissemination of technology, government policy is also important in the development of local
technological capability (Dahlman and Ross-Larson 1987:775). This is because the central feature in technology accumulation is the parallel and interacting accumulation of production capacity and technological capability (Bell and Pavitt 1992:268). More importantly, the principal inputs in high technology industries are highly educated scientific and engineering staff and skilled technicians (Carnoy 1985:644). Meanwhile, Lall and Wignaraja (1996c:168) argued that technology is not perfectly transferable like a physical product. It has many ‘tacit’ elements that need the buyer to invest in developing new skills and technical and organisational information. However, Dahlman and Ross-Larson (1987) and Lall and Wignaraja (1996c:169) argued that the process of capability development may face various market failures and externalities in the choice, creation, and diffusion of technology. Therefore state intervention may be necessary to induce the deepening of technologies that may be in the country’s longer-term comparative advantage (Lall and Wignaraja 1996c:169). According to Bell and Pavitt (1992:272); A major government contribution to technological accumulation is its investment in education and training. It is widely recognised that education policy has a strong influence on the effectiveness with which technologies are assimilated and improved.

Lall (1996b:59) argued that technology markets are notoriously prone to failure for reasons as presented in Table 2.1. However, Lall pointed out that these failures are not identical across countries; they differ according to the level of development, the industrial structure and the initial base of skills and institutions. Perhaps more importantly, they differ according to the different perceptions of governments of what constitutes ‘market failure’ in technology development. Yet changing endowments and developing new markets structures is what development policy is all about. Most governments seek to dynamise their economic growth, create new sources of comparative advantage, deepen the industrial structures, and expand their base of technological capabilities. In addition, they often aim to develop specific industries and enter into new groups of activities that are believed to be more conducive to growth, competitiveness and technological progress than others. In other words, industrial and technology policies can be selective rather than just ‘market friendly’ (Lall, 1996a:1).
<table>
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<tr>
<th>Determinants</th>
<th>Market Failures</th>
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<tr>
<td><strong>Incentives:</strong></td>
<td>Externalities, dynamic learning, information gaps, risk, capital-market failures, inherited attitudes and capabilities. Market power, scale economies, complementarities</td>
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<tr>
<td>Free Trade, Domestic competition</td>
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<tr>
<td><strong>Skills:</strong></td>
<td>In formal education systems, investment suffers from lumpiness, lack of supply (teachers and facilities), imperfect foresight, lack of information. Quality control and curriculum content suffer from opportunities, information gaps. Investments by firms in training suffer from externalities (lack of appropriability), lack of knowledge of benefits of training, risk aversion, capital-market failures</td>
</tr>
<tr>
<td><strong>Information and Technical Support:</strong></td>
<td>Information gaps and fragmented information markets; 'learning to learn' delays; lumpiness of facilities; externalities and lack of appropriability; skill gaps, risk aversion, absence of technological intermediation</td>
</tr>
<tr>
<td>Knowledge of need for Industrial Technology Development (ITD) effort. Knowledge of kind of effort to make. Access to information from other firms, institutions, universities etc. Standards, metrology, testing facilities. Technical extension services. Contract research, design, and training. Information services on technology: sources, trends etc. Basic Research support</td>
<td></td>
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<tr>
<td><strong>Finance for ITD:</strong></td>
<td>Capital-market failures from asymmetric or missing information, moral hazard, cost of evaluation or enforcement of ITD loans; risk aversion or over-conservative policies by financial intermediaries of relevant financial intermediation skills</td>
</tr>
<tr>
<td>Availability of finance at appropriate rates and in sufficient quantity for R&amp;D or the commercialisation of innovations. Equity-sharing finance for innovators. Special finance for small and medium enterprises</td>
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<tr>
<td><strong>Technology Policies:</strong></td>
<td>Insufficient investment in local R&amp;D due to factors above. Transfer of technology: international market imperfections, monopoly, lack of or asymmetric information, passive dependence on imported technology Other failures above that deter ITD</td>
</tr>
<tr>
<td>Technology imports, FDI. Promotion of local R&amp;D and absorption of foreign technologies, Other interventions to strengthen ITD.</td>
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The United Nations (1994), on the other hand, indicated that there are complaints about governments' interference with science and technology (S&T) agencies. It is suggested that extensive government interventions may kill the innovativeness of S&T communities, either public or private. Nevertheless, there have been suggestions that the main tasks of the government in the attainment of a country's technological self-reliance and competence are to provide technological infrastructure such as R&D culture, human resource training for scientists and technical assistance and financial arrangements. Government may also undertake a middleman function by supporting anything to help value-added, profit-oriented production, and to lower costs for investors, especially the small and medium enterprises. However, anything beyond these few support measures should be left in the hands of the private sector (United Nations 1994:27).

According to William (1991), R&D comprises a spectrum of activities such as basic research, strategic research, applied research and development. A first question about this spectrum concerns the support for basic research. Such research is not only the training-ground for those who will continue to work in this area, but also for many of those who will subsequently work in strategic and applied research, in development and indeed in management. In addition, although the world stock of basic research is in principle available to all, to access it, and even more to take full advantage of technology emerging elsewhere, there is a need for the state to sustain a high indigenous level of technical competence. What is apparent in all countries is that the public sector is likely to provide most of the funds for basic research indefinitely. There is next to no scope for the market to fulfil these functions, since nothing immediately marketable is sought in carrying out basic research.

A second key issue, according to William (1991:182), is that, at the other end of the R&D spectrum, there are concerns regarding the distortions introduced by government support of R&D for defence purposes. This is not the only non-commercial reason for

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8 Basic research – undertaken to increase scientific knowledge, curiosity-driven and with no particular application in mind; strategic research – carried out with some eventual application in mind even when this cannot be precisely specified, therefore stimulated by technological need and given a sense of relevant by the need; applied research – pursued with a specific goal in mind, normally improving an existing product or process or creating a new one; and development – systematic work drawing on existing knowledge and bridging a gap between research and production, but still containing the essence of novelty (William 1991:180-1).
which government supports applied R&D, but in most countries it dwarfs in significance support arising out of regulatory or other legislative requirements. Clearly since the state can have no more paramount concern than the preservation of its own security, it would be fair to claim that the R&D necessary to that security must have first call on national R&D resources. Of course, the amount of R&D needed for this purpose is a matter of judgement, and therefore of controversy, but there is also another severe problem which arises from the pre-emption of national R&D resources by the demands of national security. That is, the commercial contribution from military technology seems unable to fully offset commercial opportunities foregone, even in the most favourable circumstances, precisely because of the concentration on military technology.

In complete contrast to the above, William (1991:183) argued that few quarrel with the argument that civil applied research and development should in principle be funded by industry and that expenditure on it should reflect both market and technical assessment of a kind which industry itself can best make. However, even here there can be cases where defects in the market mechanism mean that selective government support for industrial technology can produce national economic benefit. It follows that any country that elects not to subsidise its industrial R&D may risk handicapping its industry in international competition.

The discussions above seem to suggest that while market mechanisms are indispensable, there is a role for the government in achieving technology development objectives. The challenge is in seeking a judicious mix of the state and market in fostering and promoting technological development. As stated by the Organisation of Economic Cooperation and Development (OECD) (1985:56-58), technology development in the industrialised countries is usually generated by the private sector. The state, however, is more concerned with projects that involve large capital outlays and long gestation periods or which possess numerous economic externalities. For example, most of the basic research in the areas of defence, atomic power, outer space, oceans, the environment, and national health come under the purview of the state. In fact, the report indicated that since the 1980s most industrial R&D and innovation and government policy in the most advanced countries have been focussed on three clusters of technologies: information, materials, and biotechnology.
In the United States, the state governments have been taking an active part in promoting university research to fulfill the need for innovation. This is done with the formulation of long-range strategies for the utilisation of S&T resources, the identification of needs and opportunities for innovation, and the fostering of greater university-industry research interaction (Lindsey 1985). This example shows the importance of the state not only in providing the lead that industry needs but also in ensuring that the state and industry interact closely to provide the momentum for R&D activities (Anuwar 1992:99).

Meanwhile it is generally believed that in Japan and South Korea, public sector research institutes played a significant role in the development of industrial technology (Nesadurai 1994:307). However, a closer look indicates that private industry assumed a key role in working with public sector research institutes in developing industrial technologies. Moreover, firm-specific R&D in these two countries are largely undertaken in-house within manufacturing companies (Anderson 1984; Arnold 1988; Kodama 1989). Joint R&D between private industry and R&D institutes is usually undertaken for medium to long term projects of national economic importance (Nesadurai 1994:307).

Despite the above, an increasing emphasis, since the early 1970s, on the development of new indigenous technologies has intensified the need for greater Japanese government involvement in promoting R&D in private industry and in coordinating efforts to accelerate the pace of technological innovation. In addition to providing financial assistance and tax incentives to promote domestic technological innovation, the Japanese government has been placed under enormous pressure to expand its own R&D activity by way of increasing government R&D expenditures, expanding existing government and semi-government R&D laboratories, universities, and agencies, and setting up new organisations in strategic fields (Hirono 1986). At the same time, the Japanese government and private industry have initiated complementary programs for training and development of industrial human resources under broad guidelines set by the government. Although the latter does assist in technical training programs, most vocational training is done by industry (Anuwar 1992:99).

In the case of the developing countries, Anuwar (1992:97) argued that there is a need for the state to assume a leading role in the technology development process. One reason given is that the technology base of developing countries is still embryonic and industries
lack the capability to develop industrial technology. Another reason given by Anuwar is the failure of market mechanisms to activate any concerted effort towards technology development. Furthermore, the output of R&D activities has some of the attributes of a pure public good. Undertaking research is an extremely risky enterprise and currently the community has not developed adequate risk markets to shoulder part of the inventor's risk. This means that the government's role becomes crucial, given that technology development requires substantial infrastructural support of all kinds, including education and training, technical extension services, development of public-private sector linkages, and a legal framework to enforce property rights and maintain secrecy. Without the active encouragement and financial support of the state, the amount of R&D activity is likely to be less than optimal.

Yeoh (1995:112) supported Anuwar's argument. According to Yeoh, almost without exception, the state has participated in the process of industrial and technological development in the Asian Newly Industrialised Economies (NIEs). In the case of Singapore, Taiwan and South Korea, the state has taken on a more active role of 'coordinating' the decisions of private investors, and encouraging them, through various incentives and disincentives, to focus their investments in certain priority industries or activities. However, Yeoh (1995) pointed out that in the second-tier Asian NIEs, the states' role has been more passive, especially in terms of developing the local S&T infrastructure. Thus far, the states in these economies have focused primarily on creating favourable conditions for foreign investment.

The above discussion seems to supports William's (1991:193) argument that collaboration has become the means of maintaining involvement in the relevant research area. In technological areas, collaboration may be a mechanism for governments to harness national R&D efforts while also spreading risks and possibly enlarging final markets. For firms, collaboration can be the strategy of choice. Nevertheless, William warned that collaboration could bring problems. He argued that collaboration could put up costs even though those to each partner should be lower. It can be inflexible. Balancing equity and efficiency is a perennial difficulty, juste retour normally a democratic necessity but usually a managerial complication. Deciding intellectual
property rights can be a lasting irritation. Despite these, William believed that collaboration would increasingly be the way of the future in technology development because it makes sense for electorally-oriented governments and market-oriented firms.

In summary, this section brings together the views of the analysts that the public-private sector collaboration approach has a role in the technology development process. The majority of them seem to suggest that the role of the public sector should be confined to providing the enabling environment such as providing infrastructural support, including education and training, technical extension services, and a legal framework to enforce property rights. Beyond this, public sector interference may have a negative impact on innovativeness and create distortions in the technology development process. Technology Parks is one form of infrastructural support provided by the public sector in support of the private sector technology development initiatives.

**Technology Parks**

High-tech industry is a ‘buzz word’ for a concept which many planners, politicians and industrialists see as a panacea for the burgeoning problem of unemployment. The high technology phenomenon, dubbed the second industrial revolution, brings with it new challenges, not the least of which is how best to plan for it (Roberts 1986:15). With the changing technologies in industry and the changed property requirements that ensue, the concept of high-technology industrial estates in park-like settings has evolved (Howe 1983:42). In the United States, for example, high-technology companies evaluate potential sites based on the degree to which industry, universities, and government in these areas is able to cooperate in research and technology development programs. A cooperative research environment is desired because it makes research findings more widely available and increases the speed with which applications of research reach end-user markets (Wigand 1989). A similar recognition of needs can be traced within the European Union (Narjes 1989).

**Definition**

The term technology park is generally used interchangeably with science park, innovation centre, high-tech industrial park, technopole, technopolis, helipole, research park,

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9 Yeoh (1995) classified Singapore, Hong Kong, Taiwan and South Korea as the first-tier Asian NIEs and Malaysia, Philippines and Thailand as the second-tier Asian NIEs.
technology village, science town, and science city (Roberts 1986:15; Macdonald 1987; Joseph 1989:357; United Nations 1994:13). Depending on the country, the name can encompass developments such as Research Park, Science Park, Business Park and High Technology Park. In the United Kingdom, for example, the term commonly used is ‘science park’ and these are generally regarded as having a close association with a university or academic institutions. In United States and Australia, the term ‘technology park’ is more common (Howe 1983:42).

**Purpose of Technology Park**

As for the aims of technology /science parks, Joseph (1994:48) indicated that they are remarkably similar in different countries. For instance, some of the commonly cited aims of technology/science parks in the UK are (Joseph 1994:48):

- Facilitation of R&D links and technology transfer between the academic institution and the park tenants;
- The formation, attraction and growth of new firms;
- The promotion of ‘high technology’, leading edge technology’, or R&D-based technological activity;
- Employment creation;
- Regeneration of local economy;
- A commercial return on investment.

These aims often have been founded on the belief that universities constitute significant under-utilised sources of technology innovation. Hence, the location of a park near a university is thought to be desirable because of the access to information. Likewise, the experiences of California’s Silicon Valley and Boston Route 128 have guided park developers in the belief that labour supply is a critical factor influencing high technology growth. Technology parks are also believed to facilitate the genesis of new venture companies and Silicon Valley is an often-cited model for this (Joseph 1994:48).

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10 According to Joseph (1989:356), the Silicon Valley phenomena has been able to maintain the associated political beliefs and values because it is closely associated with economic growth and jobs. The story also contains a number of practical actions such as venture capital and technology parks that are easily translatable into policy. Finally each attempt to encourage high technology can be seen as being unique. Policy-makers are keen to be seen as doing something to promote industry in their region.

11 ‘Recipes’ for creating new Silicon Valleys frequently cite the ingredients that are considered to be important in its origins (Joseph 1989:356). One particular ingredient in this success story has been the Stanford Industrial Park: ‘Stanford Research Parks has served as a model for scores of other high-technology parks in the United States and around the world’ (Rogers and Larsen 1984:35).
The Development of Technology Parks

The initial concept of technology/science parks came from the US (Monck et al. 1988:64). The foresight of individuals such as Professor Terman at Stanford University was such that industry needed access to high quality research in order to be competitive in international markets. He, and others, also appreciated that academics might wish to commercialise the results of their research (Monck et al. 1988:3). Technology/Science parks have been most extensively developed in the US, where as far back as May 1974 there were estimated to be 82 technology/science parks in 28 States, of which 19 were exclusively for scientific-based industry (Howe 1983:42). According to Joseph (1994) there are over 300 university-related research parks in the U.S. As for other countries, the 1980s was a the growth period for science and technology parks. For example, the UK has 39 projects that can be classified as science parks. France has 40 parks or technopoles and Germany has over 120 innovation centres/technology parks/science parks that have been founded in the past 10 years (Joseph 1994:48).

In Australia, a Silicon Valley model12 has contributed to the proliferation of technology parks in the 1980s (Joseph 1989:354). One of the most significant of such initiatives has been the development of technology parks by state governments. There are now well over 20 technology parks and numerous other commercial developments such as business parks in Australia that are keen to establish themselves as centres for high technology industry (Joseph 1994:49).

Meanwhile, most of the technology/science park development in Asian developing countries13 is following the model of the industry-based technology park (United Nations 1994:14). This could be due to the fact that Asian universities do not obtain enough technical and financial support to establish and manage technology parks of their own (United Nations 1994:15). Since technology upgrading is perceived as the most urgent action needed by these countries to maintain their competitiveness in global markets, the technology park been advocated, planned and promoted by the governmental S&T establishments in these countries (United Nations 1994:16).

12 According to Bylinsky (1985:274) 'delegations arrive daily to probe, to invest, to try to buy into Silicon Valley companies, to manage otherwise to plug into this contained volcano of high technology. After leaving, they often try to create small Silicon Valleys at home'.
13 Referring to Malaysia, the Philippines, South Korea and Singapore.
Conclusions

The discussion above shows that the debate on the role of the state and market in the development process is coming to a full circle. It started with Adam Smith’s ‘invisible hand’. The classical economists central theme was devoted to the relationship between the state and the market in facilitating or hampering the development process. With the rise of neoclassical economics, attention shifted from the study of development to the study of the market itself. In the aftermath of World War II, Keynesian economics revised the conception of government intervention within the developed nations, followed by development economists, who argued for the state to assume a major role in fostering economic growth. However, the growing criticisms of Keynesian economics among economists in developed nations, the varied results from the development policies of the developing countries, the coming to power of Ronald Reagan in the United States and Margaret Thatcher in United Kingdom with their programs for a reduced role for government and the economic difficulties and the eventual collapse of the centrally planned Eastern European economies in the 1980s induced another major rethinking of the issue of the role of the state and the market in the development process. Added to these discussions is the rapid growth of the East Asian economies and the role of the state and the markets in those economies.

Discussions on the role of state and market in the development process indicated that they are greatly affected by ideology and preconceptions. Because preconceptions and attitudes were often inconsistent, there were times when individuals may rant and rave about the inefficiency, incompetence, or unfairness of the public sector. Yet when there is something wrong with the society, they want the public sector to resolve the problems and *vice versa*. The difficulty with this nature of discussions is that generally simple models of either market economies or of government operations were presented that does justice to neither. Views were based mostly upon the assumed ability of government to remedy some weakness of the market, or the capacity of market forces to highlight some weakness of government. However, in reality, market and government failures do occurred. Does this merit the collaboration approach between the state and

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14 For example, Brittan (1983:13) argued that ‘the basic mistake of the interventionists is to exaggerate the effects of government action, the mistake of the free-market school is to exaggerate the benefits of government withdrawal’.
market to foster development? Currently, a number of analysts, for example, Bowles and Gintis and Aoki, have suggested the collaboration between the state and market could promote development. Whether it is possible to add dimensions to the linear spectrum and to see if a regime combining certain features of state intervention with activities of a free market to promote socio-economic development is the main issue to be evaluated in this thesis.

As for the role of state-market collaboration strategy in technology development, this chapter has shown that the public-private sector collaboration approach in technology development has been the practice in industrialised countries such as the USA and Japan. Such collaboration seems to have contributed to these countries’ technological achievements. Hence, most analysts seem to agree that public-private sector collaboration has the potential to promote technology development. Most analysts seem to suggest that the public sector should confine its role to providing enabling environments so as to support private sector initiatives. As for technology/science parks, the chapter seems to suggest that it is a popular policy in both developed and developing countries in their pursuit to promote technology development, especially high technology.
Chapter 3
The Role of State and Market in the Development Process: the Practice

Introduction

Chapter 2 has shown that in theory, a majority of social scientists is still divided as to who should lead the development process. Nevertheless, developments in the East Asian Economies have suggested that there could be a possibility for state and market to collaborate in the development process. The purpose of this chapter that to find out if what is reflected in theory is also true in practice. For this purpose, the chapter examines the role of the state and market in the USA’s and Japan’s development process to see if there is any clear division in their roles or otherwise. These countries were chosen because a majority of analysts (Johnson 1982; Lodge 1990; Gereffi 1990; Bradford Jr. 1990, to name a few) classify US development strategy as market-led and Japan’s as state-led.

The Characteristic of State Intervention in USA

The purpose of this section is to find out what is the characteristic of the state-market relations in USA. According to Reinaman (1987:8), the American history has been full of fights over the state-market relations in the economy. This is because the USA has not had a single form of democratic state since its inception but rather several characterised by the varying degrees to which democratic constraints have been imposed upon market mechanisms. Wolfe (1977) argued that there have been six stages of American government, each characterised by a distinct mode of resolving the tensions between capitalism and democracy. These have included an ‘accumulation state’, organised at the dawn of industrialisation to facilitate capital accumulation, and later, ‘harmonising’ and ‘expansionist’ states that developed in response to the democratic demands made on the market system after immigration and unionisation.

Theodore Lowi (1979:279) characterised the American system as ‘socialism for the organised, capitalism for the unorganised’. He said this because of the ability of those with political influence to secure governmental support. Lodge (1990:28) asserted that time and again in American history, business and government have collaborated.
McQuaid (1994:xiii) argued that big business and the federal government in the modern USA maintain a close, symbiotic relation because they need each other. However, despite their collaboration, there has been denial of partnership, protestation of autonomy, and insistence of non-contamination because of US desire to maintain the appearance of business autonomy. As such, there were no ongoing, formal, and respected mechanisms of cooperation in the USA as prevailed in other countries such as Japan because their creation would suggest an acceptance of a business-government cooperation, which is ideologically rejected in the USA (McQuaid 1994).

Recently, The Economist (1996a:17) suggested that President Clinton might use regulation to pursue social goals without boosting federal spending:

Mr. Clinton (supported by congressional Democrats) wants to find a way of pursuing social goals without boosting federal spending. Regulation, which shifts the cost of public policy to individuals and firms, is the perfect means of doing this. The Republicans understand that too well. They know their efforts to restrain government will come to naught if new budgetary restraint is accompanied by new regulatory indiscipline. In short, regulation is as distasteful to them as it is attractive to Mr. Clinton.

Using regulation for social goals would constitute an increase in government hegemony over business and would alter the state-market relationship in the USA.

**Forms of State Intervention in USA**

**Industrial Policy**

Industrial policy has been the most prominent instrument used by many governments in the East Asian economies to foster industrialisation. In the most recent analysis of the USA industrial policy, Bingham (1998:151) argued that despite claims by Presidents Jimmy Carter, Ronald Reagan, George Bush and Bill Clinton that the USA does not have an industrial policy, the country they have governed certainly does. According to Bingham (1998) the Presidents were not alone in thinking that the USA lacked an industrial policy. Many of the policy communities have been vocal in their criticism of any government efforts at industrial development. Economists are critical because these proposals usually violate some of their theories. Conservatives are critical because they see industrial policy as nothing more than meddling with the free enterprise system.
Liberals are not much happier because they see industrial policy efforts as disconnected and uncoordinated, sometimes working at cross-purposes (Bingham 1998:151).

Despite the apparent unwillingness to acknowledge the existence of an industrial policy in the USA, Borgos (1991) argued that during the New Deal Era, the USA had joined other industrialised nations in experimenting with various models of government-led economic intervention. This direction was maintained and to a certain extent accelerated during the war years. Although some of the Roosevelt administration programs were designed to provide general stimulation to the economy, many other incentives such as the National Recovery Administration 'industry codes', the Reconstruction Finance Corporation, the Tennessee Valley Authority, and the War Production Board, authorised highly selective interventions in targeted regions, sectors, and companies. Borgos (1991) suggested that in present usage those interventions would qualify as industrial policy.

Tyson and Zysman (1983:21) also argued that policy measures with explicit and intended sectoral effects have played a role in shaping the post-war US economy. The USA, like most other Western industrial economies, has introduced a set of coordinated policies with the explicit purpose of influencing production levels, input usage, prices, and incomes in the agricultural sector. Procurement and research and development policies have intentionally influenced the aeronautics industry in both its civilian and military lines of production. More recently, the complicated set of price controls, taxes, and direct regulations on the use and distribution of oil have affected the operation of the energy

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1 For example, in his book *Losing Time: the industrial policy debate* (1992), Graham quoted several examples of how industrial policy is viewed in the USA. Carter's domestic chief of staff, Stuart Eizenstat (cited in Graham 1992:156), called the US policy 'a crazy-quilt – a makeshift industrial policy of often contradictory individual decisions'. Lee Iacocca (cited in Graham 1992:157) said, 'We have an industrial policy, it began far back in the colonial era, and today it's a bad one'. Harvard Law professor Julian Gresser (cited in Graham 1992:46) said 'We already have an industrial policy - it is just an ineffective one'. MIT economist Lester Thurow (Graham 1992:63) said, 'America now has an industrial policy. It just happens to be an industrial policy to shoot ourselves in the economic foot'. An economist and former Secretary of labour Robert Reich (cited in Graham, 1992:66) said, 'Thus evolved the haphazard pattern of industrial policies – the state responding to industrial crisis… There are also those in the USA who simply avoided using this term. According to Borgos (1991:77), instead of using the traditional vocabulary of economic development, the US politicians simply promised 'jobs, jobs, jobs'. But what they really delivered, according to Borgos (1991), was a sophisticated microeconomic strategy for renewing mature industries and stimulating the growth of emerging sectors. Behrman (1984:215) also indicated that the US officially avoids any semblance of an industrial policy. Public discussion tends to avoid even the word 'policy', favouring 'industrial strategies' or re-industrialisation. This rewording, according to Behrman (1984), helps to reject what is perceived to be the content of industrial policies employed by other countries.
industry. And finally, the extension of federal loan guarantees to Chrysler is an example of a policy measure that is simultaneously sector-specific and firm-specific. In this sense, the USA had an industrial policy\(^2\), but to some extent, this policy is haphazard\(^3\) (Tyson and Zysman 1983:20-1). Behrman (1984:77) supported this view. According to him ‘numerous activities of the US government do help to shape the industrial structure of the USA - just as an industrial policy would – though in different directions and with different techniques’.

Meanwhile, Hooks (1993), argued that many analysts have not given the Pentagon’s significant power and its implementation of an industrial policy sufficient attention. According to him, the Pentagon’s budget resources and administration authority have allowed it to pursue its goals in an autarchic fashion. Also in the name of national security, the Department of Defense has implemented a *de facto* industrial policy (Hooks 1993:203). Ulmann (1985:58) also argued that the USA has an industrial policy but it includes giving its all to the military. According to him, US government intervention in the market is already enormous, with military spending greatly contributing to US budget deficits.

Vogel (1987) also argued that the role of the American government in promoting the development of American industry has been far more extensive and far more important than has been commonly assumed. The USA, according to Vogel (1987:92) does have a relatively extensive set of policies towards industry: it does, in fact, target ‘winners’ and encourage the movement of capital and labour away from ‘losers’. Vogel (1987:98) argued that agriculture is virtually a textbook case of American industrial policy. The policy established an elaborate system of price-supports and output-controls through the Agricultural Stabilisation and Conservation Service and a system of subsidised credits through the Farmers Home Administration. It also subsidised the costs of providing electricity to farmers via the Rural Electrification Administration and significantly

\(^2\) Industrial policies are simply sectoral policies aimed at certain industries (Tyson and Zysman 1983:21).

\(^3\) Whether the industrial policy has been coordinated and systematic, or uncoordinated and haphazard, is another matter. Coordinated policy requires that the government has a clear view of its objectives in particular sectors, and that it structures its sector-specific and aggregate policies so that they are consistent with one another and with these objectives. Most of the industrial policies introduced by the US government during the postwar period have not satisfied this condition (Tyson and Zysman 1983:21).
expanded the construction of public works designed to supply both power and water to farmers in the Tennessee Valley and the West. The result was an astonishing improvement in agricultural productivity: between 1949 to 1959, agricultural output per farm worker per hour increased 85 per cent, between 1959 to 1969 by 77 per cent, and between 1969 to 1979 by 92 per cent (Vogel 1987:98). However, Vogel (1987) argued that the contemporary USA certainly has not resembled Japan in its single-minded commitment to economic development. The USA’s public policy since the New Deal has had a far broader range of objectives. But, over the last half-century, the USA has pursued sectoral policies no less vigorously – or less successfully – than its major industrial competitors.

Bingham (1998:23) supported Vogel’s (1987) argument. According to him, it is simply wrong-headed to believe that the government in modern American economic history has been laissez-faire. During the first three-quarters of the twentieth century, the US government provided significant support to a large number of industries and was massively involved with many of the most important ones. Government assistance came in two forms – through direct or indirect promotion and through regulation. Examples of government direct assistance to industries were the federal land grants to the railroads, the depletion allowance on minerals, direct loans to farmers, crop insurance to farmers, insurance on bank deposits, Government-paid construction of industrial facilities and government support for R&D, especially military product development (Bingham 1998:23-24).

Tyson (1993) provided a more recent example of government support for a specific industry. According to Tyson (1993:85) the semiconductor industry has never been free of government intervention. Comparative advantage in production and trade has been heavily influenced by policy choices, particularly in the USA and Japan. Some of these choices, such as the provision of public support for basic science, R&D, and education in the USA, have had general, not industry-specific objectives. But other choices, such as the provision of secured demand for industry output through military procurement in the USA have been industry specific in intent and implementation. In short, the semiconductor industry, wherever it has developed, has been an explicit target of industry policy – whether in the guise of military policy in the USA or in the guise of commercial policy elsewhere in the world (Tyson 1993).
In the meantime, Behrman (1984), Grant (1989), Thompson (1989) and Borgos (1991) pointed out that it is at the level of the state governments that the most active and innovative policies to improve industrial competitiveness are to be found in the USA. According to Borgos (1991:77) an exemplar of this industrial politics was the state of Michigan, located in the heartland of the mid-western ‘rust-belt’. The Wall Street Journal in 1988 (August 11, 1988 as cited in Borgos 1991:77) wrote that ‘Michigan has embraced economic development with a passion rivalled by few others’. ‘From the capital complex... a cadre of government whiz kids oversee an economic development program that lavishes advice and money on manufactures’.

According to Grant (1989:136), a principal reason why the state governments sought to increase their involvement in economic development activities has been because the federal government has withdrawn or substantially reduced its programs of assistance for distressed areas, small business and so on. In many states, policy was developed in response to the crisis of the 1981-82 recession. Another major factor was the change in the structure of the national economy, with large-scale closing of manufacturing plants taking place in the late 1970s and early 1980s in the ‘rustbelt’. One of the main changes in the state economic development programs in the 1980s was the relative decline in the importance of what has been called ‘smokestack chasing’, the attempt to attract firms from elsewhere in the USA or from abroad. Industrial recruitment was at one time the central thrust of most state economic development programs.

Behrman (1984) provided the following reason. The US government did not see itself as an appropriate decision-maker on the location or activities of industries, but as a supporter of industrial growth and competitiveness in general. Therefore, in principle, it stands ready to see the US develop industrially in whichever way the international markets and private companies decide.4 However, if state governments wish to operate on different principles, they are permitted to do so, so long as they do not violate national law or international treaties to which the US is a party (Behrman 1984:218). According to Behrman (1984:19), certain states have chosen specific industrial segments

4 Behrman (1984:218) pointed out that this is in principle only. The principle is violated whenever it begins to hurt seriously, and ‘political harm’ is more likely to catalyse interference than ‘economic harm’.
to sponsor and some have been exceptionally successful, for example Massachusetts with the electronics industry, California with Silicon Valley, and Texas in aerospace.

Bingham (1998:152-156) argued that there are regularities in the ways in which the US government supports specific industries. His empirical investigation of US industry policies suggests that the following regularities, which, taken as a whole, constituted the USA’s national industrial policy from 1976 through 1996. They were: (1) if the companies were too big that should they fail, the impact would have put much of the nation’s economic system at risk; (2) if a market is crucial to the USA economy, then the government would assume a prominent role in negotiations with trading partners; (3) in support of the urban real estate so as to ensures jobs for its population; (4) for the Defense Advanced Research Project Agency (DARPA) Component; and (5) for Technology Commercialisation. Based on this, Bingham (1998:42) argued that it is hard to say that industrial policy is not a part of America’s industrial heritage unless they could say that there is nothing ‘regularised’ about the nation’s policy toward individual industries.

However, being a broker state⁶, the USA could not have a declared, official industrial policy (Bingham 1998:4). It could only have a de facto industrial policy. Nevertheless, Bingham (1998:41) concluded that the USA, throughout its modern history, has selected industries for targeted assistance. Galambos and Pratt (1988:143-144), also concluded that such policies were, overall, highly successful. The performances of the regulated businesses such as the American airline industry, the AT&T, the Bell System, Television industry, the Petroleum industry and the Banking industry were excellent. Grant (1989:118) supported this argument by indicating that the USA has had a defence-led industrial policy and it is always possible to justify interventions in the USA on the grounds of ‘national security’. But according to Bingham (1998:159), industrial policy in the USA is not dead but becoming more focused. This is because the use and intrusiveness of specific industry policies is down from what it was twenty years ago. This is due to the maturation of the industry involved, changes in multilateral trade rules, deregulation, and the end of many subsidies.

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⁶ In spite of the sustained efforts of a strong and popular president in Franklin D. Roosevelt, a planned economic system in the United States never came about. Instead, from the Great Depression emerged a ‘broker state’ political economy (Bingham 1998:4).
This section has shown that despite the rhetoric, the USA state has been interventionist especially in areas that is crucial the wellbeing of the USA economy as whole. For example, even though many analysts rejected the notion that the USA has an industrial policy, arguments presented in this section indicated the opposite in true. Although the USA does not have a declared industrial policy, some of the measures introduced for certain sector or market were in line with the industrial policy. However, since most of the measures introduced or implemented were usually ad hoc in nature, then Bingham’s assertion can be accepted, that is, even though the USA does not have a declared, official industrial policy, it does have a \textit{de facto} industrial policy.

**Economic Planning**

Aside from industrial policy, Spulber’s (1995:214) recent analysis of the USA economy found that there has always been an undercurrent of support for economic planning in the USA. However, as in the case of industrial policy, the need for economic planning also surfaced from time to time. For example, it had only a truncated existence during the Great Depression under the National Recovery Act. It developed in partial ways under various agencies and departments during the war and re-emerged during the period of concern about the shape of the post-war economy. It resurfaced again in the mid 1970s during the great stagflation, in the form of the Balanced Growth and Economic Planning Act of Senator Jacob Javitz and Hubert Humphrey. This act was to lead the way to a ‘Balanced Economic Growth Plan’. Eventually the so-called Full Employment and Balance Economic Growth Act of 1976 was adopted, but it played an insignificant role in the subsequent development of the economy (Spulber 1995:214-5).

More recently, during the presidential campaign of 1992 and soon after their victory, President Clinton and Vice-President Gore released a number of documents emphasising the importance of technology to the USA’s economic development. However, their hazily defined policy in regard to economic growth clearly involves much more than a narrow technological approach to the country problems. Actually, their key 1993 document, \textit{Technology for America’s Economic Growth: a new direction to build economic strength}⁶, proposes a decisive shift in regard to the technological objectives, along the lines propounded in the \textit{Vision for 1990s} and in accord with the main thrust of

a formal report on technology policy made in 1990 by Dr Allan Bromley (Spulber 1995:215).

Other forms of state interventions could be categorised into promotional processes, activities involving the government as the large buyer in various markets, as well as a producer and owner of certain business enterprises, the development of science and technology, foreign competition and trade policies.

**Promotional processes**

In terms of promotional policies, the objective is to assist the growth and development of business. The USA state uses a variety of instruments, including credit safeguards, investor protections, loans, subsidies, tax incentives, export supports, import restrictions, and the transfer of public enterprises to private entrepreneurs in order to support and promote business. For example, the federal government's credit programs involve direct loans by federal departments and agencies (such as federally financed bank loans and agricultural loans), loans granted and issued by federal department and agencies and loans by federally sponsored and privately owned agencies. Specialised governmental enterprises perform specialised credit functions directed in particular to housing, education, and agriculture (Spulber 1995).

The main recipient of the largest and most complex economic aid program in the USA is agriculture. For over half a century farming has been the object of wide-ranging support and benevolent supervision by the federal government in regard to price setting, soil conversion payments, acreage allotments via direct payment, crop insurance, marketing quotas, credits, and subsidies. In 1990, 73 per cent of all farm debt had some form of federal support (Spulber 1995).

The US government, however, assumed a relatively small role in the provision of credit to business. Federal credit is focused on export financing and small business. In 1990, it amounted to only 2 per cent of business liabilities. The specialised financial institutions are the Export-Import Bank, the Overseas Private Investment Corporation, and the Small Business Administration (Spulber 1995). However, there are exceptional cases. In 1932, President Herbert Hoover created the Reconstruction Finance Corporation (RFC),

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7 President Bush's science adviser
for the purpose of targeting government loans to businesses and industries in need of capital. The RFC was a national development bank – something at the time common to other nations but very, very foreign to Americans. Between 1932 and 1935 it distributed approximately $2 billion in loans to businesses unable to obtain credit in the private sector (Bingham 1998:36).

Other cases include federal government loans or insurance funds to bail-out certain firms or even an entire industry in distress. The most notorious bail-out occurred in 1979, involving the rescue of Chrysler, with a mixed $4 billion government loan and loan-guarantee package approved by Congress, in order to avoid massive job losses and a decline in both federal and state taxes (Spulber 1995). An even more complex rescue operation concerned the entire Savings and Loans (S&L) industry. It involved the forced liquidation of a number of insolvent S&Ls and the merger of some weak S&Ls with healthier firms (Thurow, 1992:18). Other rescue operations were the establishment of a new Savings Association Fund and the creation of a new institution, the Resolution Trust Corporation, charged with solving as much as possible the fundamental problems of this industry (Spulber 1995). The Resolution Trust Corporation, has become by far the largest owner of property in USA. To these totals must be added the large sums that are needed by the Pension Benefit Guaranty Corporation, the government fund that guarantees pension funds. Pension funds hold 30 per cent of the junk bonds issued, and the bankruptcies that are flowing from the financial excesses in the 1980s requires billions in government aid to ensure that the private pensions that have been promised are in fact paid. The pension funds of the airlines that were already in bankruptcy by mid-1991 also require more than two billion taxpayer dollars (Thurow 1992:18).

The same problems afflicted the insurance sector. Here state governments have given the necessary guarantees. Forty-seven states guarantee life-insurance policies, most up to $300,000 per person. In early 1991 the state of California and New York took over the management of Executive Life, a company with thirteen billion dollars in assets, two thirds of which were invested in junk bonds. To prevent the feared bankruptcy of an out-of-state holding company from bringing down an in-state insurance subsidiary, Massachusetts stepped in to start running an insurance company that had not yet gone broke (Thurow 1992:19).
Activities involving the government as a large buyer in various market, as well as a producer and an owner of certain business enterprises

In this area, the US government exercises complex and multi-dimensional influences on business as a whole, both as the massive buyer of a unique mix of military and civilian goods and as the owner of various types of business enterprises. Through its vast procurement outlays, the US government wields powerful influence, exercising a buyer’s monopoly power in a variety of markets. In roughly one third of its total purchases, that is those earmarked for defense and space programs, the federal government, by its selection of contractors, controls entry into and exit from the markets, determines the growth patterns of the firms participating, and imposes its way of doing business. Furthermore, the military imposes on privately-operated, defense-oriented industries its specific choices concerning innovation and technological change. In the other two thirds of its purchases, relations between the government buyers and the sellers are as a rule not as close. Until the mid 1980s, both military buyers and the corresponding sellers operated in a peculiar negotiation framework. Strong ties developed between the US government and its major contractors, to the point where the government could feel obligated to back a contractor in difficulty while lacking effective control over the contractor’s management. In the mid 1980s, this close cooperation was shattered by allegations of price abuses. As a result, congressional micro-management of the procurement process grew (Spulber 1995).

As the owner of business enterprises, the US federal government has been engaged in the fields of energy, electricity and gas, transportation, and communication. Including Government Sponsored Enterprises (involved in finance and insurance), these comprise at least 50 major federal enterprises, employing about a million people and generating annual revenues of some $25 billion. Their share in gross fixed capital formation is in the order of 4.4 percent (Spulber 1995).

The Development of Science and Technology

Another way in which the US government has exerted a decisive influence on the private sector operations is through the provision of federal funds devoted to R&D. Divided by

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8 The negotiation was based on ‘allowable costs’ and the final selection of the weapons producers was determined, first of all, by past performance and technical capability. Formal advertising was the only form of competition required in the process. No marketing or distribution facilities entered into account (Spulber 1995:57)
budget function, these funds have primarily concerned national defense, health, space research and technology, general science, energy, natural resources and the environment, transportation, and agriculture. Total national spending on R&D in real terms has increased from less than $20 billion in 1953 to over $113 billion in 1990. The federal government accounted for about 46 per cent of the total R&D outlays, 49 per cent by industry and the remaining by all others forms. In terms of the structure of the federal government outlays, in 1953, the defense related share stood at 89 per cent of the total federal government outlays. By 1979, its share was reduced to 53 per cent. However, under the Reagan-Bush administration, due to their defense build-up, the share of the defense-related outlays increased, reaching around 61 per cent in 1990 (Spulber 1995:59).

Federal influences in science and technology through the 1980s involved mainly interaction among defense-oriented federal R&D expenditures, along with support for the transfer of some of the results to civilian use. These activities were carried out through certain government agencies such as Defense Advanced Projects Agency (DARPA), the national Aeronautics and Space Administration, the National Science Foundation and the National Institute of Standards and Technology. Further, the government extended support of generic applied research through the formation of R&D consortia (involving government, industries, and university laboratories), as well as through more informal methods of government-industry collaboration. Federal support was also extended through DARPA to Sematech to focus on the realisation of a new generation of semiconductors and other microelectronics tools and processes. Until the 1990s, the government-supported civilian-oriented research with generic applications had advanced slowly and mostly under Congress’ prodding. The funds allocated to The National Institute of Standards and Technology amounted to only one third of 1 per cent of the federal R&D budget or about one fifth of the allocation of DARPA (Spulber 1995:60-1).

**Foreign Competition**

A number of international features also led US government policy in directions that impact on private enterprises. In the immediate post-war years, American security and economic interest coincided. This allowed the USA to construct an open international economic system. In those years, American business was pre-eminent in international
markets. As firms became international, they provided political support for free trade policies. However, according to Tyson and Zysman (1983:18), even then the commitment to free market was not unlimited. In those sectors where free trade occasionally proved politically troublesome, American leadership made exceptions to its own principles. In recent years, the number of sectors in which American industry faces intense foreign competition in its home market has grown. Textiles and apparel was the first. These sectors were clamouring for protection in the 1950s even when their share in the market was still small. They have now been joined by segments of the steel, auto, footwear, and electronics industries. Tyson and Zysman (1983:18-9) is of the opinion that if US world market positions in these and other sectors are not revitalised, it will be difficult for the USA to maintain its commitment to an open international trading system. The system is being threatened by domestic US political pressures, which want to insulate US markets in response to the competitive difficulties of important and politically powerful industries.

Historically, political resistance to industrial change in the USA has been hard to organise because of regional economic competition. But in recent years conditions have changed. Declines in US international competitiveness in certain sectors have made industrial development a national rather than regional issue. Firms adversely affected by international competition have turned to the federal government for support and protection. Political pressure for a more active involvement of the federal government in the detailed development of individual industries has grown. This pressure has produced growing interest in industrial policy and an active trade policy (Tyson, 1993).

Trade policy

In the period culminating with the Smoot-Hawley tariff in 1934, the terms of the national policy debate assumed the right to protection and required that individual instances of free trade be justified on an exceptional basis. The post-World War II trade discussion reversed the framework of the Depression years. Following the period of institution-building, the American trade debate become one of general support for free trade, with justification required for particular protectionist exceptions. Both American strategic and economic positions shifted in the years that intervened between Smoot-Hawley and
Bretton Woods. An international business constituency favouring free trade emerged. The free trade thrust itself culminated in the Kennedy Round of Tariff negotiations. Substantial reductions in external barriers were achieved (Tyson and Zysman 1983:55-6).

Overall, the general thrust of American trade policy since the war has been in favour of free trade. Yet exceptions are more numerous than one would have expected from the rhetoric. As shown in table 3.1, promotion of American interests abroad came in the form of general rules to encourage the expansion of international trade, which was thought to favour American companies. Importantly, alongside international agreements to free the flow of goods were policies to support multinationalisation of American business. More precisely, American rules were structure to favour direct foreign investment. Two forms of support were crucial: first, the tax laws tended to encourage overseas investment rather than domestic adjustment; and second, the trade laws were arranged to allow American firms to invest overseas, producing part of their product at these offshore locations, and to be taxed only on the value added abroad when the goods re-entered the American market. A third element of support for direct foreign investment was provided by US aid programs that helped the developing countries establish export platforms (Tyson and Zysman 1983:56).

**Evaluation of state-market Relations in the USA**

The nature of the relationship between government and big business in the USA is difficult to specify in any absolute sense (McCraw 1984:44). But measured comparatively against the same relationship in other democratic capitalist countries, it has been generally regarded as an adversarial one (McCraw 1984; Vogel 1987; Stevens *et al.* 1988; Kettl 1993; Savoie 1994; Kutler 1994, Mc Quaid 1994). The USA may be the only nation that enacted regulatory legislature directed specially against big business at a very early date (McCraw 1994:44).

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9 Industrial development has usually meant competition between domestic regions; one region's loss has been another region's gain (Tyson and Zysman 1983:19).
<table>
<thead>
<tr>
<th>Policy</th>
<th>Textiles</th>
<th>Apparel</th>
<th>Footwear</th>
<th>Steel</th>
<th>Autos</th>
<th>TV</th>
<th>Integrated Circuits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Protection</strong></td>
<td>Extensive, ending with multifiber</td>
<td>Extensive</td>
<td>Extensive, mostly OMAs</td>
<td>Trigger Pricing, aimed first at Japan, then at Europe</td>
<td>No</td>
<td>Limited to 807 clauses</td>
<td>807, but not important</td>
</tr>
<tr>
<td><strong>Direct Foreign Investment</strong></td>
<td>Yes; crucial to pattern of adjustment in USA markets</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Promotion of trade aboard</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Internal Financial protection</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Chrysler Loan Act</td>
<td>No</td>
</tr>
<tr>
<td><strong>Intervention to promote domestic industry</strong></td>
<td>Nominal</td>
<td>Nominal</td>
<td>Nominal</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Military until 1970 and since 1980; military market proportionally small now</td>
</tr>
</tbody>
</table>

In the USA, big business was seen as the threat to liberty. Meanwhile, from the business perspective, the government was seen as the threat (McCraw 1984:46). World War II temporarily interrupted some of the issues affecting business-government relations in the USA. In the modern mixed economy, business-government relations in the USA became far more complex. The proliferation of huge government contracts blurred the issues even more than ever seen before (McCraw 1984:48).

Vogel (1987:108) pointed out that prior to the mid-1960s, the regulation of corporate social conduct was handled primarily at the state level and for the most part it was relatively cooperative. It only became relatively adversarial in the mid-60s, and the level of conflict has diminished considerably since the late 1970s. The close quasi-corporatist ties between defence contractors and the Department of Defense, farmers and the Department of Agriculture, real estate developers and builders and the Department of Housing, and bio-engineering firms and NIH are the norm, not the exception, of business-government relations in the USA (Vogel 1987:108).

According to Lodge (1990), whatever the attitude of American corporate executives may be about the role of state and federal governments in the USA and about the most desirable relationships between business and government, there has been a dramatic increase in the time, money, and effort which business is investing in managing those relationships. For example, by 1987 there were 23,011 lobbyists registered with the Secretary of the Senate compared to only 365 in 1961. During the same period the number of lawyers listed with the District of Columbia Bar Association climbed from 12,564 to 46,000. Some 1,300 corporations were listed as maintaining Washington offices in 1986 compared to only 100 in 1968 and the number of trade associations headquarters had tripled to 3,500 with a workforce of about 80,000 (Smith, 1988:252-3). At the same time business, labour and other interest groups have become more aggressively involved in the funding of political campaigns. In his book The Power Game, Hendrick Smith (1988:32) recorded ‘the skyrocketing growth of corporate

10 For examples, Don Campbell, assistant to Senator Donald Riegle (D., Mich.) boasted, “In the eyes of the auto companies, government is neither capable nor desirable as a partner in business”. Robert Lighthizer, a former deputy in the Reagan administration’s Office of the United States Trade Representative (USTR), complained, “There really is no United States trade strategy. We simply lurch from crisis to crisis”. Howard Pester, a United Autoworkers lobbyist, said, “The administration is willing to let the marketplace determine whether there is an auto industry and if so, what size and what level” (as cited in Lodge 1990:33).
political action committees' (PACs) to raise money and contribute to a candidate of their choice. In 1974, there were 89 corporate PACs. Ten years later, they numbered 1,682. Overall PACs, increased their donations from $8.5 million in 1974 to $132.2 million in 1986.

Corporate public relations programs were relatively rare prior to 1970; they are now becoming an important component of virtually every effort on the part of the business community to influence public policy. The relative degree of political power exercised by business at both the federal and state levels increased significantly between 1977 and 1985. Business became much more successful both at shaping the political agenda and in influencing the outcomes of a variety of particular public policies, particularly in the areas of tax policy and government regulation (Vogel 1987:110-1).

Moreover, business-government relations in the USA have always been relatively cooperative at the state level. Although a few states did pursue anti-growth policies during the 1970s, more recently virtually all state governments have become much more active in seeking to improve the performance of their economies. The emergence of Silicon Valley in northern California has created a model of government–business-university cooperation that other states are now trying to duplicate. Every state now has some form of economic development agency; in thirty of the fifty states, this agency has cabinet-level status and in several states its budget exceeds $100 million (Vogel 1987:108).

In the US economy, the private sector is the primary actor in development. But the public sector also has a vital role to play if the economy is to reach its full potential (Wilson 1993:4). By any index, the scope of government intervention in the economy has increased enormously over the years. The American government has become more active in both regulating and promoting business than at any time in its history (Vogel 1987:110).

**Public-private partnerships**

Americans have long had a reverence for private markets to match their dislike for public power (Kettl 1993:1). However, according to Kettl (1993:3-4) whether the aim is to reduce government or just to make it work better, the fundamental paradox in the calls
to substitute the market for government control is that American government has long been pursuing public-private partnerships, for pragmatic reasons quite apart from the rhetoric. In fact, every major policy initiative launched by the federal government since World War II – including medicare and medicaid, environmental clean-up and restoration, anti-poverty programs and job training, interstate highways and sewage treatment plants – has been managed through public-private partnerships (Kettl 1993:4).

Earlier, Vogel (1987:93) pointed out that the USA makes more extensive use of private-public partnerships, both at the local and federal level, than other capitalist nations. For example, American defense contractors, in spite of being privately owned, function as much as an instrument of state policy as any nationalised firm in either Western Europe or Japan. The USA also relies far more heavily on the tax code as a means of shaping the direction of private sector investment than any other nation except Japan. And instead of nationalisation, USA has traditionally employed government regulation as a means of directing the development of particular sectors.

According to Kettl (1993:9), since World War II, the USA’s arm’s-length relationship between buyers and sellers had been replaced by a cooperative partnership. Kettl (1993) saw this as a permanent shift founded in pragmatism. In Kettl’s (1993) view, the most dramatic example of public-private partnerships in the USA is the nation’s space program. It has been a collaborative venture from its beginning. Other areas where public-private partnership can be found are agriculture policy, social policy, health policy, environmental policy, bailouts, and support services. The government began to rely on the private sector for new technology concepts and ideas as well as for the development and production of advanced goods. In fact, the government’s reliance on the private sector, with the blurring of public-private boundaries that accompanies it, has become the dominant administrative pattern of postwar policy. Before the war, nearly all R&D financed by the federal government was conducted through governmental institutions. By the early 1960s, the non-federal institutions conducted 80 per cent of the R&D (Kettl 1993:9).

Recently, the Clinton-Gore document, Technology for America’s Economic Growth, indicated that there is a need to forge ‘closer working partnerships’ (CWPs) among the federal government, the state governments, and industry, to strengthen the country’s
competitiveness, to create jobs, and to stimulate and sustain long-term economic growth. Examples of CWPs were the Concurrent Supercomputer Consortium, focused on photovoltaic technology; the USA Display Consortium, involving ARPA-funded group of industries in the building of new factories and the development of new technology such as the thin screens used in laptop computers, video games, and jetliners’ control panel displays; and US Council for Automotive Research, an umbrella organisation that since 1992 has overseen 10 formal consortia guiding cooperative R&D activities between General Motors, Ford, and Chrysler, aiming to develop technologies for a new generation of vehicles with a view of establishing technological leadership and competitiveness in the US automobile industry (Spulber 1995:216-7).

Among such arrangements the Clinton-Gore document propounds the creation of (1) cost-sharing partnerships between all federal R&D agencies, including the nation’s 726 federal laboratories, so that ‘federal investments can be managed to benefit both government’s needs and the needs of US businesses; (2) regional technology alliances designed to promote the commercialisation and the application of critical technologies, by helping the firms and research institutions clustered in a particular region to exchange information, share and develop technology, and develop new products and markets; and (3) so-called agile manufacturing programs, that is, the forging of allegedly temporary networks of complementary firms aiming to ‘exploit fast-changing market opportunities’(Spulber 1995:217).

In summary, this section has shown that the state and market have had important roles in the US development process. However, the market has had a much wider role than the state. Examples in this section have also shown that the US government intervenes in markets only when it has perceived the market as malfunctioning or producing unacceptable results. Otherwise, the market is given as much latitude as possible to function efficiently, free from undue interference from the government.

The Characteristic of State Intervention in Japan

Historically, Japan modernised earlier than any other non-western nation-state. The unparalleled growth of the nation’s economy from the early 1950s through the early 1970s was later matched by an exceptional capacity to continue expanding world market
shares while holding down inflation and unemployment at home (Pempel 1982). The country’s success became so noteworthy that, until recently, some analysts had been wont to describe Japan with such laudatory labels as ‘number one’ (Vogel 1979), or ‘Asia’s New Giant’ (Patrick and Rosovsky 1976).

Revisionists economic commentators see the Japanese economy as being based on principles and having objectives, structures, and operating practices that deviate very substantially from the neo-classical Western capitalist model (Prestowitz 1993:viii). The traditionalists on the other hand, insist that Japan’s economy is essentially in the neo-classical Western mould, albeit with a few distinctively Japanese features (Prestowitz 1993:xi-xii). The Japanese themselves have long emphatically asserted that their post-World War II ‘economic miracle’ has been based on rejection of the Western model and on the application of specifically Japanese precepts and methods (Prestowitz 1993:xiv).

The post-war Japanese employers attributed their success to what they call their ‘three sacred treasures’ - the lifetime employment system, the seniority wage system, and enterprise unionism. This argument may be true, but according to Chalmers Johnson (1982), they were not the only reasons. He listed other factors such as the personal savings system, the ‘descent from heaven’ (amakudari) practices, the structure of industrial grouping - *keiretsu*, the ‘dual economy’, the tax system, the extremely low degree of influence exercised over companies by shareholders, the hundred-odd ‘public policy’, and perhaps, most important of all, the government-controlled financial institutions, particularly the Japan Development Bank, as having contributed to Japanese economic achievements (Johnson 1982:11-2).

**The Need for Government Intervention in Japan**

According to Okimoto (1989:1), the term ‘Japan Incorporated’ is often used to characterise Japan’s political economy. This term conjures up images of a big and ubiquitous state, instinctively distrustful of *laissez-faire* capitalism and reliant on

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12 Refer to the movement of retired bureaucrats from the ministries into senior management positions in private enterprises. Nowadays, this practice is not so well regarded as it was before.
13 Refer to the oligopolistic organisation of each industry into conglomerates at the wholesale and retail level.
14 Together with the elaborate structure of subcontracting it generates.
centralised planning and administrative guidance for control. However, according to Pempel (1982:42), the Japanese development approach is not something new that developed during the post-war period. It has its origins in Japanese political economic history. In the early years of the Meiji era (1868-1912), Japan was governed by a political elite convinced that rapid, state-directed industrialisation was the key to national survival, and that ultimately this would provide the basis on which to build an internationally powerful Japan. Moreover, according to Allen (1979:18-9), as the number of private entrepreneurs familiar with Western technology and commercial practices were few, the state was obliged to take the lead. Besides, the new government was faced with numerous problems that demanded an immediate solution. It was problems such as provision of jobs for the functionless samurai; the supply of certain goods for its own military and administrative needs; and import-saving at a time when its reserves of gold and silver were exiguous; that compelled this action. State intervention, according to Crawcour (1965:44) was facilitated by the existence of established channels of economic control, which dated from the Tokugawa period (1603-1868), and ‘made the Japanese economy more amenable than most to official direction and technical guidance’.

In addition, World War II had destroyed Japan’s productive capacity and had left it much further behind the victorious powers than it had been at any time since World War I. Due to the post-war context of a defeated military and shortages of food and consumer goods, the Japanese government, business leaders and general public reached a consensus on setting economic prosperity as the most important objective to pursue (Allen 1979:21). High priority was given to growth15 (Patrick and Rosovsky 1976:43) and catching up with the world’s industrial leaders again (Pempel 1982:53). However, the Japanese government did not think that such a transformation should be completely dictated by the market and therefore reverted to the government-guided industrialisation approach in order to reconstruct the Japanese economy and to achieve an industrialisation with strong emphasis on heavy and high technology industries (Okuno-Fujiwara 1997:402). Other reasons such as the scarcity of private capital, the traditional

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15 By the late 1950s Japanese political leaders came to recognise that rapid economic growth solved many problems. Growth led to better lives for society because it not only created good jobs but also made the adjustment process much easier for declining industries. This in turn made alternative jobs more readily available. Growth also enhanced Japan’s international power and prestige (Patrick and Rosovsky 1976:44).
and prescribed conservatism of the merchants\textsuperscript{16}, the mobility of its labour market\textsuperscript{17}, and the less developed capital and equity markets, also meant that growth would have to be instigated by the government if Japan was to respond to the imperative of catching up with the West (Boyd 1987; Okimoto 1989).

**Forms of State Intervention in Japan**

Variations in state intervention can be attributed, in part, to differences in the way the markets in various countries are organised, as well as differences in ideology. In Japan, government intervention was carried out by means of indicative planning and industrial policy.

**Indicative Planning**

Soon after World War II, the Japanese government began to systematise its general policy of development by issuing medium-term or long-term plans for the economy. An official body, now known as the Economic Planning Agency, was made responsible for drawing up such plans. The plans contained forecasts of the gross national product, the output of different sectors of the economy, investment, savings, exports and imports and other items in the balance of payments. The figures were supposed to be a guide for the private sector, rather than prescriptions, but government, in the exercise of its various instruments of control or persuasion, gave heed to the content of the plans. For the public sector, the plans did not become targets until the government departments concerned assented to them and even then this assent did not necessarily mean that the departments committed themselves to the planned expenditure (Allen 1979:32-3).

**Industrial Policy in Japan**

It is generally accepted among scholars in the field, that the government in Japan pursued a forceful and aggressive industrial policy to change the unsatisfactory economic situation faced by that country (Singh 1994:41). Sakakibara (1993:28) however, argued that there was no consistent targeting or grand design of industrial policy by the Japanese government. What the Japanese government did was to select key industries as

\textsuperscript{16} Exacerbated by their ignorance of ‘technology and production’, of foreign tastes and markets, of shipping and landing and warehouse charges outside Japan, of international financial practices (Boyd 1987:86).

\textsuperscript{17} Based on the norm of career-long employment, the Japanese labour market is less mobile and more seniority-oriented, with greater emphasis placed on in-company training (Okimoto 1989).
investment and loan recipients because of their vigorous, long-term demand for funds and their relative creditworthiness, responding to market demands rather than creating them.

Industrial policy in Japan had its heyday in the 1950s and early 1960s. In those days, a typical policy came in three steps. First, those industries with a high probability of technological advance and demand expansion were identified. Second, several measures were employed to promote these industries. Finally, all firms in an industry shared information concerning new business opportunities, and a strong desire was generated among private firms to take advantage of those policy measures before other firms could do the same (Okuno-Fujiwara 1997:398-9). Japanese industrial policy included measures such as (1) establishing sectoral priorities; (2) mobilising resources to hasten their development; (3) protecting infant industries; (4) issuing guidance on investment levels and keeping the cost of capital low; (5) organising rationalisation and anti-recession cartels; (6) allocating foreign exchange credits and manipulating the foreign exchange rate so as to keep the value of the yen low\(^\text{18}\); (7) regulating technology flows in and out of Japan; (8) controlling foreign direct investment; and (9) issuing 'administrative guidance' (gyosei shido)\(^\text{19}\) (Boyd 1987; Okimoto 1989; Okuno-Fujiwara 1997).

The instruments of industrial policy were also designed to treat problems that emerged from special market conditions in Japan. The vulnerability of highly leveraged companies to fluctuations in business cycles and the dependence of subsidiary and subcontracting networks on parent corporations, for example, have prompted the Ministry of International Trade and Industry (MITI) to administer industrial policies (Okimoto 1989:17).

The Japanese government also used the industrial policy instruments to solve the problem of inefficient and declining industries. As pointed out by Trezise and Suzuki (1976) the Japanese government’s response to this problem has been a mixture of protection from low-priced imports, other forms of direct and indirect subsidy, and

\(^\text{18}\) Thus keeping the price of Japan's exports artificially low.

\(^\text{19}\) Through 'administrative guidance', a ministry realised its policy objectives through the subject's 'voluntary' cooperation. Because of the close and long-term relationship between the agency in charge and the industry association in question, information is exchanged on a daily basis, and administrative and other related activities are implemented behind the scenes.
almost as the last resort, adjustment assistance in helping labour and capital move out. For example, from the late 1950s coal was no longer competitive with cheap imported oil; after a period of trying unsuccessfully to protect coal, the government subsidised the closing of inefficient mines, the transfer and retraining of redundant workers, and the enhanced productivity of the remaining facilities (Patrick and Rosovsky 1976:46).

As for the Japanese agriculture sector, the transfer of labour out of agriculture has been rapid, and the workers that remain are older and more difficult to absorb into industrial activity. For both social and political reasons, however, the Japanese government, as in the case of Western Europe, has heavily protected agriculture from import competition, enabling farmers to sell their output at high and rising prices. Government policy has, if anything, served to keep resources in agriculture rather than assisting directly in the long-run process of shifting these resources to more efficient uses elsewhere (Patrick and Rosovsky 1976:46).

Table 3.2 outlines some of the major industrial policies followed by the Japanese government during the 1950s and 1960s, an era of unprecedented catch-up growth. The table indicates that the scope of Japanese actions far exceeded that of the US government’s in terms of initiatives taken to structure the market. The emphasis was placed on building a sturdy infrastructure of heavy industry and on making the most efficient use of scarce resources.

Table 3.2: *Postwar Japanese Policies for Industrial Catch-up, 1955-73*

<table>
<thead>
<tr>
<th>Overall Direction and Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Long term visions for Japan’s industrial economy</em></td>
</tr>
<tr>
<td><em>Special development laws for priority industries</em></td>
</tr>
<tr>
<td><em>Annual delineation of goals for each industry, based on consensus between MITI and Industry</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industry promotion measures</th>
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<tbody>
<tr>
<td><em>Tax Incentives</em></td>
</tr>
<tr>
<td>Accelerated depreciation allowances</td>
</tr>
<tr>
<td>Research and development</td>
</tr>
<tr>
<td><em>Non-taxable reserve funds for retirement compensation and special contingencies</em></td>
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<thead>
<tr>
<th>Financing</th>
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Mediation of trade friction
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*Raw materials procurement and stockpiling
Foreign aid
Multilateral activities
Participation in international organisations
International capital flows
Exchange rates
Overseas investments

Note: * Differences in kind or degree from US government policies

Administrative Guidance

Administrative guidance is defined as an administrator's action without any coercive legal effect, which encourages related parties to act in a specific way in order to realise some administrative aims (Wakiyama 1987:211). It typifies MITI's industrial policy, particularly with regard to its flexible and advisory nature as well as to the necessity of consensus-formation. It is often conducted behind the scenes in the form of a series of delicate actions. Detailed information is seldom made available to outside observers. It is used because other policy tools are not available (Wakiyama 1987:221).

Analysts (Johnson 1982; Yanamura 1986; Wakiyama 1987; Boyd 1987; Parker 1995; Bingham 1998) have attributed the Japanese industrial achievements to administrative guidance. Boyd (1987:62) said administrative guidance is the critical means that enables MITI to work the Japanese economy by remote control. The role of MITI's administrative guidance changed form over time. In the 1950s MITI was responsible for the distribution of scarce funds. The coal, steel, electric power and shipping industries were assigned a high priority for investment in new equipment. During the 1960s MITI allocated funds for the rationalisation and modernisation of heavy industries and chemical industry. Export promotion and import restriction were the primary policies for automobile and household electrical appliance industries. Domestic industries were protected not only by trade restrictions such as tariffs and quotas, but also through restrictions on foreign investment by the use of foreign exchange controls and foreign investment restrictions (Parker 1995). Now MITI control of the industrial structure is applied via trade associations and industry-wide coordinating groups. The concerns of these groups have included deciding on the rate of expansion of capacity and dividing the increments among actual and would-be competing firms (Caves and Uekusa 1976:488-9).

Administrative guidance for long-term policy aims is exemplified by (a) capital investment adjustment to achieve future supply-demand balance or economies of scale; (b) protection of small firms from competition with big firms; and (c) prevention of sudden trade frictions with major trade partners. However, according to Wakiyama (1987) such long-term policy objectives are successful only after persistent efforts.
Financial Assistance

Both macro-economic policy and financial regulation have been characterised as instruments of industrial policy. The interdependence of bank and firm within Keiretsu, the acceptance by both of low rates of return on equity investment, the official policy of keeping interest rates low, a taxation policy which contributed to the highest marginal propensity to save in the world (Johnson 1982; Boyd 1987; Parker 1995) and a long-standing insulation of Japan from the international capital market, combined to keep the cost of capital low and afforded Japanese enterprises a comparative advantage in competitive international markets (Boyd 1987:84).

The Japanese Government’s intervention in capital formation during the postwar period was largely due to the break-up of the zaibatsu during the Occupation period. This measure, according to Sakakibara (1993), had virtually eradicated all of Japan’s genuine capitalism. Companies had to rely on a regulated financial system consisting mainly of city banks, long-term credit banks, and public financial institutions for their plant and equipment investments. Therefore, the state was needed to act as guarantor or mediator, and to wield some influence in this process, using finance, subsidies, and taxation as leverage (Sakakibara 1993:9). Large enterprises obtained their capital through loans from city banks, which were in turn over-loaned and therefore dependent on the guarantees of the Bank of Japan, which was itself essentially an operating arm of the Ministry of Finance (Johnson 1982:10).

Apart from being a mediator or guarantor, government also acted as the provider of funds. Government sources of funds were particularly important in the early phase of post-war development. In addition to the regulatory and institutional arrangements such as the postal bank, the government created special public sector banks to promote particular types of projects (Allen 1979; Parker 1995). For example, in 1953, the Japanese Development Bank provided ¥83 billion to industry and this accounted for 22

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20 Keiretsu membership strengthens many of the advantages of vertical integration. As a result of stable shareholding arrangements between group members and with other institutions, approximately 60 per cent to 80 per cent of the shares of group members are never traded. As a consequence, Japanese managers need not worry as much as their American counterparts about takeovers or short-term fluctuations in stock prices. Cross-shareholding also limits the ability of foreigners to acquire Japanese firms as a strategy for entering the Japanese market (Tyson 1993:56)

21 Zaibatsu is an interlocking industrial-banking organisation of top enterprises dominated by family holdings.
per cent of the industrial capital raised. By 1961 Japan Development Bank loans of ¥86 million represented only 5 per cent of the industrial capital raised, but other government banks (¥185 billion) and special government accounts (¥99 billion) increased the share of industrial capital raised from public financial organs to 20 per cent in total (Parker 1995:97).

In the 1960s the government stimulated heavy investment in plant and equipment with a sixfold expansion of the Ministry of Finance’s Fiscal Investment and Loans Program. These funds were typically allocated through the Japanese Development Bank as low interest loans to firms, creating new capacity in emerging industries. Some of these funds were also used to support R&D to add to the knowledge base for subsequent application to production. The Japanese government also used taxation and depreciation policies to stimulate private investment in particular industries. Accelerated depreciation rates (2-3 years) were introduced for key industries. Another measure was the low interest rate policy of government initiated by the Ikeda administration in 1965 (Parker 1995:97).

Projects that received government funds usually attracted substantial private sector funds as well. Over time, the private sector became an increasingly important source of funds, but the allocation of these funds remained a function of both private and public decisions (Parker 1995:97). This pattern proved particularly effective in the mid-1980s when the Japanese firms responded to endaka, or the high yen, with renewed investment to lower production costs with the latest and most efficient technology. In 1987 Japanese industry set a new record by investing the equivalent of 19.5 per cent of Japan’s GNP in new plant and equipment. In 1990 Japanese investment exceeded 25 per cent of GNP, a record for any OECD country (Parker 1995:98). This system of high savings and investment levels has been achieved through strong linkages among government ministries, banks and manufacturing firms (Allen 1979; Parker 1995).

Cartels and Mergers

Cartels have been a persistent feature of Japan’s industrial policy. They were introduced during recession and were ‘legalised’ by the 1953 Amendment of the Anti-Monopoly Act. The industry associations collaborate closely with MITI in the organisation of such cartels, which are geared to such purposes as (1) long term rationalisation of production;
(2) orderly reduction of excess capacity; (3) promotion of vertical integration; (4) short-term production allocation; and (5) export price floors during trade crises (Boyd 1987:81-2). The number of legal cartels rose from 162 in 1955 to around 1000 in the late 1960s and early 1970s. The figures have fallen sharply since then, but MITI continues to rely on them to stabilise business conditions for certain industries, particularly small and medium-sized enterprises (Okimoto 1989:7-8).

Cartels that were used to promote new technologies have not been challenged in the courts, even when they do not benefit from a temporary enabling law such as the Law Concerning Temporary Measures for the Promotion of the Electronics Industry, 1957. It was on this basis, for example that, at MITI’s prompting, the Japan Electronic Computer Corporation (JECC) was established by seven companies at the forefront of Japan’s fledgling computer industry. JECC was set up as a rental company, which purchased computers from the founding companies (Fujitsu, Toshiba, Mitsubishi, Oki, Hitachi, and an NEC-Toshiba sales company) and rented them to Japanese consumers. It was a beneficiary of government financial, tax, and moral support. This meant that it could borrow from the Japan Development Bank and received an implicit guarantee of its loans from city banks. JECC relieved the manufacturers of both a substantial investment and a risky involvement in a new and competitive rental market. JECC afforded the Japanese computer industry valuable subsidies – for example, its leasing arrangements undercut those of IBM (Boyd 1987:83).

A merger was encouraged to enable Japanese firms to compete against giant foreign producers. MITI took the lead in pushing for structural ‘rationalisation’ in the form of mergers among various domestic competitors, especially in the Steel and Automobile industries, so as to increase returns to scale and prepare Japanese firms to take on the foreign Goliaths. For example, the merger of two large manufacturers, Fuji and Yawata, into the world’s biggest producer, Nippon Steel, was the most spectacular example of Japan’s industrial policy response to the pressures of trade and investment liberalisation. Except for Nippon Steel, however, MITI’s efforts at structural rationalisation met with limited success. Not only did MITI fail to anticipate deep-seated private sector resistance, it also underestimated industry’s capacity to compete, even in a liberalised environment (Okimoto 1989:25).
International Trade

Not only did Japanese government intervene in the industries internal structures, it also acted directly on trade issues. During the 1950s and early 1960s the weakness of Japan’s international financial position and the frequent recurrence of crises in its balance of payments persuaded the Japanese government to maintain strict controls over foreign transactions. At that time, imports were subject to licensing and the central authorities supervised all foreign payments. These controls were associated with various devices for encouraging exports. For instance, under a ‘link’ system, import licenses for particular materials were given on condition that the licensee exported a specified amount of manufactured goods. Various privileges were bestowed on firms that were parties to approved arrangements for the import of foreign technology. Tax discrimination was exercised in favour of exports, and export bills were discounted at low rates of interest through the Bank of Japan. The official Export-Import Bank also provided loans to exporters on favourable terms (Allen 1979).

Studies by Balassa and Nolan (1988), and Lawrence (1987 and 1991), to name a few, confirmed what the world business community had contended for years. The Japanese market was, and arguably still is, significantly more closed to foreign trade and investment than the markets of most of the other advanced industrial nations. However, traditional trade barriers are not the source of this problem because Japan has low tariffs and few import quotas. According to Okimoto (1989), when the Japan economy was fully recovered from the war and growing faster than any other industrial country, foreign governments demanded that the walls of infant industry protection be brought down. In stages, the Japanese complied, but at a sluggish pace and often in ways that merely shifted the barriers from formal (tariffs and quotas) to informal obstructions (customs and inspection red tape, national standards, and buy-Japanese preferences) (Okimoto 1989:25; Allen 1979). According to Tyson (1993) the most important impediments to Japanese market are structural in nature. Those structural barriers are rooted in the unique character of Japanese business organisations and their distinctive relationships with one another and with the Japanese government (Johnson 1982; Dore 1986; Yanamura 1986; Prestowitz 1988). Within the business community, they include a
high degree of vertical integration\^{23} in many large firms and the existence of huge interlinked industrial groups or keiretsu (Tyson 1993:55-6).

**Research and Development and Technology**

Highly integrated relationships in which the state is the hub of a wheel are also vital in terms of R&D. Here government’s role was, however, less direct. Even though the Japanese government increased emphasis on R&D, its contribution, in terms of funding, has been less than the contribution made by the private sector. For example, in 1989, Japan’s industry contributed 72 per cent of the total R&D spending compared to 19 per cent contributed by the government and 9 per cent by higher education and other sources. In fact, according to Spulber (1995) it was not in Japan but in the USA that the relative share of the government in total R&D spending was the larger. In the USA in the same year, the share of industry was 51 per cent; of government, 45 per cent; and of higher education and other sources, 4 per cent. Note that in the then prevailing conditions of the cold war, the US spent a significantly lower proportion of its GNP on non-defense R&D than Japan and West Germany (Spulber 1995:86).

Nevertheless, the government role in promoting R&D in Japan has been significant. Private investment in R&D has been supported by government initiatives. MITI often assumed a high profile role in the promotion of R&D projects on advanced technology where the designation of a ‘national project’ brought together researchers from competing firms to work cooperatively on general technologies which were later applied in the participating manufacturing firms on a competitive basis. An example of this industry-wide approach to R&D was the super large-scale integrated circuit project. Overall, the role of government then has been to facilitate the establishment of the project with private firms paying most of the cost (Parker 1995:99-100).

\^{22} In 1963, Japan dismantled its restrictions over current transactions. Later, having acceded to the demand that Japan should adopt Article 11 status under General Agreement on Trade and Tariffs (GATT), Japan steadily reduced its quantitative controls (Allen 1979).

\^{23} Vertical integration gives Japanese companies several advantages: the ability to cross-subsidise product lines, using profits from strong divisions to support weak ones or to start new ones; the ability to rely on internal demand when external markets falter; the ability to tailor-make equipment for downstream uses; and the ability to maintain secure supplies of critical inputs. Group membership also provides member firms with a partially captive market (Tyson 1993:56).
During the early postwar decades, Japan imported virtually all of the technology for its basic and high growth industries, and it imported the greater proportion of this technology from the USA (Johnson 1982:57). The import of technology has been an important means for Japanese firms to quickly acquire the most advanced method of producing a particular good. The average annual number of cases of technology imports rose from 250 in the 1950s to 1000 in the 1960s and 2000 in the 1970s and early 1980s. A total of US$17 billion was paid for these technology imports, but this cost reflected only a fraction of the \( \text{R&D} \) costs associated with developing the technology in the first place. The value of technology sales rose from one percent of payments for technology imports in 1950s to nine per cent in 1960s, 18 per cent in the 1970s and 30 per cent in the 1980s (Parker 1995: 100). As this flow started to tighten somewhat, Japan was increasingly forced to search for new paths and to attempt to be more innovative, probing at the frontiers of both process design and new product choice. Since the 1980s, MITI has channelled some of its R&D expenditures into such technologies as systems for unmanned space experiments, superconductors, solar energy, fuel-cell power generation, chemicals, super-hypersonic transport propulsion, and non-linear photonic materials (Spulber 1995:84).

The import of technology was of critical importance to many firms, but government had a direct hand in the final arrangements as MITI representatives typically participated in negotiations and attempted to see that royalty payments, length of contract and export restrictions were not too onerous. Before the capital liberalisation of the late 1960s and 1970s, no technology entered Japan without MITI’s approval; no joint venture was ever agreed to without MITI’s scrutiny and frequent alteration of the terms; no patent rights were ever bought without MITI’s pressuring the seller to lower the royalties or to make other changes advantageous to Japanese industry as a whole; and no program for the importation of foreign technology was ever approved until MITI and its various advisory committees had agreed that the time was right and that the industry involved was scheduled for ‘nurturing’. From the enactment of the Foreign Capital law in 1950, the government was in charge of technology transfers (Johnson 1982; Okimoto 1989).

**The Institutional Structures**

It is evident from this discussion of the role of government in various areas of vital importance to Japanese industry that this has been a venue of strategic interventions. In
particular, to understand the Japanese development process, we need to explore the institutional structures built to facilitate the social relations identified in macro level studies and which provide the context for micro-level decisions as reflected in trade and investment patterns. These institutions were built to promote partnership and shared goals between the sectors in the economy. They served to facilitate growth in the earlier stages of development and continue to provide a base for initiatives.

**Public Corporations**

As in many other countries, the Japanese public corporation became the favoured instrument to undertake some of the functions that during the early post-war years were undertaken by government departments. Two of the major undertakings were the national railways and the telegraph and telephone service (both have been privatised since). The transference took place in 1949, and all new public enterprises since that time have been entrusted to one of several types of public corporation. These corporations differ widely from one another in function, the degree of central control and financial arrangements. The variety of form that these bodies have assumed is at least as great in Japan as anywhere else. In Japan, however, public enterprise is almost absent from civil manufacturing industry and has a comparatively small share of essential resources (Allen 1979:35-6).

**Ministry of International Trade and Industry**

Japan's market structure provides multiple points of entry for government intervention. In particular, the existence of *keiretsu* presents MITI with multiple points of entry through which to exert direct influence on market outcomes (Okimoto 1989:17-8). After World War II, the American occupation (1945-52) carried out the purging of some major bureaucrats and military leaders and the partial disbanding of the *zaibatsu*. As the occupation ended, though, the central bureaucracy rapidly regained its guiding economic role. The interconnections and the interplay between the bureaucracy and business started again on a vast scale. MITI has been mainly responsible for discharging the state's guiding role.

MITI's goals have varied over time in weight and composition, but some have recurred regularly since its founding in 1949. MITI considers that one of its primary duties is the creation of powerful interests that favour shifts of energy and resources into new
industries and economic activities. MITI is convinced that market forces alone will never produce the desired shifts. Moreover, it has never been reticent about saying so publicly, despite its undoubted commitment in the post-war era to free enterprise, private ownership of property, and the market (Johnson 1982; Okimoto 1989). In the early post-occupation years, MITI focused its attention on the imperatives of reconstruction and on infrastructure needs. In the 1960s, in tune with the world’s preoccupation with accelerated growth, MITI fuelled the economy’s superfast growth with its preferential treatment of heavy industry and chemicals (Spulber 1995:84).

By the 1970s, the need for distribution of government funds, export promotion and import protection was reduced. Most large firms were successfully competing internationally and MITI support for export promotion was restricted to the small- and medium-scale enterprises. However, the scope of MITI’s guiding policies expanded in a number of directions. First, it helped stabilise various depressed industries, namely steel manufacturing, aluminium smelting, polyester, glass, wool production, and shipbuilding, and extended all kinds of financial assistance to these and other industries for the reduction of their capacities as well as for the relocation, retraining, and retirement of their workers. It also promoted various consolidations and mergers, notably in chemicals, petroleum, metals and the machinery industry, and attempted to bring about a greater concentration in the automobile industry. During this period, MITI continued its role as a facilitator in the structural adjustment of declining industries (Parker 1995:92-3; Spulber 1995:84).

During the remaining years of the twentieth century, MITI’s objectives include: (1) shifting Japan’s industrial structure from energy-intensive heavy manufacturing to knowledge-intensive high technology; (2) creating a stable and supportive business environment; (3) reaching the state-of-the-art frontiers in high-technology research and development; (4) improving economic efficiency and productivity; (5) improving the quality of life; (6) ensuring economic security; and (7) integrating Japan’s industrial economy smoothly into the international economic system (Okimoto 1989:49-50).

MITI has seldom used all levers of power at its disposal, even during the heyday of high-speed growth. Its pattern has been to intervene forcefully but selectively on the basis of prior consultation with the private sector, and then to pull back. Seldom has the
intervention led to a permanent ratcheting upward of state power. Areas in which MITI has actively intervened include: (1) consensus building and the articulation of a long term ‘vision’ for those industries under its jurisdiction; (2) the setting of sectoral priorities; (3) the allocation of subsidies and facilitation of financial flows to priority sectors; (4) adjustments of industrial structure; (5) infant industry protection; (6) investment guidance in certain industries and under certain conditions; (7) regulation of excessive competition; (8) downside risk reduction and cost diffusion; and (9) export promotion and mediation of trade conflicts (Okimoto 1989:18-9).

Many analysts (Caves and Uekusa 1976; Trezise 1983; Friedman 1988; Okimoto 1989; Parker 1995, Callon, 1995) have indicated that MITI’s ability to get its way is limited when its goals clash with the interests of business firms or other government agencies. For example, MITI’s desire to consolidate the auto industry around Toyota and Nissan served the interests of those firms and of struggling smaller firms that they may absorb, but not the stronger medium-sized firms that carried on independently. The alliances made by the latter with US auto producers hardly suited MITI’s preferences. Sometimes MITI is blocked by clashes with other governmental agencies, as in the quarrel with Japan Telephone and Telegraph over the use of telephone lines for time-sharing systems. Conflict with the Fair Trade Commission of Japan (FTCJ) has of course, been endemic (Caves and Uekusa 1976:489).

A more recent analysis by Callon (1995:183) found that the increasing tensions between the Japanese companies and MITI in the 1980s were due to the fact that during this period, Japan’s growing economic and technological power constituted a structural transition in its position in the global economy. Japan had moved from being a follower, both technologically and economically, to being a world-class competitor in a broad array of activities. This new techno-economic situation seriously eroded MITI’s ability to run an effective industrial policy. Increasingly, large Japanese firms cast off their dependence on MITI and refused to contribute funds to the MITI consortia.

**Others State Agencies**

The Occupation Authority did not consider that its task of economic liberalisation was completed when it dissolved, or partially dissolved, the *zaibatsu*, unless the dissolution policy was buttressed by permanent legal restraints on monopolistic practices. So the
government was required to pass a Anti-Monopoly law and to set up a Fair Trade Commission (FTC) with the function of curbing the operations of cartels and countering any future attempts to monopolise. A Trade Association Law reinforced the Anti-Monopoly law. The business community disliked these laws and it was not long before efforts were made to emasculate them (Allen 1979:26).  

The large firms, which are associated with dominant parties and whose interests MITI usually defends, have succeeded in curbing the authority of the Commission. Firms brought under scrutiny by the Commission have frequently successfully pleaded that they had acted under the ‘administrative guidance’ of MITI. On occasions, the intervention of the Commission has been blocked by special enactments, which have empowered MITI to encourage consolidation or restrictive arrangements in particular industries (Allen 1979:27).

The Government’s active role in administering industrial policy complicates the task of enforcing antitrust in Japan. According to Okimoto (1989:13), Japan’s FTC is also required to monitor the anti-competitive consequences of MITI’s close relationship with industry, its reliance on industrial associations, and the use of administrative guidance concerning investments, exports, and sometimes production. However, Okimoto (1989) pointed out that the Japanese government has found ways of reconciling industrial policy with antitrust enforcement so as to enable the FTC and MITI to work out differences of opinion through negotiations. MITI officials are encouraged to take antitrust factors into account in formulating industrial policy. Okimoto (1989:14) is of the opinion that anti-monopoly enforcement in Japan is not a meaningless charade because FTC takes its mandate seriously. The combination of FTC opposition, the aroused opinions of scholars and the mass media, and political pressures from opposition parties establishes definite limits on how far industrial policy can be pushed. Moreover, according to Okimoto’s view, compared to France or Italy, Japan’s enforcement is far from negligent. Okimoto (1989) felt that the comparison between Japan and US antitrust policies might show Japanese antitrust policies in too harsh a light.

24 As early as 1949 the scope of some of the original provisions was modified; for example, the power of the Commission to prevent inter-corporate stock-holding, inter-locking directorates and mergers was reduced. In 1953, resale price maintenance was permitted for a limited class of articles, and it became possible to operate cartels to promote rationalisation and to fix prices by agreement in depression, although the consent of the Commission had to be obtained first (Allen 1979: 26-7).
The Ministry of Finance (MOF) and other ministries also have regulatory powers over economic sectors under their general charge. An area that cannot be neglected is policy towards small business. First, financing assistance involves long-term loans at low rates of interest\(^{25}\). Second, guidance is provided from local public offices on managerial practice and technology. Management training is offered, along with various aids to technical development. Third, cooperative organisations are authorised, either to reduce excessive competition or to handle insurance and other cooperative activities or facilities. The government can order the participation of non-member enterprises in these arrangements. Fourth, modernisation schemes are promoted by various means such as advice, loans and tax concessions, and regional planning operations. Various inducements to environmental improvement are also slanted toward small enterprises (Caves and Uekusa 1976:489).

**Evaluation of State-Market Relations in Japan**

Many analysts attributed Japan economic achievements to the collaboration between the state and market in its development process. Abegglen (1970:8), for example, pointed out that government and business in Japan worked in partnership, with generally agreed on goals. As such it is difficult, and perhaps not useful, to attempt to define the boundary between government and business in any major business decision. However, this relationship is not comparable to that of a socialist economy, with the state in control of the economy, nor it is analogous to the USA in the late nineteenth century, with government essentially an instrumentality of big business. In supporting Abegglen, Krugman (1987:136) argued that Japan had advanced its interests by adopting a national strategy in which government acted in concert with business to encourage certain industries. In fact, Allen (1979:31) indicated earlier that the Japanese prefer to arrive at decisions by a process of consultation that normally leads to a consensus. Agreed decisions emerge from the tensions and arguments among the various interests. If the bureaucracy guides private industry along the paths that it approves, the industrialists likewise influence the policy of the bureaucracy.

\(^{25}\) These loans are passed through various public financial intermediaries, and modernisation loans are provided through prefectural governments. Organisations have been formed to lease equipment and to guarantee loans for small business. Small business investment companies provide equity capital (Caves and Uekusa 1976:489).
Abegglen (1970) goes further to attribute the nature of the business-government relationships in Japan to historical perspective, national identity and similarity in education and training of the top government officials and Japanese businesspeople. Historically, in Japan’s very abrupt shift from a feudal system to a central national government and from feudal economy to industrialisation, the state took important initiatives and played the major role. With limited supplies of private entrepreneurship and capital, the state itself opened new ventures in mining, munitions, railroads, shipbuilding and textiles in addition to building a centralised infrastructure for commerce, education and finance. The required resources were squeezed from an agricultural sector through heavy land and indirect taxation. When these revenues became insufficient by the early 1880s, the Meiji State resigned its commitment to public enterprise. Non-military establishments were sold on very favourable terms to the private sector where they were entrusted to a limited number of business combines: the zaibatsu. As the purchasers of state factories, the vehicle through which the state created centralised banking institutions, and as the recipients of state contracts, the zaibatsu were used as instruments of state policy which integrated profits with patriotism (Eccleston 1989:108-9).

A second factor, according to Abegglen (1970) is the strong sense of national identity that pervades the nation. Japan’s island geography, its long policy of exclusion of foreigners, its single language, homogeneous culture and sense of racial identity have all contributed to the form of business-government relationships. Whatever the causes, Japanese society exhibits to a marked degree a strong feeling of ‘we, the Japanese’ as contrasted with ‘they, all non-Japanese’. Variants of a phrase waga kuni, ‘our country’, recur to haunt the foreign visitor. Business and government are absolutely one in their determination to continue to increase the economic well-being of the country. This ultimate goal is the basis for the kind of partnership that existed in Japan (Abegglen 1970:11-2).

Finally, Abegglen (1970:12) attributed the similarity in education and training of the top government officials and businesspeople in large business firms as a factor that led to their close collaboration. Higher education in Japan is very much centred in Tokyo, and in half-dozen universities within Tokyo. The majorities of persons who reach leadership
positions in both government and business have attended the same universities, and are products of a very similar educational and early career experience. In point of fact, there remains a tendency for the very best graduates – that is, those at the top of their class in schools such as Tokyo and Hitotsubashi – to take positions in the most prestigious government agencies in preference to business. They retain options, however, of either entering legislative politics or business later in their careers. There is, therefore, a considerable common background and interest, as well as mutual respect, that is less commonly observed in the USA, for example (Abegglen 1970:12).

Meanwhile, Sakakibara (1993:27) described the relationship between the public and the major private corporate sector as one of 'comparative independence'. In areas where public and private sectors overlapped, fierce competitive relations existed. In other words, the public and the private sectors, especially the major corporations, engaged in compartmentalised competition in basically independent forms. It is in this context that a constant process of negotiation is used to shape mutual understanding, with both market and state choices being made in a reciprocally related manner (Sakakibara 1993:27). Sakakibara's argument is in line with of Boyd's (1987:68) assertion that the relationship between the leading players as one of interdependence. The bureaucracy cannot act without the legitimating seal of the Diet, and is, in consequence, constrained to cooperate with the political forces that control the Diet (Boyd 1987:68).

Okazaki (1997), on the other hand, attributed the business-government relationships to the vicious cycle faced by the Japanese economy during the first half of the 1950s. This problem could not be escaped by the self-motivated conduct of the private enterprises alone. To resolve this problem, coordination by the government was considered to be necessary. The Council for Industrial Rationalisation was established to provide a venue for cooperation between government and the private sector to create a path to escape this vicious cycle. The path was formulated and developed into plans for simultaneous investment in related industries. This process is an essential aspect of the business-government relations in postwar Japan (Okazaki 1997:94-5).
Meanwhile, Patrick and Rosovsky (1976:52) gave the following as reasons for this close government-business relationship in Japan. They were: (1) the LDP has been a pro-business party since its formation in 1955 and, overtime, has developed ways of working with business; (2) the strong, able government bureaucracy, respected by politicians and businessmen; (3) aggressive price and market share competition among large firms has meant that the largest firms at times welcomed government interference to restrict ‘excessive’ competition; (4) consensus on economic goals and on means of attaining them 27; and (5) common ideology or values 28.

The symbiosis of state and industry was not always cosy, but it is always imperative (Boyd 1987:66). Whatever the role of bureaucracy in the formal policymaking process, it actually made policy through the use of administrative guidance, bureaucratic ordinances, directives and informal persuasion. Serious deliberation by a working parliament is substituted by deliberation in councils attached to the bureaucracy and stuffed with names drawn from the peak associations of big business, journalism, and the universities. Even the most important of these councils such as the Economic Council, the Industrial Structure Council, and the Foreign Capital Council serve the purposes of their parent bodies, respectively the Economic Planning Agency, MITI, and MOF (Boyd 1987:68).

According to Boyd (1978:70), the benefits that accrue to industry by virtue of its participation in this relationship are considerable. The partnership permits the ‘depoliticisation’ of the industrial policymaking process: the end, economic growth, is beyond question and public debate, while the means to that end are seen as a set of

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26 In the first half of the 1950s, the Japanese economy resumed capital accumulation and re-established its heavy-industry base. This process, however, was not easy. The heavy industries were faced with problems of high cost and small scale, which in turn impeded investment for rationalisation (Okazaki 1997:94).

27 Until 1970 the LDP politicians, the government bureaucrats, and big business leaders were in substantial agreement on three matters: (1) the high priority of economic objectives in societal goals; (2) the high priority of relatively rapid growth in economic objectives; and (3) the belief that the way to achieve economic growth was through the expansion of the capacity, capabilities, and output of private business, especially big business. The government’s main role was thus to be of help to private growth wherever possible. This consensus meant that the goals of business and government overlapped significantly and were seldom in conflict (Patrick and Rosovsky 1976:52-3).

28 The right of government to lead, and to interfere where necessary, has substantial basis in ideology as well as in historical experience. Ideology was also a means of establishing a norm of economic behaviour and legalising economic institutions and practices. In Japan, the ideology is not well articulated and its role in directly shaping the economic system is not large. The focus is pragmatic – whatever succeeds in achieving desired goals (Patrick and Rosovsky 1976:53)
technical choices best left to the elite bureaucratic cadre. Another benefit from this relationship is consistency in most policy directions, despite the high turnover rate in government ministers (Parker 1995).

Despite the above, Callon's (1995:182-3) analysis of Japanese High-tech Industrial policy found that beneath the veneer of cooperation in Japanese high-tech consortia, the evidence indicates that there are tremendous levels of conflict and competition that severely compromise the consortia’s cooperative goals. This is because the competing companies and the competing bureaucracies have been successful in resisting efforts to force cooperation, especially in the 1980s. Thus, the explicit, elaborate structural apparatus to promote cooperation in the high-tech consortia that have created Japan's international reputation for successful cooperation between government and industry in the field of technology is often nothing but a public show: seemingly cooperative institutions and divisions of labour in R&D mask an underlying reality of fierce corporate and bureaucratic competition.

Amakudari

One practice that is distinctive in Japan, which greatly enhances the degree of cooperation between the state and private business, is the institutionalised outflow of officials who retire early. The practice is known as amakudari, which moves retired bureaucrats from MITI and MOF into the Liberal Democratic Party, the public corporations, the Bank of Japan, commercial banks, trade and industry associations, and the boardroom of private enterprise. The movement between the public and private sectors is common elsewhere, but in Japan the direction of the transfer is almost exclusively one-way (Trezise 1983; Boyd 1987; Eccleston 1989).

The practice of amakudari brings long-term security for individual bureaucrats and maintains important channels of communication with the state for the companies and institutions that offer re-employment. The practice also provides huge scope for corruption, as is now becoming clear. According to Boyd (1987) and Eccleston (1989), it is tempting to argue that the Japanese State has withdrawn from its role as a major economic actor as greater liberalisation of trade controls and the internationalisation of the financial markets has evolved. In practice, however, just as amakudari continues to
structure informal networks of influence, the scale of guidance given by ministry officials has shown no tendency to diminish.

The Civil Servants

In Japan the developmental, strategic quality of economic policy is reflected within the government, in the high position of the so-called economic bureaucrats; that is, the officials of the Ministries of Finance, International Trade and Industry, Agriculture and Forestry, Construction, and Transportation, plus the Economic Planning Agency. These official agencies attract the most talented graduates of the best universities, and the positions of higher-level officials in these ministries have been and still are the most prestigious. Although it is influenced by pressure groups and political claimants, the elite bureaucracy of Japan makes most major decisions, drafts virtually all legislation, controls the national budget, and is the source of all major policy innovations (Johnson 1982:20-1).

Conclusions

Based on the discussion, it seems that the US and Japanese states intervene in their market for various reasons. Most importantly, both states seem to intervene because of what they perceive as imperfections in the market. Though arguments regarding the role of the state in Japan economy are not conclusive, there are many analysts who seem to agree that Japan's unprecedented post-war economic growth is an example of a state-guided market system. They acknowledge that there is collaboration between the state and big business in the Japanese economic system. In the USA on the other hand, most analysts agreed that the government operates on the assumption that it should give the market as much leeway as possible to function efficiently, free from undue interference. Only when the market malfunctions or produces unacceptable results is it necessary for the government to step in and take action.

As for industrial policy, many studies of Japanese industrial policy convey the impression that it is coherent, effective, and far-sighted. While the use of industrial policy in Japan seems to be a forgone conclusion to a majority of social scientists, the case for the USA is not. However, in spite of the differences in their opinions, both the critics and the proponents of an active role of government in the USA seem to agree that the US
government has not had a coherent set of policies toward industry; instead they view US industrial policy as a series of inconsistent and haphazard responses to the demands and pressures of particular firms, industries, and regions.

The discussion of the US practice in this chapter has shown that this may be a simplistic view. If one defines industrial policy exclusively in terms of explicit government efforts to promote the international competitiveness of particular industries, then perhaps it is true that the USA has had relatively few industrial policies. But then, this chapter’s discussion of the Japanese economy shows that Japan may also have fewer effective industrial policies than most commentators believe. In the case of Japan, many of the industries promoted by MITI in the 1950s and 1960s were not originally intended to become leading exporters. As such, the USA is not unique in having its sectoral policies motivated by objectives other than that of international competitiveness. Moreover, many of the USA’s indirect forms of support for industry have been as successful as the more explicit interventions of the governments of other nations. Despite that, the idea of industrial policy seems to provoke much contention in the USA.

Another reason why the extensiveness of the USA’s assistance to industry may have been obscured is an ideological one. The USA exhibits an extreme form of a syndrome in which a nation’s ideology of business-government relation’s bears virtually no relationship to its practices. Unlike Japan, economics in the USA is dominated by neoclassical faith in the efficacy and effectiveness of market-based mechanisms of capital allocation. The conventional wisdom of American economists is that, except in highly unusual circumstances, only through the market can comparative advantage be developed. It therefore follows that the government has no capability to pick ‘winners’.

In terms of business-government relations, Japan has a formal mechanism known as deliberation councils to allow the public and private sectors to collaborate in policymaking. The USA does not have such formal institutions. What the USA has are informal arrangements such as lobbies and PACs to enable the private sector to participate in the policymaking process. These informal arrangements seem be as effective as the Japanese formal arrangements in influencing policy decisions. Aside from influencing a policymaking process, the USA’s government has also applied extensive
public-private partnership in the provision of goods and services, especially in the defense industry.

Finally, although Japan and the US share a commitment to the market, the two seem to differ significantly in their approach to address market failure. The USA’s approach can be described as reactive, ad hoc, and focused on market failures without reference to industry-specific goals. It suggests a preference for leaving the market alone unless there is tangible evidence of a breakdown that has substantial effects on the overall economy. Japan’s approach, by contrast, can be considered as a pro-active, which suggests a more active posture, based on a disposition to steer the market in desired directions.

Based on the experiences of the USA and Japan, it can be seen that there has been some form of state-market collaboration in these countries’ development process. The different is only in the nature of the collaboration and the reasons for it. In the case of the USA, the market seems to assume a much wider role than the state. Nevertheless, the state intervened when the market failed to produce desired outcomes or the negative impact of a breakdown in the market on the overall economy is enormous. Japan, on the other hand, pursues a state-led development process because its development process took place amidst major disadvantages such as lack of a private sector and technology for development. On top of these factors, Japan had to face fierce competition from other advanced nations in the West. However, in contrast with the socialist and communist approaches, the Japanese state-led approach is actually assisting and promoting the market. In conclusion, this chapter has shown that even though in theory, social scientists’ views in regard to who should lead the development process are still divided, in practice, the USA and Japanese development experiences have shown that there is a role for state-market collaboration in the development process.
Chapter 4
Public-Private Sector Collaboration in Malaysia’s Development Strategy

Introduction

The role of governments in the development process differs all over the world. The examples in Chapter 3 demonstrated that the governments in the USA and Japan participate in their development process. However, the degree of their involvement differs. In the USA, the government operates on the assumption that it should give the market as much latitude as possible to function efficiently. Only when the market malfunctions or produces unacceptable results is it seen as necessary for the government to step in and take action. The Japanese government on the other hand, subscribes to the preventive approach and is more inclined towards steering the market to desired directions.

This chapter explores the role of the Malaysian Government in the development process since Malaysia gained its independence in 1957. Specifically, this chapter explores the interaction between the public and private sectors and its impact on Malaysia’s socio-economic development during the period 1957 to 1983 and the factors that led to the introduction of the Malaysia Incorporated Concept as a development strategy from 1983 onward.

Overview of Malaysia’s Development Strategies and their Socio-Economic Impact, 1957-83

Malaysia’s development policies have undergone significant transformation in response to the changing domestic and global environment (Samsudin 1993:1-1; Ismail and Meyanathan 1993:3). Development policies can be categorised into three phases, more or less according to the degree of state intervention.

Market-led approach 1957-70

As shown in figure 4.1, the Malaysian economy during the 1957-70 period was fundamentally primary commodity-based, with heavy dependence on rubber and tin. Together, rubber and tin contributed 69 per cent and 53 percent to total exports in 1960 and 1970, respectively (figure 4.2). The two sectors accounted for around 28 per cent of
government revenue and 36 per cent of total employment during this period (Bank Negara Malaysia 1993:200; Samsudin 1993:1-2). Manufacturing’s contribution was 8.5 per cent in 1960 and 11.9 per cent in 1970 and its activities were largely confined to processing off-estate agriculture.

Figure 4.1: Structure of Production, 1960-97 (Share of Total GDP)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>45.0</td>
<td>36.2</td>
<td>40.1</td>
<td>42.3</td>
<td>40.8</td>
</tr>
<tr>
<td>Construction</td>
<td>3.0</td>
<td>3.8</td>
<td>4.6</td>
<td>3.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5.0</td>
<td>13.9</td>
<td>19.6</td>
<td>27.0</td>
<td>35.7</td>
</tr>
<tr>
<td>Mining</td>
<td>7.0</td>
<td>13.7</td>
<td>10.1</td>
<td>9.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>34.0</td>
<td>29.0</td>
<td>22.9</td>
<td>18.7</td>
<td>11.9</td>
</tr>
</tbody>
</table>


During this period, the government continued the colonial laissez-faire policies towards industry but intervened extensively to promote rural development and provide social and physical infrastructure (Mohd. Shahari 1985:354; Bank Negara Malaysia1993:200; Ismail and Meyanathan 1993, Jomo and Gomez 1997:346). The rationale for this approach was that the benefits of economic growth would trickle down to the rural masses and the poor in general (Mohd. Shahari 1985:354). Government’s development policies, designed to achieve economic growth and rural development (Samsudin
1993:1-2), concentrated on increasing social capital through the provision of basic infrastructure and social amenities (Bank Negara Malaysia 1993:200), as reflected by public sector spending (shown in figure 4.3). The aim was to correct the structural weaknesses of the economy, focussing on diversifying and modernising agricultural production and rural development (Samsudin 1993:1-3).

Figure 4.2: Sources of Exports, 1960-97

<table>
<thead>
<tr>
<th>Year</th>
<th>Others</th>
<th>Mfg</th>
<th>Oil&amp;Gas</th>
<th>Tin</th>
<th>Palm Oil</th>
<th>Rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>15.8</td>
<td>8.5</td>
<td>4.0</td>
<td>14.0</td>
<td>2.0</td>
<td>55.1</td>
</tr>
<tr>
<td>1970</td>
<td>26.1</td>
<td>11.9</td>
<td>3.9</td>
<td>19.6</td>
<td>5.1</td>
<td>33.4</td>
</tr>
<tr>
<td>1980</td>
<td>18.7</td>
<td>21.6</td>
<td>24.1</td>
<td>8.9</td>
<td>10.3</td>
<td>16.4</td>
</tr>
<tr>
<td>1990</td>
<td>12.9</td>
<td>59.3</td>
<td>16.7</td>
<td>1.1</td>
<td>6.2</td>
<td>3.8</td>
</tr>
<tr>
<td>1997</td>
<td>5.3</td>
<td>82.3</td>
<td>6.2</td>
<td>0.2</td>
<td>4.9</td>
<td>1.1</td>
</tr>
</tbody>
</table>


Although the Malaysian government promoted import substitution, it did not pursue a strong protectionist policy that would have boosted manufacturing at the expense of agriculture (Ismail and Meyanathan 1993:4). Instead, the government chose to promote the manufacturing sector at the expense of all other sectors through the creation of a favourable investment climate by providing incentives such as tax holidays, industrial estates and the provision of support services and infrastructure that were institutionalised in measures such as the Pioneer Industries Ordinance of 1958. However, in the late 1960s, the government’s industrial intervention was increased following the establishment of the Federal Industrial Development Authority, an authority that was

Figure 4.3: Sectoral Expenditures in Malaysian Development Plans, 1956-95

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>6.7</td>
<td>6.6</td>
<td>4.8</td>
<td>6.2</td>
<td>4.5</td>
<td>1.9</td>
<td>9.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Security</td>
<td>0.0</td>
<td>11.6</td>
<td>15.7</td>
<td>10.4</td>
<td>16.6</td>
<td>10.1</td>
<td>3.2</td>
<td>20.1</td>
</tr>
<tr>
<td>Housing</td>
<td>6.8</td>
<td>2.6</td>
<td>4.9</td>
<td>2.4</td>
<td>6.1</td>
<td>5.3</td>
<td>4.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Health</td>
<td>1.3</td>
<td>3.8</td>
<td>3.5</td>
<td>1.8</td>
<td>1.5</td>
<td>1.1</td>
<td>2.6</td>
<td>4.4</td>
</tr>
<tr>
<td>Education</td>
<td>6.3</td>
<td>8.9</td>
<td>7.8</td>
<td>6.9</td>
<td>7.3</td>
<td>6.3</td>
<td>16.1</td>
<td>13.4</td>
</tr>
<tr>
<td>Industry</td>
<td>1.3</td>
<td>2.2</td>
<td>3.3</td>
<td>16.5</td>
<td>15.3</td>
<td>27.3</td>
<td>11.3</td>
<td>7.4</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>54.0</td>
<td>46.6</td>
<td>33.7</td>
<td>34.1</td>
<td>26.6</td>
<td>36.2</td>
<td>32.7</td>
<td>31.6</td>
</tr>
<tr>
<td>Agriculture</td>
<td>23.6</td>
<td>17.7</td>
<td>26.3</td>
<td>21.7</td>
<td>22.1</td>
<td>11.8</td>
<td>20.8</td>
<td>11.6</td>
</tr>
</tbody>
</table>


During this period, the Malaysian economy grew at an average rate of 6 per cent per annum (Bank Negara Malaysia 1993:200; Ismail and Meyanathan 1993:4; Samsudin 1993:1-3), as shown in table 4.1. Although this achievement can be considered impressive by developing country standards, there remained widespread poverty, and poverty and income disparities emerged as more serious problems as they were identified along racial lines (see table 4.2 and figure 4.4).
Table 4.1: Malaysia’s GDP Growth Record (Per cent)

<table>
<thead>
<tr>
<th>Average</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1960s</td>
<td>6.0</td>
</tr>
<tr>
<td>1970s</td>
<td>7.5</td>
</tr>
<tr>
<td>1980s</td>
<td>5.9</td>
</tr>
<tr>
<td>1971-90</td>
<td>6.7</td>
</tr>
<tr>
<td>1991-96</td>
<td>8.6</td>
</tr>
</tbody>
</table>


Figure 4.4: Household Mean Incomes, by Ethnic Group, 1957 to 1970


The worsening of the Gini ratio, rising from 0.412 in 1957/58 to 0.502 in 1970, reflected the rising income disparities. It was estimated that about 49 per cent of the population were living in poverty in 1970 with the poor concentrated among the Bumiputera1 (Samsudin 1993:1-3). The mean income of the bumiputera was very much lower than that of the other ethnic groups as shown in figure 4.4. Imbalances were even more pronounced in the ownership of equity as shown in table 4.2.

---

1 The term Bumiputera refers collectively to Malays and other indigenous groups and was coined after the formation of Malaysia in 1963 (Ismail and Meyanathan 1993:5).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty</td>
<td>49.3</td>
<td>39.6(^1)</td>
<td>16.5(^3)</td>
<td>8.9</td>
</tr>
<tr>
<td>Urban</td>
<td>21.3</td>
<td>24.7(^1)</td>
<td>7.1(^3)</td>
<td>3.7</td>
</tr>
<tr>
<td>Rural</td>
<td>58.7</td>
<td>8.2(^1)</td>
<td>21.1(^3)</td>
<td>15.3</td>
</tr>
<tr>
<td>Bumiputera</td>
<td>65</td>
<td>25.8(^1)</td>
<td>20.8</td>
<td>n.a.</td>
</tr>
<tr>
<td>Chinese</td>
<td>26</td>
<td>7.8(^1)</td>
<td>5.7</td>
<td>n.a.</td>
</tr>
<tr>
<td>Indian</td>
<td>39</td>
<td>10.1(^1)</td>
<td>8.0</td>
<td>n.a.</td>
</tr>
<tr>
<td>Unemployment</td>
<td>8.0</td>
<td>7.6(^2)</td>
<td>5.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Bumiputera</td>
<td>8.1</td>
<td>8.7(^2)</td>
<td>5.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Chinese</td>
<td>7.0</td>
<td>5.5(^2)</td>
<td>4.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Indian</td>
<td>11.0</td>
<td>8.4(^2)</td>
<td>4.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Equity Ownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bumiputera</td>
<td>2.4</td>
<td>15.6</td>
<td>19.2</td>
<td>20.6</td>
</tr>
<tr>
<td>Chinese</td>
<td>27.2</td>
<td>33.4</td>
<td>45.5</td>
<td>40.9</td>
</tr>
<tr>
<td>Indian</td>
<td>1.1</td>
<td>0.9</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Foreign</td>
<td>63.4</td>
<td>34.7</td>
<td>25.4</td>
<td>27.7</td>
</tr>
</tbody>
</table>

Note:  
1 refers to 1984 figures  
2 refers to 1985 figures  
3 refers to 1989 figures

Sources:  

State-Led Development, 1971-83

Although the laissez faire approach led to rapid economic growth, it was not successful in attaining social and equity objectives (Bank Negara Malaysia 1993:201). The widespread poverty coupled with relatively high unemployment among the Bumiputera (as shown in table 4.2) contributed to discontent that resulted in the 1969 ethnic conflict (Ismail and Meyanathan 1993:5, Lim and Nesadurai, 1997:186). This event marked the beginning of Malaysia's economic transformation (Ismail and Meyanathan 1993:3; Lim and Nesadurai, 1997:186). It prompted a major rethink in the Malaysian Government's approach to development, resulting in the introduction of the New Economic Policy

With the launching of the NEP, the basically non-interventionist role of the government changed sharply. It took a more pro-active role in the country’s overall social and economic development through direct state intervention in the productive sectors of the economy. It assumed a highly visible and activist role in the allocation of real and financial resources based on socio-political criteria rather than economic considerations (Bank Negara Malaysia 1993:210; Jomo and Gomez 1997:346). However, the government activities did not stop at regulating the markets. It also participated actively in economic activities which, in many areas, competed directly with the private sector (Bank Negara Malaysia 1993:201). This is reflected by the amount of public expenditures as shown in table 4.3\(^3\), and the number of Non-financial Public Enterprises (NFPEs) established during this period, as shown in table 4.4. According to Bank Negara Malaysia (1993:202), government participation in the economy reached its highest point in the early 1980s as reflected in the large expenditures on import-intensive projects such as automobiles and steel.

Table 4.3: General Government\(^1\) Expenditure as a Percentage of GDP, 1966-97

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Expenditures</th>
<th>Capital Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>16.6</td>
<td>6.6</td>
</tr>
<tr>
<td>1970</td>
<td>20.0</td>
<td>7.9</td>
</tr>
<tr>
<td>1980</td>
<td>28.1</td>
<td>15.2</td>
</tr>
<tr>
<td>1990</td>
<td>26.2</td>
<td>12.2</td>
</tr>
<tr>
<td>1997</td>
<td>18.9</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Note: 1 General government refers to the Federal government, state government and four local governments

\(^2\) The main objective of the NEP was ‘national unity’ and it was to be achieved through a two-pronged strategy of poverty eradication and restructuring of the society (Government of Malaysia 1971:1; Samsudin 1993:1-4; Ismail and Meyanathan 1993:5, Gomez and Jomo 1997:24).

\(^3\) Also refer to figure 4.3 for the breakdown of development expenditures.
As shown in table 4.1, the Malaysian economy grew at an average rate of 7.5 per cent per annum during the 1970s. This increased growth rate is attributed to the acceleration in external demand and the increase in the prices and production of the major commodities (Ismail and Meyanathan 1993:6). However, the growth of the economy during the 1980s registered a declining trend due to the prolonged recession of the world economy (Samsudin 1993: 1-8). During this period, the economy grew at an average rate of only 5.9 per cent. The strong government involvement in the NEP commitment in this adverse environment led to serious resource constraints and drove the economy into deficit in the balance of payments and the government accounts (Bank Negara Malaysia 1993:202; Samsudin 1993, 1-8). At their height, the budget deficit rose to 24.2 per cent of GDP in 1981 while the current account of the balance of payments reached an unprecedented level at 14.1 per cent of GDP in 1982. Financing such deficits by borrowing resulted in the rapid build-up of domestic and external debts. The Federal Government’s outstanding debt peaked at RM67.1 billon or 93.1 per cent of GDP at the end of 1986 with the foreign debt service ratio climbing to a record level of 10.0 per cent of exports in 1986 (figure 4.5).

**Public-Private Sector Relations During 1957-83**

A number of Malaysian analysts described the relationship between the public and private sectors in Malaysia during this period as a curious mixture of negativism and in some ways a mutual awareness of the importance of each other (Mizanur 1983; Vijandran

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4 Negativism here refers scepticism and reluctance to cooperate.
1984; Mohd. Nor et al. 1984; Chien 1986). Chien (1986:7) attributed this to factors such as the administrative heritage of the country, the regulatory role of government, and the Government’s awareness of the importance of the private sector in contributing to the attainment of the desired rate of development for the country as reflected in its five-year development plans.

Figure 4.5: Public Sector Deficit, Current Account Balance, Federal Government Outstanding Debt, Foreign Debt Ratio$^1$ and GDP$^2$, 1970, 1980-90

![Graph showing various economic indicators including GDP, foreign debt service ratio, current account balance, and public sector debt and deficits.]

Note: $^1$ Per cent of Export  
$^2$ GDP at constant value  

Administrative heritage

According to Chien (1986:7) the legacy of the British Administration’s indifferent$^5$ attitude towards the public’s needs was continued after Malaysia gained its independence in 1957. Chien’s suggestion seems to be in line with some earlier descriptions of the British Administration in Malaya. For example, Egmont Hake (as cited in Heussler 1981:319), a member of the Federal Council summed up the Malaya Civil Service as “a

$^5$ Chien (1986:7) listed the characteristics of the government administration during the colonial period as (1) lack of consideration for the public, (2) negative attitude towards the general public, (3) condescending attitude towards the public, (4) administrative righteousness, and (5) lack of fairness to the public.
colourless bureaucracy, whose chief admirer was itself". Emerson (Heussler, 1981:321) found the Malaya Civil Service as just and efficient but not able to rule in such a way as to promote the interests of any but the upper classes. Clifford (Heussler 1981:93) described the British Administration as having too much red tape and the tendency to rule through middlemen\(^6\) who were hated by the people and who victimised them rather than providing the honest government that could justify the British rule.

However, Siddu (1980) and Heussler (1981) pointed out that there existed an avenue for public-private sector cooperation in the policy making process during the colonial period. This cooperation took place in a Federal Council proposed\(^7\) by Sir John Anderson\(^8\) and set up in 1901. Nevertheless, according to Siddu (1980:90), the Council lacked authority. The role of the unofficial members was very limited (Siddu 1980:95). The Council seemed to act as a front for the British Administration\(^9\) to invoke greater power related to the administration of the Federated Malay States and to ensure the smooth running of their administration, rather than fulfilling the needs and welfare of the public.

Despite that, Birch\(^10\) (Heussler, 1981:102) indicated the following:

The Unofficials, who were assisting to increase the prosperity of the country by mining and planting were the friends of the officials, not hesitating to represent their needs and partaking in all forms of sport. The Chinese knew that the Government officer was an approachable person and their readiness to conform to mining and other regulations imposed upon them bore testimony to the wisdom of the orders issued. The Malays were always in touch with and never shrank from confiding in the officials for they knew that their best interests were the chief care of [the] administration

Based on the above, it can be concluded that there seemed to be certain aspects of the British Administration that fostered some form of demarcation between the public and private sectors. This demarcation seems to have been inherited by the Malaysian Public Service when Malaysia became independent as reflected in a speech by a senior officer of the Malayan Civil Service to a group of newly-recruited administrative staff in 1959:

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\(^{6}\) The middlemen were Eurasians, Sikh police and Indian clerks.

\(^{7}\) This Council represent the first forum in Malaysian history where the public and private sector collaborated in the policy making process. There were two types of membership in the Federal Council. The official members consisted of the High Commissioner, the Resident-General, the Four Malay Rulers, and the four British Residents. The rest was made up of four unofficial members, representing the commercial sector of the economy (Siddu 1980:84-5).

\(^{8}\) The High Commissioner of the Malay States.

\(^{9}\) For more discussion, refer to Heussler (1981).

\(^{10}\) Ernest W. Birch, Resident, Perak.
In the social circle you will have to choose your friends carefully so that no one can say that you are in a position to show favour to them in your official capacity. While there is every reason that you should be civil and on good terms with members of the general public, it is certainly not desirable that you should always be seen in the company of towkays and the business official (Tilman, 1964:113).

However, in spite of this, the British administration did show some willingness to cooperate with the public, even though it seemed to be limited to ensuring the smooth running of its administration.

**Regulatory role of government**

Chien (1986:11) also suggested that the increasing importance of the ‘watchdog’ role of the government has intensified the private sector’s traditional distrust of the public sector. As illustrated by Mizanur (1983) the private sector described the public sector as not only unhelpful but also as stumbling blocks to their activities:

The ‘watchdogs’ regard the private sector with suspicion and would rather deny than provide facility and if they provide facility they do so grudgingly. The situation is exacerbated when officials choose to wield their authority negatively. A situation of conflict then builds up.

Moreover, in the eyes of the private sector, some public officials had a tendency to be over zealous in enforcing government policies and legislation. According to Vijandran (1984:46-47):

Unfortunately, rules intended to be purely regulatory to protect some legitimate public or public policy usually ossify into bureaucratic red tape - the pure enforcement of particular rules without concern for their legislative purpose. Thus the government agencies and officers are seen as an impediment to commercial enterprise and mutual antagonism and distrust develops.

**Importance of the Private Sector**

Despite the apparent scepticism between the public and private sectors, the Malaysian government did acknowledge the importance of the private sector in Malaysia’s development process. For example, Hussien Onn (1973:8-12) stated that the two-fold role of the private sectors was (1) to assume a more dynamic role in the promotion of

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11 In addition to the traditional role of maintaining law and order and collecting revenue, the government also assumed an important role as a regulator. This role became more important under the impetus of development and the rise of big business. Problems such as environmental pollution, unethical business practices, workers’ exploitation, hazardous working conditions which threaten the safety and security of employees and so on have made it necessary for the government to assume a more interventionist role in order to safeguard the overall interests of the public (Chien 1986:11).
new and a larger volume of manufacturing exports. The Government, for its part, should continue to provide all the necessary incentives, infrastructure and other support in the export promotion drive; and (2) the traditional role of the private sector, as one of pure profit maximisation, does not hold well any longer. They are expected to fulfil their wider role of helping to meet the goals of society itself.

Starting with the Fourth Malaysia Plan, 1981-85, the private sector has been designated as the engine of growth, where it was expected to make up more than 70 per cent of the total investment targeted for the Plan period (Government of Malaysia 1981:251). The Fifth Malaysia Plan, 1986-90 (5MP) prescribed the areas in which the Government wanted the private sector to take the leading role\(^{12}\). In the 7MP, the Malaysian Government indicated to the private sector that they are not only expected to assume a leading role in generating economic growth, but are also expected to increase their contributions towards social development (Government of Malaysia 1996b:5):

The increasing role of the private sector as the engine of growth became prominent since the middle of the 1980s in contrast to the 1970s and early 1980s, when the public sector was actively engaged in economic activities mainly through public investment in a large number of public enterprises. Recognising that a private sector-led growth would lead to a higher level of economic success, the Government entrusted a bigger role to private sector initiatives not only in terms of generating growth but also in its contributions towards the objective of growth with equity.

In the 1960s, private sector investment comprised 60 per cent of total investment (Government of Malaysia 1971:82). Equally impressive was investment by the private sector during the 1970s, accounting for 65.6 per cent of total investment. However, during the 1980s, private investment grew at a slower rate of 6.5 per cent per annum compared to 11.6 per cent in the 1970s (table 4.5). Its share of total investment fell to 57.2 per cent (see figure 4.6). This decline was partly attributed to the deep recession faced by the economy in 1985 and 1986 and the crowding out effect of Government investment, resulting from large government investment in heavy industries such as automobiles and steel.

\(^{12}\) The Plan specified that the private sector was expected to develop new ventures and improve technology and skills to meet the challenges of wealth creation. The public sector, on the other hand, was expected to continue to consolidate its expenditure consistent with its financial resources, while at the same time providing the necessary support and environment for the healthy growth of the economy (Government of Malaysia 1986a:22).
Figure 4.6: Public and Private Sector Consumption and Investment, 1966-96


Table 4.5: The Growth of Public and Private Investment¹ in Malaysia, 1966-96

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Investment (RM million)</th>
<th>Growth (%)</th>
<th>Private Investment (RM million)</th>
<th>Growth (%)</th>
<th>Public Investment (RM million)</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966-70</td>
<td>7,894.7</td>
<td>5.9</td>
<td>4,739.6</td>
<td>8.0</td>
<td>3,155.2</td>
<td>2.9</td>
</tr>
<tr>
<td>1971-80</td>
<td>83,897.3</td>
<td>12.8</td>
<td>55,071</td>
<td>11.6</td>
<td>28,826.3</td>
<td>15.3</td>
</tr>
<tr>
<td>1981-90</td>
<td>182,786</td>
<td>4.6</td>
<td>104,508</td>
<td>6.5</td>
<td>78,278</td>
<td>1.8</td>
</tr>
<tr>
<td>1991-96</td>
<td>268,439</td>
<td>11.6</td>
<td>186,973</td>
<td>11.2</td>
<td>81,466</td>
<td>12.4</td>
</tr>
</tbody>
</table>

Note: ¹ constant prices

The above discussion indicates that despite the rhetoric that the public and private sectors generally did not trust each other, the Malaysian government accepted that it needed the private sector to ensure the achievement of its objectives. This is reflected in the speech made by the then Deputy Prime Minister, Datuk Hussien Onn in 1973 about the importance of cooperation between the public and private sectors. According to him, the productive collaboration between the public and private sectors in the primary industries had resulted in Malaysia emerging as a leading primary producer of rubber, tin, timber, palm oil and pepper (Hussien Onn 1973:6-7). However, it was only in 1983 that this acknowledgment was translated into official policy with the launching of the Malaysia Incorporated Concept.

Public-Private Sector Collaboration Approach, 1983 Onward

Lubeck (1992: 176) has claimed that since the first industrial revolution, successful industrialisation strategies have invited imitation and replication by economically backward states seeking rapid social and economic transformation. Gerschenkron (1962) termed this the ‘demonstration effect’, one of the advantages possessed by late industrialisers. The East Asian Miracle Study (World Bank 1993:80) argued that the general model of Japanese success undoubtedly impressed policymakers throughout East Asia, engendering a sense of confidence as well as providing models of potential instruments of growth. Gao (1997:6), who argued that the Japanese model of economic development attracts many former socialist economies and developing countries, supported the World Bank suggestion.

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13 Even though specific writing on the uneasy relationships between Malaysian public and private sectors is not readily available, such is implied in the writing of some of Malaysian analysts especially when they discussed the Malaysia Incorporated Concept. For example, in his article on Privatisation and The Malaysia Incorporated Concept, Chee (1987:74) describe the dominant attitude of the previous administrations (refer to the administrations prior to Mahathir Mohamad’s Administrations) was ‘that the government should lead and the private sector should follow’ (Chee 1987:74). Meanwhile, according to Khoo (1995:135) many people interpreted the Malaysian Incorporated Concept as a ‘mean to end the divide between a ‘Malays public sector’ and a ‘Chinese private sector’. Their descriptions are example of the implied existence of an uneasy relationships between the Malaysian public and private sectors.

14 At an Annual Dinner given by the Federation of Malaysian Manufacturers in 1973 (Hussien Onn 1973).
In Malaysia's case, Lee (1985) argued that Malaysian government belongs to the category of admirers\(^{15}\) of the 'Japan Incorporated' and that this explains the launching of the Malaysia Incorporated Concept. The East Asian Miracle study (World Bank 1993:181) supported this view. The Malaysian approach, according to the World Bank (1993:80), focused first on developing heavy industry and more recently on building business-government relationships. The introduction of formal public-private cooperation in 1983, as embodied in the slogan 'Malaysia Inc.' is an overt attempt to emulate 'Japan Inc.' The difference is that the Malaysian government has applied this concept to its quest for growth with equity (World Bank 1993:186). Meanwhile Khoo (1995:69) argued that Mahathir's praise for Japan bordered on idolisation.

Lee (1985:351) also claimed that it would be an understatement to say that the Malaysia Incorporated Concept is not very different from that of Japan and more complex. Japan's economy is not dominated or penetrated to a great extent by foreigners. In addition, Japanese industrialists are of the same race as the bureaucrats, and in many cases being graduates of the same university such as Tokyo University reinforces their affinity. In Malaysia, the Chinese and foreigners dominate much of the private sector while the Malays control the bureaucracy. The former might not so easily accept administrative guidance from the latter. Nevertheless, Lee suggested that the Concept has potential because many Chinese businesspersons wish to be seen as nationally oriented, while the government wishes to be seen as to having a more rational administration.

The launching of the Malaysia Incorporated Concept and the privatisation program in 1983 marked the time when the Malaysian government began to reduce its direct participation in commercially-related activities (Bank Negara Malaysia 1993:202) and promoted public-private sector collaboration as its development strategy. There were several reasons why the government felt that public-private sector collaboration was necessary to achieve its development aspirations. Chan (1984:40) attributed the change in the Malaysian government's development strategy to (1) the public sector was becoming too large and too costly, crowding out the private sector, and (2) it was simply bad corporate thinking to believe that a government could be the manager of everything.

\(^{15}\) According to Lee (1985:350), the term 'Japanese Incorporated' when first used was meant to be perjorative. It connotes a people that care only about business and the very unflattering epithet
and everybody. Samsudin (1993:1-9), on the other hand, argued that there was a need to address the unsustainable economic situation resulting from the declining economic growth trend and the strong government participation in the economy, especially in the early 1980s. Therefore, beginning in 1983 the government instituted major policy reforms. These included restraining public sector expenditure to reduce the budgetary deficits, adopting private sector-led growth, introducing economic liberalisation and deregulation, and improving investment policies and incentives to promote private sector participation. The government also undertook several administrative and institutional reforms to upgrade efficiency of the public sector. The Malaysia Incorporated Concept and privatisation programs were introduced (Samsudin 1993: 1-9).

Others such as Mohd Nor et al. (1984), Haji Badri (1984), Tengku Ahmad (1984), Mohd. Shahari (1985), Chien (1986) and Ahmad Sarji (1993) attributed this changed approach to government acknowledgment that in a mixed economy like Malaysia, there is a need for the public and the private sector to collaborate. This is because the activities of the public sector affect the private sector and vice versa. The government expected that through collaboration, the public and private sectors can pool their scarce resources, skills, technology and all other critical factors to strive for optimal growth and development and to cooperate effectively to confront any internal and external challenges or crisis (Abdullah 1992). The government also expected the collaboration strategy to enable the Government to accumulate appropriate knowledge regarding the private sector, which is thought to be beneficial in the implementation of the privatisation programs (Working Committee on Malaysia Incorporated and the Role of the Government and the Private Sector 1992). In addition, the Government expected the support from the private sector to facilitate the process of liberalisation and deregulation carried out by the government (Gan 1994). Finally, the government expected the collaboration strategy to foster private sector investment in research and development activities so as to improve the competitiveness of Malaysia’s economy in meeting the challenge of liberalisation and globalisation of the world economy (Mohd Haflah and Noor Aini 1996; Government of Malaysia 1995b:5).

‘economic animals’ was used alongside it. However, the meaning of this term has changed. It is now more a term of praise and even something to be emulated.
The Malaysia Incorporated Concept

The Malaysia Incorporated Concept was officially enunciated by the Prime Minister, Dr. Mahathir Mohamad at the launching of the INTAN Forum on February 26, 1983. Eight years later, at the launching of the Malaysian Business Council on 28 February 1991, Mahathir (1991:29) once again reiterated ‘...the necessity of making Malaysia Incorporated a flourishing reality’. According to him, ‘...not all collaboration between our public and private sector is justified or productive ...but there can be no doubt that a productive partnership will take us a long way towards our aspirations’.

Many speeches and papers delivered after the launching of the Malaysia Incorporated Concept have focussed attention on supporting and elaborating the concept (Mohd. Nor et al. 1984; Tengku Ahmad 1984; Vijandran 1984; Mohd. Shahari 1985; Muhammad Rais 1996). They have called on civil servants to change their attitudes, that is, to have a positive view towards the private sector and provide them with efficient services. This change is to enable the private sector to be more productive and successful, thus providing more tax revenue to the government. The Concept also provides an opportunity for the private sector to bring problems to the attention of government. The private sector, in turn, has been called upon to develop a better understanding of national objectives and government policies, to have an enhanced sense of social responsibility, and to appreciate that the government has the responsibility to safeguard the interests of all sectors of the population. (Chan 1984; Chia 1984; Goh 1984; Haji Badri 1984; Hj. Abdullah 1984; Lee 1985;Chien 1986)

The Essential Features of the Malaysia Incorporated Concept

The Malaysia Incorporated Concept is a system of cooperation between the government and the private sector to achieve progress and shared benefits in the development process. As mentioned earlier, the main objective of the Malaysia Incorporated Concept is to foster close collaboration between the public and private sector (Haji Badri 1984; Mahathir 1984; Abdullah 1992; Ahmad Sarji 1993; Mahathir 1996; Muhammad Rais 1996; Abdullah 1997; Economic Planning Unit 1997). They are expected to work collaboratively for the benefit of the individual, as well as the society at large. This is to be achieved through the removal of the misconception of a dichotomy between the roles of the public and private sectors. The public and private sectors are expected to put to
rest their traditional antagonistic and adversarial relationship, replacing it with a symbiotic relationship based on mutual understanding, cooperation, trust and confidence in each other (Mahathir 1983, 1984; Abdullah 1992, 1997; Muhammad Rais 1996).

Conceptually, the Malaysian Incorporated Concept refers to Malaysia as a company with two sets of owners/workers (Mahathir 1983, 1984; Haji Badri 1984). The owner refers to the government and entrepreneurs, while the workers refer to civil servants and workers in the private sector (Haji Badri 1984:49). The relationship between these owners/workers is symbiotic, as shown in figure 4.7. As in any other company, both owners/workers in 'Malaysia Incorporated' are expected to cooperate for it to be viable. Both parties should have an equal stake in the company, and therefore, should share the profits equally.

Figure 4.7: **Malaysia Incorporated Concept: a symbiotic relationship**

![Diagram showing the Malaysia Incorporated Concept with a symbiotic relationship between owners/workers](image)


To have a workable and smooth collaboration, both sectors have to manage their interdependence, as shown in figure 4.8. The end result of this cooperation is that the growth of the private sector enables the government to collect more taxes. With larger revenue, the government can provide more services and can implement more programs
to reduce poverty and increase the quality of life of the population. The private sector expansion also provides more employment, leading to a reduction in unemployment and increased total purchasing power. With more income available, more goods and services will be bought and this leads to further private sector growth. This in turn will benefit the government in the form of more tax revenues that can be spent on more development programs for the whole country (Haji Badri 1984:52).

Figure 4.8: **Malaysia Incorporated Concept: managed interdependence**

Haji Badri (1984:54-6) argued that the successful implementation of the Malaysia Incorporated Concept hinges on the ability of the public and private sectors to eliminate their confrontational and adversarial relationship (attitudinal change); their ability to achieve consensus on the development goal of the nation, as proposed by the government; their ability to share information, particularly in areas where they are to collaborate; and finally, their ability to understand and appreciate each other’s role in national development. The government is expected to continue its role as the protector of public interests while the private sector will be the engine of economic development. Through the Malaysia Incorporated Concept, public investments were designed to support the expansion of the economy, and focused on infrastructure, energy and
education projects. The private sector was entrusted with a much bigger role in generating growth (Brown 1993).

The Structural Mechanisms of the Malaysia Incorporated Concept

To facilitate the collaboration between the public and private sectors, the public sector has established the necessary structural mechanisms namely (1) the Consultative Panels; (2) the Malaysian Business Council; and (3) Dialogue Sessions and Jointly Sponsored Activities (Government of Malaysia 1991b:119).

The Consultative Panels

Consultative Panels provide a formal mechanism through which the public and private sectors can exchange views on a regular basis (Government of Malaysia 1995c:136). The government issued the General Circular Letter No.2 of 1984 to direct the establishment of Consultative Panels in all Government agencies at the Federal, State and District Levels. These Consultative Panels comprise representatives from the public and private sectors and their purposes are (Government of Malaysia1991b:119):

1. to impress upon the public and private sectors that they are, in fact, partners in the national development effort;
2. to further strengthen the cooperation between the public and private sectors in the spirit of Malaysia Incorporated; and
3. to encourage the exchange of information between the two parties

The Malaysian Business Council

The Government established the Malaysian Business Council in 1991 as a vehicle for consultation and dialogue among policymakers, civil servants, corporate leaders and statesmen. Its primary objective, according to the Government, was to facilitate a productive flow of information among the key actors of Malaysia Incorporated; to act as a forum for addressing the ever-increasing needs and complex nature of the problems that constitute the challenge of industrial development; to remove misunderstandings, enhance mutual respect and help forge a healthy relationship between the public and private sectors and to promote productive cooperation and healthy collaboration between the three key actors in Malaysia’s drive towards a developed society (ISIS 1993:3-4).
The Malaysian Business Council forms the highest level forum for collaboration between the public and private sectors. It comprises 10 Cabinet members, 10 public sector members and 47 private sector members. The private sector members were appointed, in their personal capacity, for a term of two years, while members from the cabinet and the public sector were appointed on an ex-officio basis. The Office bearers of the Council comprise the Prime Minister as Chairperson and the Deputy Prime Minister as Deputy Chairperson. There are two ministerial vice-chairpersons, comprising the Finance Minister and International Trade and Industry Minister. In addition, there are eight vice-chairpersons.

**Dialogue Sessions and Jointly Sponsored Activities**

In addition to the Consultative Panels, Dialogue Sessions and Jointly Sponsored Activities are also part of the mechanism adopted to strengthen the working relationship between the public and private sectors. The difference between dialogue sessions and the consultative panel is that the consultative panel is a formal mechanism through which the public and private sectors discuss and exchange views on a regular basis. The dialogue session is *ad hoc* in nature and can be called at any time and on any issues related to policies, programs and activities affecting the private sector and their implementation, regulations and procedures, and the general performance of Government agencies. It is advisory in nature and feedback from the private sector can be obtained on current Government policies and programs for future policy planning process. Meanwhile, the Jointly Sponsored Activities are an informal mechanism in the form of jointly organised dialogues and informal activities such as sports and social events (Government of Malaysia 1995c:138-9).

**The Implementation of the Malaysia Incorporated Concept**

Prior to 1990, the implementation of the Malaysia Incorporated Concept was in doubt. Studies by Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) in 1986, 1988 and 1989 and by the Institute of Public Administration (INTAN) in 1989 found that some public sector officials were unsure how the policy was to be implemented, while the private sector believed they were merely beneficiaries, with a passive role to play. The studies also showed that the Panels were not widespread, and that only a few agencies utilised them (Working Committee on Malaysia Incorporated
and the Role of the Government and the Private Sector 1992:1). The MAMPU (Government of Malaysia 1991b:128) study in 1989 also found that middle-level public officials were still in doubt about the implementation of the Malaysia Incorporated Concept.

It was on 27 March in 1990, after the launching of the Sixth Malaysia Plan (6MP), that the Malaysian government announced its decision to accelerate the implementation of its privatisation programs (Government of Malaysia 1991a:40; Abdul Hamid 1995:7) that the Sub-Committee on the Improvement of Public Administration\textsuperscript{16}, chaired by the Chief Secretary of the Government, was established to improve the implementation of the Malaysia Incorporated Concept. The main purpose was to assist the implementation of the privatisation programs as well as other development projects. As a result, in 1991, the Development Administration Circular No. 9 entitled \textit{Guideline on the Implementation of the Malaysia Incorporated Policy} was issued. This circular set out guidelines to initiate and strengthen the cooperation between the private and public sectors that included:

\begin{itemize}
  \item[a)] The establishment of Consultative Panels in every government agencies at Federal, state and district levels;
  \item[b)] The appointment of secretaries-general, directors-general, state secretaries or district officers as Chairman of Consultative Panels with membership to be drawn from the public and private sectors;
  \item[c)] The terms of reference of these Consultative Panels which spelt out more clearly, among other duties, the reviewing of rules and regulations related to commerce and industry;
  \item[d)] That meetings of Consultative panels be held at least twice a year;
  \item[e)] The holding of annual dialogues with the private sector;
  \item[f)] The appointment of a secretariat to the Consultative panel of each agency to ensure that there is follow-up on decisions made by the Consultative Panels;
  \item[g)] Encouragement of interaction between officials of the private and public sectors through seminars, workshops and other fora to foster the sharing of information;
  \item[h)] Encouraging interaction through sports activities; and
  \item[i)] Permitting Government agencies to accept recognition from chambers of commerce and industry and business associations for excellent service rendered.
\end{itemize}

\textsuperscript{16} The Committee comprised captains of industry, officials of organisations representing the private sector, and top Government officials (Government of Malaysia 1991b).
The issuance of the Circular contributed to the improvement of public-private sector collaboration. According to a study carried out by INTAN (Government of Malaysia 1993:771), the awareness and acceptance of the Malaysia Incorporated Concept among the public sector was high after the issuance of the Circular.

The Public Sector’s Response to the Malaysia Incorporated Concept

With the implementation of the Malaysia Incorporated Concept, the public sector was required to redefine its role. With the private sector being entrusted with the lead role in spearheading economic development, the public sector was expected to assume the role of an equal partner in ensuring overall national development. In addition to its traditional role of custodian of the public good and as implementors of socio-economic development programs, the public sector was required to expand the scope of its responsibilities to facilitate and support the private sector’s growth and expansion. This includes the creation of conducive environments, including legal and regulatory parameters for rapid economic growth. The public service is also required to constantly review and improve its systems and processes to facilitate entrepreneurial efforts to achieve desired goals. In addition, the public service has to deregulate so as to ensure the continued growth of the private sector and the competitiveness of Malaysia’s exports in the international marketplace, and to encourage foreign and domestic investment in the economy (Abdullah 1992:6). The public service was also required to promote attitudinal change among the civil servants. According to Ahmad Sarji (1993:195), attitudinal change is necessary to foster mutual understanding, cooperation, trust and confidence between the public and private sectors because a successful partnership encompasses close cooperation, responsiveness, flexibility, openness and consultation.

Policies to Improve the Efficiency of the Public Sector

As mentioned earlier, the Malaysia Incorporated Concept necessitated the Public Service to embark on improving its efficiency so as to enable it to perform its duties effectively. The efforts undertaken include (Abdullah 1992:11-2):

a) Quality and productivity management;
b) Encouraging innovations in the Civil Service;
c) Improvement of counter services;
d) Improvement of systems and work procedures including the use of work action forms which facilitate the monitoring of file movement;
e) Increasing the use of information technology through the utilisation of computers;

f) The assimilation of positive values and a good work ethic;

g) Improvement of financial management, including micro-accounting;

h) Establishment of an inspectorate system to evaluate improvement efforts in the Civil Service; and

i) Conducting morning prayers to solve problems regarding the processing of licenses, permits, etc.

MAMPU also undertook efforts to simplify and streamline various systems and procedures pertaining to business and investment which addressed the problems of licensing in five sectors, viz., the manufacturing, distributive trades, hotel and tourism, housing and services such as transport and communications. These efforts were (Abdullah 1992:14-5):

a) The abrogation of out-dated licenses;

b) The introduction of composite application forms and licenses especially those issued by Local Government Authorities and the Royal Customs and Excise Department;

c) The extension of the validity period of several licenses from one to three years;

d) The reduction of procedures for processing of licenses,

e) The setting up of more one-stop centres for licensing of businesses; and

f) The delegation of powers to enable the expeditious processing of applications.

Another major initiative was the implementation of the ISO 9000 series of standards in public services to enable the public service to provide a well-planned, well-executed quality assurance and management system. The government expected that by the year 2000, all government agencies would have adopted ISO 9000 (Abdullah 1997:66). At the same time, the rapid developments in information technology and telecommunication systems have also impelled the public sector to continuously look for more sophisticated methods of service delivery in its quest for excellence. For example, the establishment of a comprehensive telecommunications infrastructure known as the Government Integrated Telecommunication Network (GITN) provides services such as video conferencing, electronic mail, bulletin boards, distance learning, tele-medicine, work-flow automation and work-group applications (Abdullah 1997:66).
Training Programs on the Malaysia Incorporated Concept

Steps were also undertaken by the Malaysian Government to enhance the understanding of the public service personnel concerning the Malaysia Incorporated Concept. This was done through training and attachment programs. A majority of the training programs were conducted by INTAN. For example, in 1994, INTAN held a total of six workshops that were attended by 542 participants, mainly from the Support Group of the Civil Service. Participants from the private sector constitute about 17 per cent of the total participants. Besides that, lectures on the Malaysia Incorporated Concept were also incorporated into other training programs such as PTA/PTD\textsuperscript{17} Courses, Total Quality Management Programs, Research Methodology Courses, and Courses for Promotion firms (Government of Malaysia 1994:285).

Besides the basic training on the Concept, an attachment program for senior Government officers was also introduced in 1983. Under this program, selected Government officers underwent training in INTAN and were later attached to the multinational corporations in various fields including business, trading, finance, insurance and manufacturing. For example, in 1994, 15 senior Government officers participated in the attachment program to British firms under the BMITA\textsuperscript{18} sponsorship and another 14 participated in the attachment program to Japanese firms (Government of Malaysia 1994:285). This cooperative endeavour is expected to lead towards the establishment of a 'network' of relationships that is expected to strengthen communication between the two sectors (Ahmad Sarji 1993:205).

The Private Sector’s Response to the Malaysia Incorporated Concept

The launching of the Malaysia Incorporated Concept was to assist the private sector to fulfil its role as the engine of economic growth. The private sector is expected to fully comprehend its wider role in the achievement of national development goals (Haji Badri 1984; Abdullah 1992; 1997; Ahmad Sarji 1993).

\textsuperscript{17} PTA refers to General Administrative Officers and PTD refers to Diplomatic and Administrative Officers.

\textsuperscript{18} This attachment program was implemented with the cooperation of the British-Malaysia Industry and Trade Association (BMITA). Arising from the success of the BMITA program, the Government expanded this cooperation to include companies originating from the United States, Europe and Japan. This new training program was undertaken jointly by the Public Service Department and the companies concerned (Ahmad Sarji 1993:205).
According to Abu Bakar (1993:4-12), the private sector has demonstrated its ability to help the Malaysian government in maintaining the growth rate momentum by participating in the privatisation program. For example, since 1983, 131 government entities and activities have been privatised, whereby the private sector has invested billions of ringgit in the infrastructure and utilities networks, particularly highways, water, energy and sewerage (Abu Bakar 1993:4-12).

According to Atok (1993:26), the international business community in Malaysia has high regard for the Malaysia Incorporated dialogue system and its network. He supported the idea that liaison with the government constitutes an essential feature of a trade association’s strong points and he attributed the achievements of the Malaysian International Chamber of Commerce and Industry (MICCI) largely to active communications with the public sector.

Atok (1993) also indicated that the MICCI has been regularly submitting an annual business assessment survey, which evaluates the performance of government departments. Follow-up dialogues to discuss the findings of the survey have been organised by the public sector. For their part, the private sector gathers to evaluate and commend consistent practices of efficiency by government agencies and present them with the annual Private Sector’s Efficiency Awards. Atok (1993:27), however argued that the lower strata of the public service, in particular those at the operational level, are still lacking in terms of their upholding of the spirit of Malaysia Incorporated.

**Initial Evaluation of Public-Private Sector Collaboration in Malaysia**

Two earlier evaluations have been conducted on the implementation of the Malaysia Incorporated Concept, both in 1986 by government agencies. Officials in MAMPU carried out the first study and their findings indicated that the implementation of the Malaysia Incorporated Concept by the public and private sectors was not satisfactory because (Government of Malaysia 1986b:21):

a) The public and private sectors did not fully understand the Malaysia Incorporated Concept;

b) The private sector assumed that the public sector was solely responsible for the implementation of the concept;
c) The channels of communication between the public and private sectors were not modified according to the requirements of the General Circular No.2 of 1984;
d) The private sector felt that the established panels and committees were not able to facilitate the dissemination of information as required of them;
e) Some government agencies preferred a one-to-one communication with individuals in the private sector, rather than through panels and committees; and  
f) Government officials, especially those dealing with the private sector, were not properly trained in the areas of negotiation and public communication.

The second study was carried out by Doh Joon Chien (1986) for INTAN. The objective of the study was to propose recommendations towards making the Malaysia Incorporated Concept a productive relationship, especially in the field of manufacturing. His positive findings regarding the Malaysia Incorporated Concept were (Chien 1986:2):

a) The meaning of the Malaysia Incorporated Concept was widely known among the staff of the economic, trade and regulatory agencies of the government and senior executives of manufacturing companies.
b) They also demonstrated positive attitudes towards the concept.
c) Some of the agencies had already established a formal mechanism for communication between the government and the manufacturing sector.
d) The manufacturing companies had shown their willingness to participate in government committees and bodies, and also to put forward suggestions and proposals to government.
e) They were used to the practice of approaching government agencies directly to resolve their problems.
f) More conscious attempts had been made by government agencies to take the private sector and the general public into consideration in undertaking administrative and organisational changes, the training of staff, and the provision of services.
g) Both government agencies and the manufacturing companies had carried out activities that were conducive to the success of Malaysia Incorporated.

His negative findings were as follows (Chien 1986:2-3):

a) A significant percentage of manufacturing companies was sceptical about whether the government would be more responsive to their business needs.
b) There was lack of consensus on the part of the economic, trade and regulatory agencies about what government expects from the manufacturing sector; the latter, understandably, was also uncertain about how to respond to government initiatives.
c) Some agencies had not yet set up a formal mechanism to foster closer working relationships with the private sector or to carry out special orientation and training of staff that serviced the general public.
d) The majority of the companies had not perceived any improvement in their working relationship with the government, and was dissatisfied with the services provided by its agencies.

e) A substantial percentage of government agencies was also dissatisfied with the performance of the manufacturing sector.

f) Serious weaknesses existed in both the government and the manufacturing sector, which had been highlighted not only by the other party but also had been recognised by each side itself.

Although the objectives of the studies were different, the findings are almost similar. Both studies concurred that three years after the Malaysia Incorporated Concept was launched; the implementation of the Concept was not satisfactory. MAMPU’s study attributed this partly to the public servants’ lack of understanding in regard to the requirements of the Concept and the private sector personnel’s assumption that the implementation of the Concept is solely the responsibility of the public sector. Chien’s (1986) findings, seems to suggest that the public servants and private sector personnel supported the Concept and thus the idea that there should be a collaboration between them. However, they were sceptical as to the ability of Concept to actually improve their working relationship, hence the lack of serious efforts on both sides to fully implement the Concept.

Also on issues related to communication between the public and private sectors, there were consensuses between these studies. For examples, MAMPU’s study found that some channels of communication between the public and private sectors were not modified according to the requirements of the General Circular No.2 of 1984. Chien, on the other hand, indicated that some agencies had not yet set up formal mechanisms to foster closer working relationships with the private sector. MAMPU indicated that the private sector was of the opinion that the establishment of Consultative Panels and

19 Weaknesses in government agencies were: (1) in efficiency and red tape associated with negative attitudes toward the private sector and work as a whole; (2) system deficiency; and (3) inadequate infrastructural facilities (Chien 1986:3).

20 Weaknesses in (or problems faced by) the manufacturing sector were: (1) inefficiency; (2) input problems; (3) size of market; (4) knowledge deficiencies; (5) inadequate cooperation from government; (6) dependency; and (7) lack of social objectives (Chien 1986:3).

21 The objectives of the study by MAMPU were to find out (1) the progress of the implementation of the Consultative Panels in Government Agencies, (2) issues related to its implementation and (3) other methods to foster effective communication between the public and the private sectors. Meanwhile, the objectives of Chien’s study were to find out in regards to (1) the status of the Malaysia Incorporated Concept, (2) issues related to all aspects of communications and (3) to suggest what need to be done to resolve the issue.
Committees would not be able to facilitate the dissemination of information as required by them. Chien, on the other hand, suggested that the majority of the companies had not perceived any improvement in their working relationship with the government, and was dissatisfied with the services provided by its agencies.

Besides, the Concept requires a change of attitude among the public servants and private sector personnel. Such is not an easy task because as explained earlier, the nature of their working relationship has been a mixture of distrust and awareness of the importance of one to the other. To change such attitude will take time because it is not easy to convince someone to change his/her attitudes towards something especially if such attitude has been ingrained in him/her over a considerable period of time. As such, it is expected that it will take sometime before the Concept can be fully accepted and implemented by the public servants and private sector personnel. They would have to trust each other before they could collaborate fully.

In regard to the methodology used by these studies, both used mailed questionnaire and interviewed methods. MAMPU’s samples were chosen among 18 government agencies, 5 trade associations and 6 individuals. 100 questionnaires were posted and 69 were returned. In addition, 25 individuals were interviewed by MAMPU. Meanwhile, Chien’s respondents were government agencies, factory, Federated of Malaysia’s manufacturers, and Trade Commissioners. A total of 170, 303, 17 and 28 questionnaires were posted to each of these agencies respectively. Out of these totals, 72, 100, 8 and 11 were returned respectively. In addition, Chien interviewed 34 government officers and 49 manufacturers. Based on the sample, Chien’s study seems to be balanced in terms of representation from the public and private sectors, while MAMPU’s study is skewed towards the public sector. This is acceptable because Chien is interested in the implementation of the Malaysia Incorporated Concept as a whole and what need to be done in the future. Therefore, he needs to get a balance views from both sectors. MAMPU, on the other hand, is more interested in the implementation status of the Consultative Panels in government agencies for administrative purposes.

In terms of the private sector participation in the Consultative Panels, Abdullah (1992:23-6) highlighted several shortcomings: They were:
a) **Biased perceptions.** The tendency of the private sector to view the implementation of Malaysia Incorporated primarily as the responsibility of the government sector.

b) **Leadership Crisis.** There is evidently a crisis in leadership in the implementation of Malaysia Incorporated. The expectation is that government and the public sector should provide the initiative while the private sector is left with the discretion to enter into this partnership or to ignore it altogether. Consequently, most Consultative Panels tend to be over-represented by government officials, thereby rendering an imbalance instead of equal participation and partnership in development.

c) **Fragmentation and Heterogeneity of the Private Sector.** The private sector is fragmented and heterogeneous, largely unorganised and uncoordinated even within sectoral territories and spheres. Consequently, competing interests, vested interests and the subsuming of national interests to individual company interests, is more often than not the order of the day.

d) **Communication Constraints.** Communication under Malaysia Incorporated is still largely confined to formal channels and to those sub-sectors of the private sector economy that are relatively well organised.

e) **Inadequate Information Sharing/Information Flow.** There is rampant dissatisfaction with the state of information sharing and flow. The private sector has time and again indicated the weaknesses of information dissemination from government. The private sector also has responded ineffectually to information gathering from government, an exercise that is often viewed with suspicion by the private sector. There is a general reticence by the private sector to submit views and suggestions on streamlining of rules, regulations and procedures, even when these are solicited. The private sector’s feedback and input, while limited, are often inaccurate and fragmented due to a lack of coordination among various sub-sectors within industry.

Abdullah’s (1992) suggestion that the Malaysian private sector viewed the implementation of the Malaysia Incorporated Concept, as the responsibility of the public sector is fair insofar as taking the lead to organised meetings or discussions between them. This is because the responses from the private sector, as discussed earlier, suggested that the private sector is always willing to participate in the meeting organised by the public sector. They are also willing to contribute their opinion and ideas on any issues, policy and strategy to the public sector. In fact, this seems to be far more important and in line with the spirit of the Concept than merely organising a meeting or discussion, although undoubtedly such is an important start.

Apart from the two initial studies, several analysts (Koike 1990; Zullinger 1993; Bowie 1994; Khoo 1995; Gomez and Jomo 1997; Jomo and Gomez 1997) have also commented on Malaysia’s public and private sectors relations. In general, they
commented mainly on the relationships between politicians and businesspersons, especially *bumiputera* businesspersons. For example, Jomo and Gomez (1997:362) pointed out that:

Public and *Bumiputera* enterprises were generally assured of favourable government treatment, particularly through licenses, contracts, and access to financial information especially if supported by influential politicians; in many cases, politicians also became actively involved in business.

Jomo and Gomez (1997:370) further wrote:

By providing lucrative business opportunities to some Chinese and Indian businessmen, the state has managed to reduce some ethnic dissent among the non-Malay communities.

Khoo (1995:153) provided the following observation regarding state-capital alliances:

In the sense, Mahathir’s 1980’s rapture over ‘privatisation’ and ‘Malaysia Incorporated’ had no less radical ideology significance: they offered a new basis for a new alliance between state and capital, or, should one say, capitals. …Here, at last, was the material basis for a new vanguard – a ‘Malay-state-Malay capital’ alliance leading ‘non-Malay capital’

Koike (1990:84) argued that in Malaysia the political party and the bureaucrats organised and operated business groups under government patronage. He suggested that this patronage system is the cause of the *bumiputera*’s dependency syndrome and the dampening of the Chinese sector, which in effect has become the main negative factor leading to a slackening of the national economy through the deepening reliance on foreign MNCs (Koike 1990:88).

Bowie (1994:190) described the business-government relations in Malaysia as Patron-Client ties. According to him, Malaysia’s economy has never been a free market. Even under the relatively *laissez-faire* regime of the 1960s, the government commitment to market mechanisms and private entrepreneurship was tempered by prior concern with improving the economic status of the Malay community, especially in rural areas. He further argued that the characteristic patterns of business-government interaction in Malaysia have not permitted government economic decision-makers to insulate themselves from societal pressures. During the phases of market-led, state-regulated and state-led growth that characterised Malaysia’s industrial development policy during the
1960s, 1970s and early- to mid-1980s, respectively, the state has been both dependent on foreign investment and at the same time tied in a symbiotic relationship with domestic business that is largely, but not exclusively, ethnically defined.

Gomez and Jomo (1997:177) supported Bowie’s description of the business-government relations in Malaysia. According to them, with the commendable objectives of Vision 2020, the National Development Policy (NDP), the Second Outlines Perspective Plan (OPP2) and the 6MP as well as the more ‘Malaysian-oriented’ – as distinct from the NEP’s ‘Bumiputera oriented’ – vein of these policies, government practices of according preferential treatment to Bumiputeras have changed during the 1990s but arguably not diminished. Rents of various forms continue to be extensively provided by the government, now ostensibly in order to create competent Bumiputera entrepreneurs. They further argued that the creation and disbursement or allocation of these rents has been crucial for continued political hegemony as rent-financed, patron-client relations continue to be important in Malaysia politics (Gomez and Jomo 1997:177).

Zullinger (1993:90), however, provided a different perspective to public-private sector relations in Malaysia. He said:

I have rarely come across an environment as open and supportive of the private sector as we have today in Malaysia. Efficient communication from the private sector right to the top echelons of the government, the government’s determination to take action, its pragmatic attitude, and the ability to correct what may hinder investment and growth, without any doubt go to make up the cornerstone of Malaysia’s success story.

The Asian Financial Crisis and its impact on Malaysia’s Public-Private Sector Collaboration

In the period 1991-97, The Malaysian economic grew at a rapid at 9.2 per cent per annum, exceeding the long-term average growth of 6.8 per cent achieved over the previous three decades. The growth was accompanied by rising per capita income and reduction in the incidence of poverty, as well as low rates of inflation, full employment and strong fiscal position. Consequently, the standard of living of all Malaysians

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22 Rents such as discounted privatisation payments, overpriced contracts, permits and licenses, special loan and credit facilities, as well as subsidised training and education opportunities (Gomez and Jomo 1991:177).
improved (Government of Malaysia 1998). However, in the second half of 1997, the Malaysian economy was affected by the contagion effect of the Asian financial crisis, which began in mid-1997 following the devaluation of the Thai Bhat and subsequent speculative attack on the East Asian currencies.

Early into the crisis, The Malaysian government introduced a series of measures that were in line the International Monetary Fund’s (IMF) prescriptions for other regional economies. However, the two measures were highly deflationary and as a result the aggregate demand contracted and worsened the contraction of the economy. The Malaysian government decided to abandon the approach and established the National Economic Action Council (NEAC) in January 1998 as the mechanism to deal with the crisis. In line with the public-private sector collaboration approach, NEAC consist of decision-makers at the highest levels responsible for the economic, fiscal and monetary policy, state governments, key government officials, the private sector, experts and other interest groups. The executive committee of the NEAC met almost daily to discuss on wide-ranging issues to formulate policies and strategies to resolve the economic crisis. The NEAC prepared the National Economic Recovery Plan (NERP) as the blueprint for economic recovery. The NERP, contained many recommendations to stabilize the currency, restore market confidence, and maintain financial market stability, as well as measures to address medium-term issues such as improving economic fundamentals and addressing the equity and socio-economic agenda (Government of Malaysia 1998).

In addition to NEAC, the Malaysian government also established Danaharta, an asset management company to remove the non-performance loans (NPLs) from the financial institutions. The aimed was to avoid the closure of banks and other financial institutions in Malaysia. With the removal of NPLs, the banks and the financial systems were expected to carry on with their lending operation to stimulate aggregate demand. To enable them to do this, the government set up another institution to re-capitalized the banks and the financial institutions. Danamodal was set up as a special purpose vehicle

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23 The IMF prescriptions to address the financial crisis were (1) the tightening of monetary policy by increasing interest rates and limiting credit growth and (2) Greater fiscal restraint by reducing government expenditure (Government of Malaysia 1999)

24 The economy contracted by 7.5 per cent in 1998. Private investment contracted by 55.2 per cent and private consumption fell by 10.8 per cent. Public investment and consumption fell by 8.4 per cent and 6.6 per cent respectively (Government of Malaysia 2000)
to capitalize and consolidate the banking sector by injecting capital into viable but undercapitalised banks to ensure that they met the standards for capital adequacy.

As for the trouble companies, the government set up the Corporate Debt Restructuring Committee (CDRC) to facilitate debt restructuring of viable companies outside the courts. The objective was to minimize losses to creditors, shareholders and other stakeholders, avoid placing viable companies into liquidation or receivership, and enable banking institutions to assume a greater role in rehabilitating the corporate sector.

As in the case of other East Asian crisis economies, governance, particularly corporate governance was also an issue in the Malaysian situation. Recognizing the need to enhanced standards of corporate governance, the Malaysia government set up a committee to review the framework for corporate governance and established best practices for industry. As result, the Malaysian Code of Corporate Governance was introduced. The Code comprising principles and best practices for good governance by listed companies; identifies necessary measures on training and education; and recommended the strengthening of the statutory and regulatory framework for corporate governance.

As a result of the measures undertaken by the Malaysian government, the economy rebounded with real GDP growing at 5.8 per cent in 1999 and 7.5 per cent in 2000, after the sharp contraction in 1998 (Government of Malaysia 2000). The strong global demand coupled with the depreciated Ringgit has increased Malaysia's exports, thereby stimulating growth in manufacturing and related sectors. On the domestic front, the measures introduced in the NERP has brought the return of confidence and revived domestic demand. For example, the government’s fiscal stimulus package introduced during the crisis to revitalize the economy has increased total investment into positive growth territory. Private domestic consumption recovered in the second quarter of 1999, supported by strengthening consumer sentiments, improving economic conditions and better employment prospects (Government of Malaysia 2000).

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25 The contraction of total investment was reduced to 5.9 per cent in 1999 compared with 43.0 per cent in 1998. Total investment registered a growth of 19.8 per cent in 2000 (Government of Malaysia 2000).
In summary, the discussions indicated that the Malaysian government has fully utilized the public-private sector approach in dealing with the economic crisis. For example, the NERP was formulated based on the consultation between the public and private sector in NEAC. In addition, the establishment of Danaharta, Danamodal and CDRC were in line with the spirit of the Malaysia Incorporated Concept. Through Danamodal, the government injected capital into the financial sector to prevent it from collapsing and worsen the economic situation. The CDRC was used as a vehicle to encourage creditors and borrowers to settle their problems outside of court.

Conclusions

In the early years of economic development, the Malaysian government’s role was limited. Its role changed significantly after the May 13 1969 racial riot and the launching of the New Economic Policy in 1971, where the need to achieve the targets set by the government saw it venture beyond its traditional functions to actively participate in the commercially related activities of the economy. However, adverse macro-economic developments in the mid-1980s forced the government to re-orientate its role and to promote greater private sector involvement in the development process. Nevertheless, government interventions continue to be consistently high but largely in support of private sector initiatives. However, there is dispute about which private sector interests are being served.

As regards public-private sector collaboration in the development process, the discussion indicates that prior to 1990, the implementation of the Malaysia Incorporated Concept has not been satisfactory because of lack of commitment on the part of public servants and private sector personnel. Only after 1990, the Malaysian public sector seems to become more committed to this strategy. Since then various strategies and policies were formulated and implemented to ensure the effectiveness of this mechanism. Consultative Panels, Dialogue Sessions and Jointly Sponsored Activities were the formal and informal vehicles used by the public and private sectors to regularly meet and exchange views on policies and strategies that will affect private sector activities. This mechanism was also used by the public sector to convey the national development goals to the private sector so as to ensure the private sector is fully aware of their role in terms of the achievement of these goals.
However, whether the Malaysia Incorporated Concept is fully endorsed by the public servants and the private sector personnel is an issue that is being evaluated in this thesis. Earlier studies, mainly concentrated on the implementation of the Malaysia Incorporated Concept, found that prior to 1990 implementation was lack-lustre. It was only after 1990, especially after the Malaysian Government announced its policy to accelerate the implementation of the privatisation program, that implementation of the Concept gained momentum. Nevertheless, it seems that the initiatives to promote collaboration between the public and private sectors have been undertaken mostly by the public sector. The response from the private sector seems to be largely in the privatisation programs and in Consultative Panel's discussions and dialogue sessions with the public sector. As to whether the public servant and private sector personnel support for the public-private sector collaboration strategy is fully complying with the spirit of the Malaysia Incorporated Concept and is thus contributing to Malaysia's socio-economic development remains to be seen.
Chapter 5
Research Methodology

Introduction

Previous chapters reviewed the literature regarding the role of the state and market in the development process (Chapter 2); and the role of state and market in the development process in the USA and Japan (chapter 3). Chapter 4 provided an overview of public-private sector relations in Malaysia’s development strategy. These chapters set the general framework for the evaluation of public-private sector collaboration in Malaysia’s development process. This chapter presents the research methodology used in the thesis to gauge the perceptions of Malaysian public servants and private sector personnel with regard to the public-private sector collaboration strategy (chapter 6).

Eliciting Perceptions of the Public and Private Sectors Regarding State and Market Collaboration in Malaysia’s Development Process

As stated in chapter 1, as a field of study, public-private sector collaboration in the development process is difficult to confine empirically and difficult to limit theoretically. Moreover, the state-market collaboration is a new phenomenon, largely to explain the East Asian economic development (chapter 2). Nevertheless, a majority of discussions on the role of state and market in the development process are generally confined to advantages or disadvantages of either a state or a market-led development strategy (chapter 2). This thesis is trying to find out if there is a role for state-market collaboration in the development process.

However, it is generally difficult to establish statistical links between development and specific state intervention. Moreover, North (1990:11) argued that the existing theories were not able explain the persistence in the disparity in the performance of economies. This was because an understanding of the nature of human coordination and the condition under which cooperation were possible were missing from theories. Therefore, instead of measuring the impact of specific policy or strategy on development, the study applies the perception approach as a tool to examine if the state-market collaboration has taken place in Malaysia’s development process. The thesis assume that if Malaysia’s private sector personnel perceive public servants as effective and efficient and vice versa, then there is a possibility that they may be willing to collaborate in the development process, especially if they also perceive such
cooperation to be beneficial to them. However, if the opposite is true, then they may either refuse to cooperate or their cooperation will be laced with negative elements such as abuse of power and corruption. This assumption may be simple and may be subject to some limitations in its ability to explain the actual situation. But, as indicated in Chapter 1, a theory of behaviour that assumes there is a difference between what is true and what people believe to be true can make better predictions of what they will do than a theory assuming omniscience (Telser 1987:10).

**Data Collection**

Since the study is based on the perceptions of public servants and the private sector personnel, it has to depend on primary data. This primary data was collected through survey using mailed questionnaires and personal interviews. According to Babbie (1986:203-204) survey research is probably the most appropriate method available to the social scientist interested in collecting original data for describing a population too large to observe directly. Survey is also excellent vehicles for measuring attitudes and orientations in a large population. Questionnaire and interview are essential to and most directly associated with survey research.

Given the usual constraints of time and resources, a mail survey is a typical method used in self-administered studies (Babbie 1986). The advantages of the mailed questionnaire method are, among others: (1) respondents can answer the questions without being influenced by the interviewer; (2) it can reach widely dispersed addresses and (3) it is cheaper than other method. However, a question frequently asks concern the percentage return rate that should be achieved in a mail survey. A quick review of the survey literature will uncover a wide range of response rates. Babbie (1986:221) suggested that, as a rule of thumb, a response rate of at least 50 per cent is adequate for analysing and reporting. A response of at least 60 per cent is good and 70 per cent is very good. But, these are only rough guides and have no statistical basis. What is more important is a demonstrated lack of response bias is far more important than a high response rate.

**The Questionnaire**

Three sets of mailed questionnaires were developed: one for the public sector, one for the private sector, and one for the trade associations. The questionnaire used in the survey was derived from the questionnaire used by the Subcommittee of the Committee
for Economic Development, USA, in its study of Business-Government Relations and Interdependence: a managerial and analytical perspective (Stevens, 1988). Modifications were made to incorporate the element of the perception concept into the questionnaire in order to fulfil the purpose of this thesis.

The questionnaire was divided into three parts. The first part covers general background which included questions such as the major functions of the respondent’s organisation, the respondent’s position, number of years in the organisation, the respondent’s major function and how the respondent would describe the relationship between his/her organisation and the public/private sector. The second part of the questionnaire comprised statements on issues related to the Malaysia Incorporated Concept. In this part, there were 20 statements related to the general issues in public-private sector relations, 21 statements regarding public-private sector collaboration, 20 statements on the effectiveness of the Malaysia Incorporated Concept and 12 statements on the effectiveness of the administrative improvement programs. The last part of the questionnaire comprised questions regarding the person filling in the survey such as ethnicity and sex. There were extra statements provided to the private sector and the trade associations. They comprised statements related to the means by which the private sector identified public policy (refer to Appendices 1, 2 and 3). The public and private sectors were requested to state their opinion regarding the statements in part two using the scale of 1 to 5. The numeral 1 represents ‘strongly disagree’, 2 represents ‘disagree’, 3 represents ‘neutral’, 4 represents ‘agree’, and 5 represents ‘strongly agree’.

There are a number of general weaknesses in most response style. The problem with the method used in this questionnaire is the tendency to record in a pattern determined by features other than those which existed in real situation. For example, one respondents or observers may constantly answer ‘strongly agree’ while another prone to ‘strongly disagree’. One of the most difficult to overcome is the social desirability responses set where respondents tends to support what he/she considers to be a socially acceptable

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1 For his study, Stevens (1988) adopted the dual foci of resources dependence and organisational relationship approach. His approach examines questions that integrate propositions from resource-dependence, inter-organisational, and business-government relations’ literature. The underlying premise in the general design of his study was that business-government relations are pertinent to resource-dependence and system issues in the overall environmental context. His basic theoretical and practical argument is that inter-organisational or inter-sectoral relationships will be associated with mutual strategies and resource dependence as perceived by the public and private sectors. For example, if there are high levels of perceptions regarding resource dependence, then inter-organisational strategies of business-government relations will be affected.
way of behaving, or what he/she thinks the researchers wants him/her to say. It is not easy to overcome this type of weaknesses. However, to reduce this type of biases and ensure validity of the responses, several questions related to the same subject were constructed. For example, there were 5 questions related to the private sector participation in the policy formulation process. They were questions 25, 26, 28, 70 and 71. They represent a ‘should be’ question such as question 28 and ‘matter of fact’ questions such as question 25, 26, 70 and 71.

The Sample

For the survey, the manufacturing sector was chosen to represent the private sector because, since the mid-1980s, this sector’s contribution to the Malaysian economy has been substantial (refer table 5.1, figure 5.1 and Chapter 4). The sample from the manufacturing sector was selected based on the share of industries to total manufacturing value-added located in Klang Valley and members of the Federation of the Malaysia Manufacturers (FMM). As shown in Table 5.2, producers from the Food, Chemical and Electrical and Electronic industries were selected because these industries made up almost 54.5 per cent of the total manufacturing value-added in 1995. From these industries, 100 local manufacturing companies located in Klang Valley were selected for the survey. The FMM Directory for 1997 was used in making the selection.

Figure 5.1: Sources of Exports, 1980 and 1997

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>18.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Mfg</td>
<td>21.6</td>
<td>82.3</td>
</tr>
<tr>
<td>Oil&amp;Gas</td>
<td>24.1</td>
<td>6.2</td>
</tr>
<tr>
<td>Tin</td>
<td>8.9</td>
<td>0.2</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>10.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Rubber</td>
<td>16.4</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Table 5.1: Structure of Production (Share of Total GDP), 1960-97

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>34.0</td>
<td>29.0</td>
<td>22.9</td>
<td>18.7</td>
<td>11.9</td>
</tr>
<tr>
<td>Mining</td>
<td>7.0</td>
<td>13.7</td>
<td>10.1</td>
<td>9.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5.0</td>
<td>13.9</td>
<td>19.6</td>
<td>27.0</td>
<td>35.7</td>
</tr>
<tr>
<td>Construction</td>
<td>3.0</td>
<td>3.8</td>
<td>4.6</td>
<td>3.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Services</td>
<td>45.0</td>
<td>36.2</td>
<td>40.1</td>
<td>42.3</td>
<td>40.8</td>
</tr>
</tbody>
</table>


Table 5.2: Manufacturing Value-added, 1990-95 (RM million in 1978 prices)

<table>
<thead>
<tr>
<th>Industries</th>
<th>1990</th>
<th>1995</th>
<th>% to total Value-added</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1990</td>
</tr>
<tr>
<td>Food Manufacturing</td>
<td>3,152</td>
<td>3,887</td>
<td>14.8</td>
</tr>
<tr>
<td>Tobacco</td>
<td>501</td>
<td>458</td>
<td>2.3</td>
</tr>
<tr>
<td>Textiles &amp; Clothing</td>
<td>1,458</td>
<td>2,505</td>
<td>6.8</td>
</tr>
<tr>
<td>Wood &amp; Cork Products</td>
<td>1,305</td>
<td>2,130</td>
<td>6.1</td>
</tr>
<tr>
<td>Industrial Chemical and Other Chemical</td>
<td>3,489</td>
<td>5,438</td>
<td>16.3</td>
</tr>
<tr>
<td>Petroleum Refineries</td>
<td>402</td>
<td>671</td>
<td>1.9</td>
</tr>
<tr>
<td>Rubber Remilling &amp; Latex</td>
<td>640</td>
<td>653</td>
<td>3.0</td>
</tr>
<tr>
<td>Rubber Products</td>
<td>1,161</td>
<td>2,498</td>
<td>5.4</td>
</tr>
<tr>
<td>Non-metallic Mineral Products</td>
<td>1,664</td>
<td>2,799</td>
<td>7.8</td>
</tr>
<tr>
<td>Iron, Steel and Non-ferrous</td>
<td>831</td>
<td>1,563</td>
<td>3.9</td>
</tr>
<tr>
<td>Fabricated Metal Products</td>
<td>615</td>
<td>3,109</td>
<td>2.9</td>
</tr>
<tr>
<td>Electronic Machinery, Apparatus</td>
<td>5,051</td>
<td>12,398</td>
<td>23.7</td>
</tr>
<tr>
<td>Transport Equipment</td>
<td>1,068</td>
<td>1,718</td>
<td>5.0</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>29</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>21,340</td>
<td>39,856</td>
<td>100</td>
</tr>
</tbody>
</table>


Beside local manufacturing companies, selected trade associations were also analysed to supplement the views of the individual companies. This is because, upon checking with the consultative panel’s secretariat in the Ministry of International Trade and Industry and the Ministry of Finance, the private sector was usually represented by its trade associations in the consultative panel meeting. Therefore, it was felt that the trade associations could provide some additional views on the subject.
Meanwhile, 150 questionnaires were sent to three ministries to represent the public sector's view for this study. The Ministry of International Trade and Industry, the Ministry of Domestic Trade and Consumer Affairs and the Ministry of Works were chosen because of their extensive dealings with the private sector. The respondents chosen from the public sector were from the middle management level, that is, category M3 and M2 officers. They were considered to be appropriate for this purpose because their day-to-day jobs were directly connected with the private sector.

**The Interview**

The interview is an alternative method used to collect data for this study. There are a number of advantages in the interview method. Firstly, the interviewer could persuade the respondents more readily because of his/her physical presence. Secondly, complex questionnaires may be used successfully under interviewers' urging. Thirdly, if respondents are having trouble understanding the questions, interviewer are able to remedy the situation and finally, interview method ensure better sample (or less refusal) of the population. The disadvantages with interview method are, among others: (1) travel time and expense to locate respondents is often considerable; (2) because respondents knows that they can be identified, they may be reluctant to provide the necessary information and (3) interviewers' presence, personalities and inflections may bias responses (Goode and Hatt 1952, Babbie 1986, Scheaffer, Mendenhall and Ott 1986). Nevertheless, for the thesis, the interview method was used to check on the reliability of responses given in the mailed questionnaires as well as for clarification on statements that received conflicting response.

Follow-up interviews were conducted after the closing date of the survey. 10 respondents from 10 companies and 5 respondents each from the Ministry of International Trade and Industry, Ministry of Domestic Trade and Consumer Affairs and Ministry of Works were chosen for these interviews. The same set of questions was used during these interviews.

**Responses from the Public and Private Sectors**

The private sector was given one month to fill-out the questionnaire and return it to the author. 100 questionnaires were sent on 1 June 1997 to the selected companies. The majority of people responding did submit their responses by the due date. As for the public sector, the questionnaires were sent on 1 July 1997 and the due date was 30 July
1997. As in the case of the private sector, the majority of the respondents returned the questionnaires by the due date.

Out of 100 questionnaires sent to the private sector only 34 returned the questionnaires. Out of the total 150 questionnaires sent to the public sector, 56 or 37.3 per cent returned the questionnaires. Another 25 questionnaires were sent to trade associations but only 7 were returned. Table 5.3 shows the distribution of responses according to organisation. Out of 41 private sector respondents (including the trade associations), 17 were from food industries, 8 from electric and electronics industries and 5 from chemical industries. As for the public sector, 19 responses were from the Ministry of International Trade and Industry, 18 from the Ministry of Domestic Trade and Consumer Affairs and 19 from the Ministry of Public Works.

Table 5.3: Distribution of Respondents according to Organisation

<table>
<thead>
<tr>
<th>Private Sector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>17</td>
</tr>
<tr>
<td>Electric and Electronics</td>
<td>8</td>
</tr>
<tr>
<td>Chemicals</td>
<td>5</td>
</tr>
<tr>
<td>Did not specify</td>
<td>4</td>
</tr>
<tr>
<td>Trade Associations</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Public Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of International Trade and Industry</td>
</tr>
<tr>
<td>Ministry of Domestic Industries and Consumer Affairs</td>
</tr>
<tr>
<td>Ministry of Public Works</td>
</tr>
</tbody>
</table>

Table 5.4 shows the distribution of respondents according to their function. The majority of the private sector respondents were general managers; others were administration, planning, accounting, production and marketing personnel. For the trade associations, two of the respondents were executive directors and two were secretaries of the associations. Three did not specify their positions. For the public sector, 33 of the respondents were the M2 officers and 23 were M3 officers.
Table 5.4: Distribution of Respondents according to Function

<table>
<thead>
<tr>
<th>Private Sector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Manager</td>
<td>11</td>
</tr>
<tr>
<td>Planning</td>
<td>7</td>
</tr>
<tr>
<td>Administration</td>
<td>8</td>
</tr>
<tr>
<td>Marketing</td>
<td>1</td>
</tr>
<tr>
<td>Accounting</td>
<td>5</td>
</tr>
<tr>
<td>Production</td>
<td>2</td>
</tr>
<tr>
<td>Trade Associations</td>
<td></td>
</tr>
<tr>
<td>Executive Director</td>
<td>2</td>
</tr>
<tr>
<td>Secretary</td>
<td>2</td>
</tr>
<tr>
<td>Not Specified</td>
<td>3</td>
</tr>
<tr>
<td>Public Sector</td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>33</td>
</tr>
<tr>
<td>M3</td>
<td>23</td>
</tr>
</tbody>
</table>

Background of respondents

In terms of the background of respondents, 40 out of 41 respondents from the private sector were male. For the public sector, 36 respondents were male and 20 were female. The distribution of respondents according to ethnicity is as shown in table 5.5. For the private sector, the majority of the respondents were Chinese while for the public sector the majority of respondents were Malays.

Table 5.5: Background of Respondents: Gender and Ethnicity

<table>
<thead>
<tr>
<th>Gender</th>
<th>Private Sector</th>
<th>Public Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>8</td>
<td>45</td>
</tr>
<tr>
<td>Chinese</td>
<td>27</td>
<td>6</td>
</tr>
<tr>
<td>Indian</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

As for the number of years in the organisation, table 5.6 shows that the majority of the respondents have been in their organisation between one and five years.
Table 5.6: Background of Respondents: Number of Years in Organisation

<table>
<thead>
<tr>
<th></th>
<th>Private Sector</th>
<th>Public Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>1 to 5</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>6 to 10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

Meanwhile, 39 out of 41 respondents from the private sector indicated that their organisation requires government’s services. The majority of the companies stated that licenses and approvals were the main services required from the government. Other services include export documentation, sales tax from Custom and Excise Departments, health certificates for exports from the Health Department, services from the Chemistry Department for certain analysis work, services from Inland Revenue and Employees Provident Funds, the coordination and regulation of foreign investments, services from the Immigration Departments and services from the Machinery and Equipment Department and SIRIM.

As for the trade associations, the type of services they required from the government include (1) information on policy and procedures, (2) assistance in trade and marketing expansion, (3) cooperation in education awareness programs for manufacturers, (4) interaction with the Ministry of Human Resources Department, (5) participation in policy-making at national level, (6) administrative procedures as an employee and trade union of employers, (7) administration of export licensing, (6) feedback and monitoring of export performance, (8) feedback on government as well as global trade policies and legislation that affects trade in general and the industry in particular.

**Framework for Assessing the Perceptions of the Public and Private Sectors Regarding the Public-private Sector Collaboration Strategy**

The perceptions of the public and private sectors regarding the public-private sector collaboration strategy in Malaysia’s development process is analysed using the framework shown in figure 5.2. The discussion is divided into two parts. The first part discusses the perceptions of the public and private sectors regarding: (1) public-private sector relations; (2) public-private sector collaboration; and (3) the effectiveness of the
Malaysia Incorporated Concept. The second part discusses the impacts of regulatory cooperation on policy formulation and public-private sector relations.

Figure 5.2: Framework for Assessing Perceptions on Public-Private Sector Collaboration in Malaysia

Public and Private Sectors' Perception on:

- Public-private sector relations:
  - The role of the public and private sectors
  - The public-private sector relations
  - Resource dependence, societal and political influences

- Public-private sector collaboration:
  - Industrial Policy
  - The public-private sector collaboration
  - Effectiveness of the public-private collaboration

Effectiveness of the Malaysia Incorporated Concept


To facilitate the comparisons, the responses of the public and private sectors were first aggregated into three categories: (1) those that either 'disagreed' or 'strongly disagreed' with the statement; (2) those that either 'agreed' or 'strongly agreed' with the statement; and (3) those that recorded either no response or a neutral response to the statement. Then the following additional descriptors for the comparisons were used:

1. if the percentage of the group that 'agreed' or 'strongly agreed' is greater than 75 per cent, the descriptor is 'strongly supported';
2. if the percentage of the group that 'agreed' or 'strongly agreed' is greater than 50 per cent but less than 75 per cent, the descriptor is 'supported';
3. if the percentage of the group that 'disagreed' or 'strongly disagreed' is greater than 75 per cent, the descriptor is 'strongly opposed';
4. if the percentage of the group that 'disagreed' or 'strongly disagreed' is greater than 50 per cent but less than 75 per cent, the descriptor is 'opposed'; and
5. if neither the percentage of the group that 'agreed' or 'strongly agreed' or 'disagreed' or 'strongly disagreed' exceeds 50 per cent, the descriptor is 'split'. The term 'split' is chosen to represent opposing views where the percentage different between them is small.
To facilitate the analysis, data is presented according to the percentage of respondents who stated their agreement, disagreement or neutral to the statements provided in the questionnaire.

**Constraints of Field Research**

Experience in a number of surveys in Malaysia suggested that the response rate is likely to be low. For example, the response rate for the Chief Executive Survey, conducted by The Federation of Malaysian manufacturers and Andersen Consulting was approximately 11 per cent (Ministry of International Trade and Industry, 1995:app2-5). The response rate for the Cost of Doing Business in Malaysia was 11.7 per cent for the Ministry of International Trade and Industry and 12.7 per cent for the Economic Planning Unit (Ministry of International Trade and Industry, 1995:app2-5). As for the survey conducted by the World Bank on Enterprise Training, Technology and Productivity in 1994 and 1995 (World Bank 1997b), the overall response rate was 68 per cent with the lowest response rate from companies in the Wilayah Persekutuan Kuala Lumpur. This high response rate was achieved because the survey was conducted over a period of four and a half months between December 1994 and May 1995 and arrangements were made for face-to-face interviews with respondents.

It can be seen that getting a high rate of response for mailed questionnaires is quite difficult, given the limited resources and time available to do the survey. As for a face-to-face interview, the number of interviews that could be conducted during fieldwork was limited. The researcher also encountered problems in setting up appointments, particularly with the manufacturing companies because of their location and the availability of respondents. In addition, the researcher only had enough funds to appoint only research assistant whose tasks were mainly related to administration and the logistic of the surveys and interviews.
Chapter 6
The Perceptions of the Public and Private Sectors Regarding the State and Market Collaboration in Malaysia's Development Process

Introduction

As explained in chapter 4, the Malaysian government has adopted three different development strategies to promote growth and development. From 1957 to 1969 the government basically continued the colonial *laissez-faire* policies for industries but intervened extensively to promote rural development and provide a social and physical infrastructure. However, the racial riot in 1969 (Ismail 1993:4-5) prompted a major reconsideration of the government's approach, hence, the launching of the NEP. During the period from 1970 to 1986 period, the government took an increasingly larger role in commercial activities and actively promoted investment in export industries. The net effect was a mixed economy that was increasingly state dominated (Ismail 1993:6). The active government involvement in the economy led to financial strain on the government budgetary position and the crowding out of private investment. To resolve this problem, the government launched two new policies, the Privatization Policy and the Malaysia Incorporated Concept, to promote the development of the private sector and to reduce government involvement in the economy. However, the implementation of these policies was accelerated after 1986 and they have become the major components in Malaysia's development strategy.

The objectives of this chapter are (i) to examine to what extent the Malaysian public servants and private sector personnel support the public-private sector collaboration strategy in the development process; (ii) to see if there have been any changes in the perceptions of their attitudes towards each other since the launching of the Malaysia Incorporated Concept; (iii) to see how far they perceive the collaboration strategy as contributing to the formulation of public policies. These issues are evaluated based on the results of the survey carried out in Malaysia during the period from July to August 1977.
Comparison of the Public and Private Sector Perceptions of the Public-Private Sector Collaboration in Malaysia

Perceptions regarding the Public and Private Sectors

The purpose of this section is to identify issues regarding public-private sector relations in Malaysia. The discussion is divided into three parts. Based on the survey results, the first part of the discussion relates to the perceptions of the public and private sectors regarding their role in the economy. The second part discusses the perceptions of the public servants and private sector personnel with regard to the public-private sector relations in Malaysia, while the third part discusses their perceptions regarding resource dependence and societal and political influences on the public-private sector relationship.

Perceptions Regarding Civil Servants

During the survey, the public and private sector respondents were asked to state their opinions concerning civil servants. Six statements regarding this subject were provided for their comment:

1. Civil servants are more committed to the public interest than businesspersons.
2. Civil servants carry out public policies as impartially as possible.
3. Government outputs are difficult to evaluate because they provide such complex social services.
4. Civil servants are efficient in using resources.
5. Civil servants are as professional as private sector personnel.
6. It is the responsibility of the public sector not of the private sector to carry out social service and equity programs.

Points of Agreement

As the results in Tables 6.1 and 6.2 show, out of the six statements, the public and private sector respondents agreed on only one statement. Both seem to agree that the Government’s outputs are difficult to evaluate due to the complexity of the social services provided by the government. Upon detailed analysis of the responses, however, it was found that only 49 per cent of the private sector agreed with the statement, the remainder were split between disagreed and neutral (Table 6.1). This result indicates that both groups support the importance of the government in providing social services to the general public. However, the private sector respondents were not so certain that the
government outputs are difficult to evaluate. Their responses seem to indicate a feeling that there is some government outputs that could and should be evaluated.

Table 6.1: Points of Agreement between the Public and Private Sectors on their Perceptions regarding the Civil Servants

<table>
<thead>
<tr>
<th>Government outputs are difficult to evaluate because they provide such complex social services</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
<td>%</td>
</tr>
<tr>
<td>Public Sector SUPPORTED and Private Sector SPLIT on the following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>9</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>10</td>
<td>24.4</td>
</tr>
</tbody>
</table>

Note: P = Public Servants
I = Industry Personnel and Associations
Freq. = Number of Responses

Points of Disagreement

The survey results, as shown in Table 6.2, indicate that there are substantial differences in how the public and private sector respondents perceive civil servants. For example, on the statement that civil servants are more committed to the public interest than businesspersons, the gap of disagreement between the sectors was significant. As expected, the public sector respondents strongly supported this statement while the majority of the private sector respondents took a neutral position. Also, the public servants were certain that they were as professional as the private sector personnel were. However, the private sector's personnel do not think this was true with more than 45 per cent of the private sector respondents citing their disagreement with this statement while 33 per cent took a neutral position.

On the impartiality of civil servants, the gap in opinions between the public and private sector respondents is also significant. As shown in Table 6.2, around 66 per cent of public sector respondents perceived themselves as impartial in implementing public policies, while only about 26 per cent of the private sector respondents perceived the public servants as impartial. As to whether the public sector is efficient in using resources, the gap in the opinion between the public and private sector respondents can be considered small because both seem to agree that civil servants in not using the
resources efficiently. The results shows that more than 60 per cent of the private sector respondents perceive the public sector as not efficient, while the response from the public sector respondents was split between agreed and neutral. The split seems to indicate that civil servants acknowledge that they have not been using resources as efficiently as they should. On the issue of which sector should carry out social services and equity programs, again the respondents show divided views. The private sector respondents seem to feel that the government should carry out this role while public servants strongly feel that the government should not be the only sector that carries out this function.

The survey results in Table 6.1 and 6.2 show that there are substantial points of disagreement in the perceptions of the public and private sector respondents with regard to civil servants. For example, the survey results show that the public sector respondents seem to consider themselves as committed to the needs of the general public, addressing critical needs, impartial, technically competent, and professional. The response from the private sector respondents, however, either rejected such statements or were neutral.

These results were supported by findings from the follow-up interviews. A total of 6 or 60 per cent of the interviewees from the private sector indicated that they are not sure as to whether the private sector should assume a wider role in providing social services to the general public and carry out equity programs. Nevertheless, all 10 respondents interviewed indicated that in areas such as tertiary education and health, the private sector has the capability to provide efficient services. However, they required assistance from the public sector in the form of a conducive regulatory environment.

On whether the responsibility of providing social services and carrying out equity programs should be a major function of the public sector, the responses from the private sector supported the responses in the mailed questionnaire. Only 5 out of 10 interviewed agreed that the public sector should provide social services and carry out equity programs. The remaining indicated that they are not sure.
Table 6.2: Points of Disagreement between the Public and Private Sectors on their Perceptions regarding Civil Servants

<table>
<thead>
<tr>
<th>Points of Disagreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Civil servants are more committed to the public interest than businesspersons</td>
<td>P 2</td>
<td>3.5</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>I 7</td>
<td>17.1</td>
<td>8</td>
</tr>
<tr>
<td>Civil servants are as professional as private sector personnel</td>
<td>P 6</td>
<td>10.7</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>I 18</td>
<td>46.2</td>
<td>8</td>
</tr>
<tr>
<td>Civil servants carry out public policies as impartially as possible</td>
<td>P 8</td>
<td>14.3</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>I 20</td>
<td>48.8</td>
<td>11</td>
</tr>
<tr>
<td>Civil servants are efficient in using resources</td>
<td>P 11</td>
<td>19.6</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>I 25</td>
<td>64.1</td>
<td>2</td>
</tr>
<tr>
<td>It is the responsibility of the public sector not of the private sector to carry out social services and equity programs</td>
<td>P 41</td>
<td>73.2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>I 12</td>
<td>29.3</td>
<td>10</td>
</tr>
</tbody>
</table>

More than 60 per cent of the private sector respondents also believe that the public sector can further improve the efficiency of its delivery system by making it more transparent and reducing wastage. On the professionalism of the public sector, the private sector respondents agreed that improvements had been made but felt that a lot more needed to be done if the Malaysia Incorporated Concept is to achieve its
objectives. One of the areas often mentioned by private sector respondents, as needing improvement, was the need for the public servants to improve their impartiality in carrying out public policies.

On the part of the public servants, almost 80 per cent (8 out of 15 interviewed) of the respondents believe that the public sector has made headway in improving its delivery systems and upgrading the professionalism of civil servants. The respondents also believe that civil servants were impartial in carrying out public policies because guidelines, rules and procedures in discharging their duties guided them. Some of these rules and procedures were made available to the general public so as to ensure transparency of the policies. On the issue of social services, the public sector respondents strongly feel that it should not be a major function of the public sector. Instead, almost 85 per cent of the respondents felt that the private sector should assume a wider role. However, the public sector respondents felt that coverage and affordability of the services provided by the private sector need to be monitored by the public sector so as to ensure the benefits are equitably distributed.

In summary, these survey and interview results seem to indicate that the Malaysian private sector personnel are sceptical in regard to their outlook towards the civil servants. This finding supports Chien (1986) earlier findings that three years after the Malaysia Incorporated was launched, a significant percentage of manufacturing companies was sceptical in regards to whether the government would be more responsive to their business needs. Also, the majority of companies had not perceived any improvement in their working relationship with the government, and was dissatisfied with the services provided by its agencies. They also indicated some serious weaknesses existed in the government, such as inefficiency and red tape associated with negative attitude toward the private sector and system deficiency. As such, it can be concluded that after 14 years (1983-1996), the Malaysia Incorporated Concept has limited success in changing the private sector personnel attitudes towards the civil servants.

**Perceptions Regarding the Private Sector**

Ten statements relating to the role of the private sector were provided in order to gauge the perceptions of the public and private sector respondents on this issue. The statements were related to what is and what should be the role of the private sector in the economy:
1. If the business sector regulated itself effectively, government would be less likely to intervene in business affairs.

2. The private sector should consider societal interests in its decision making.

3. To the extent possible, the private sector should provide resources that can be used for achieving societal objectives.

4. Optimisation of shareholder wealth is the primary objective of business.

5. The private sector is more responsive to its consumers/clients than the public sector.

6. The private sector should thoroughly integrate social responsibility function into their strategic objectives.

7. The most important contribution that the private sector can make to society is to be more profitable.

8. The private sector should follow the spirit and intent of public policies.

9. The private sector faces high levels of risk when they make philanthropic contributions and engage in other such discretionary and voluntary actions.

10. Private sector decision-makers face more uncertainty than public sector decision-makers.

**Points of Agreement**

As shown in Tables 6.3 and 6.4, the numbers of points on which the public and private sector respondents agreed and disagreed were equal. The public and private sector respondents agreed that: (a) if the business sector regulated itself effectively, government would be less likely to intervene in business affairs; (b) the private sector should consider the societal interests in its decision making; (c) to the extent possible, the private sector should provide resources that can be used for achieving societal objectives; (d) optimisation of shareholder wealth is the primary objective of business; and (e) the private sector is more responsive to its consumers/clients than the public sector.

As shown in Table 6.3, 78.2 per cent of the public sector respondents and 79.5 per cent of the private sector respondents strongly supported the statement that there should be less government intervention in the market if business regulated itself effectively. This response seems to indicate that the Malaysian public sector respondents subscribe to the idea that there should be less government intervention in the market. However, they added that this could only take place if business can regulate itself effectively. The response from the private sector respondents, on the other hand, was as expected because ideally, business always prefers minimal or no government intervention.
The question, however, is what ‘regulate itself effectively’ means to different people and in what situation would the public sector be prepared to let the market regulate itself. This question was put to the public and private sector respondents as a supplementary question in the follow-up interviews. Almost 60 per cent of the public sector respondents and more that 70 per cent of the private sector respondents stated that ‘regulate itself effectively’ means there is a competitive market and the market determines price. However, both respondents agreed that if the market is not competitive, that is under a monopoly situation, there is a need for the public sector to regulate the market.

On the statement regarding the need for the private sector to consider societal interests in their decision-making, respondents from both sectors supported this view. However, the degree of their agreement differed. As shown in Table 6.3, the public sector respondents strongly supported this statement with 96.4 per cent saying they agreed with the statement compared with 73.2 per cent of the private sector respondents. This result seems to indicate that the public sector respondents have a strong belief that the private sector should assume a major role in fulfilling society’s requirements and should consider society’s interests in its decision-making. The degree of the private sector respondents’ support for this statement seems to convey some reservation on this issue. Furthermore, their response regarding the need for the private sector to provide resources to achieve societal objectives also reflected their reservations with only 70.7 per cent agreeing with this statement compared with the strong support of 92.9 per cent registered by the public sector respondents.

As for the statement that the optimisation of shareholders’ wealth should be the primary objective of business, the response from private sector respondents seems to indicate that while it is one of the private sector’s objectives, it is not the primary objective. As shown in Table 6.3, only 53.7 per cent of the respondents agree with the statement, 34.1 per cent prefer to take a neutral position while 12.2 per cent disagree. However, to the public sector respondents, the optimisation of the shareholders’ wealth is the primary objective of the private sector. As indicated in Table 6.3, 80.4 per cent of the public sector respondents agreed.
Table 6.3: **Points of Agreement between the Public and Private Sectors on the Role of the Private Sector in the Economy**

<table>
<thead>
<tr>
<th>Both Sectors STRONGLY SUPPORTED the following statement:</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>If the business sector regulated itself effectively, government would be less likely to intervene in business affairs</td>
<td>P</td>
<td>7</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>3</td>
<td>7.7</td>
</tr>
</tbody>
</table>

As to whether the private sector is more responsive to its consumers/clients than the public sector, there seems to be a consensus among respondents from both sectors. However, the degree of their agreement is the reverse of the earlier point. This time, the private sector respondents strongly supported (78 per cent) this statement, while the
public sector was split (48.2 per cent). This result indicates that the private sector respondents believe that the private sector is more responsive to its consumers/clients than the public sector. The response from the public sector respondents, however, reflected their reservation on this point. Table 6.3 shows that 35.7 per cent of the public sector respondents disagreed with the statement.

Points of Disagreement
Meanwhile, the public and private sector respondents disagreed with the following statements: (a) the private sector should thoroughly integrate social responsibility functions into their strategic objectives; (b) the most important contribution that the private sector can make to society is to be more profitable; (c) the private sector should follow the spirit and intent of public policies; (d) the private sector faces high levels of risk when they make philanthropic contributions and engage in other such discretionary and voluntary actions; and (e) private sector decision-makers face more uncertainty than public sector decision-makers.

As shown in Table 6.4, the private sector respondents preferred to take a neutral position regarding the need for the private sector to thoroughly integrate the social responsibility function into its strategic objective. Only 40 per cent of the private sector respondents agreed with this statement while 57.7 per cent were neutral. This seems to indicate that the private sector has some reservations with regard to the integration of the social responsibility function into their strategic objective. Such reservations could be due to the uncertain impacts of such an undertaking on its goals and profitability. The public sector’s response however, was the opposite. 91.1 per cent of the public sector respondents strongly supported this statement, indicating that the public sector believes that the private sector should thoroughly integrate the social responsibility function into its strategic objectives.
Table 6.4: Points of Disagreement between Public and Private Sectors on the Role of the Private Sector in the Economy

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SPLIT on the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The private sector should thoroughly integrate the social responsibility</td>
<td>P</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td>function into its strategic objective</td>
<td>I</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>The Public Sector SPLIT and the Private Sector SUPPORTED the following</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most important contribution that the private sector can make to</td>
<td>P</td>
<td>25</td>
<td>44.6</td>
</tr>
<tr>
<td>society is to be more profitable</td>
<td>I</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Both Sectors SPLIT on the following Statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The private sector should follow the spirit and intent of public policies</td>
<td>P</td>
<td>21</td>
<td>37.5</td>
</tr>
<tr>
<td>I</td>
<td>3</td>
<td>7.3</td>
<td>18</td>
</tr>
<tr>
<td>The private sector faces high levels of risk when they make philanthropic</td>
<td>P</td>
<td>24</td>
<td>42.9</td>
</tr>
<tr>
<td>contributions and engage in other such discretionary and voluntary</td>
<td>I</td>
<td>11</td>
<td>26.8</td>
</tr>
<tr>
<td>actions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Public Sector SPLIT and the Private Sector STRONG SUPPORTED the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private sector decision makers face more uncertainty than public sector</td>
<td>P</td>
<td>17</td>
<td>30.4</td>
</tr>
<tr>
<td>decision makers</td>
<td>I</td>
<td>4</td>
<td>9.8</td>
</tr>
</tbody>
</table>

158
As to profit being the most important contribution from the private sector to society, the public sector respondents were split on this issue. As shown in Table 6.4, only 41.1 per cent agreed with this statement while 44.6 per cent disagreed. This result indicates that while the public sector acknowledges that profits could be one form of private sector contribution to society, it does not, however, consider it as the most important contribution. In fact, from the response of public sector respondent to the earlier statement, it can be assumed that the public sector believes that the private sector should make a direct contribution to society by providing social services and integrating social responsibilities in its strategic objectives. Meanwhile, 67.5 per cent of the private sector respondents supported this statement. These responses seem to indicate that the private sector respondents believe that by being profitable companies, they are actually contributing to society. This contribution could be in the form of taxes imposed on profits. The government, in turn, can use this tax revenue to finance its social services. It is natural, therefore, for the private sector respondents to have some reservations with regard to the private sector assuming a direct role in providing social services and in integrating social responsibilities in its objective functions. Apart from the uncertainty with regards to this endeavour, by paying taxes it has already made its contribution to society.

On the following statements: (a) the private sector should follow the spirit and intent of public policies; and (b) the private sector faces high levels of risk when it makes philanthropic contributions and engages in other such discretionary and voluntary actions, the response from the public and private sector respondents were split. As shown in Table 6.4, only 39.3 per cent of the public sector respondents agreed with the first statement and 37.5 per cent disagreed. Meanwhile only 30.4 per cent of the public sector respondents agreed with the second statement while 42.9 per cent rejected it. This result indicates that the public sector respondents were unsure as to whether the private sector should follow the spirit and intent of public policies. They were also unsure as to whether the private sector would face high levels of risk if they make philanthropic contributions and engage in other such discretionary and voluntary actions. The private sector respondents, on the other hand, did not totally reject the idea that their organisation should follow the spirit and intent of public policies. As shown in Table 6.4, 43.9 per cent of the private sector respondents agreed that the private sector should do
so, while 48.8 per cent were non-committal. As for the second statement, the private sector respondents also preferred to take a non-committal approach.

On the statement that private sector decision-makers faced more uncertainty than public sector decision-makers, the result indicates strong support from the private sector respondents and split views from the public sector respondents. As shown in Table 6.4, 75.6 per cent of the private sector respondents agreed with this statement compared with only 28.8 per cent of the public sector respondents. 41.1 per cent of the public sector respondents took a neutral position. The results indicate that the public sector respondents do not believe that the private sector faced greater uncertainty in its decision-making than the public sector.

In summary, the survey results indicate that for most part, there are differences in regard to the public servants and private sector personnel attitudes towards the role of the private sector in the economy. The response from the public sector respondents indicate that they support the notion that, apart from assuming a leading role in promoting economic growth, the private sector should assume a greater role in societal development. Their response, however, does not negate the public sector respondents’ scepticism with regard to the private sector’s willingness to assume this role. This is because the public sector respondents are of the opinion that the private sector will only assume a greater role in societal development if it does not affect their primary objective of optimizing their shareholders’ wealth.

The response from the private sector respondents seems to indicate that the private sector is not averse to the idea that they should assume some of the responsibility in societal development. However, it does have some reservations in assuming a direct and larger role. This is because firstly, according to Stevens (1988:35), the advantages of cooperation between the public and private sector on societal development may be limited until business understands the extent of initiative that it should take in dealing with legitimate societal problems when not forced to do so by the government. Secondly, economic and societal development can have conflicting agendas. Under such situations, it may be difficult for a firm to make decisions that could meet the requirements of both objectives. Again, these results indicate that despite the rhetoric, the Malaysia Incorporated Concept has had limited success in changing the attitudes of the private sector.
sector with regard to participating more in the societal development process. While the private sector is willing to assume a role in the societal development process, it should be within the ambit of the economic development process.

**Perceptions on Public-Private Sector Relations**

The following discussions investigate the perceptions of the public and private sector respondents regarding public-private sector relations in Malaysia. The respondents were asked to state their opinions on eight statements related to this subject:

1. The public sector should be the facilitator not the regulator of the private sector.
2. The private sector should actively oppose government agencies that reduce their profitability.
3. The private sector is not held accountable for their actions that affect society.
4. The public and private sectors should both operate in their individual self-interest.
5. The public and private sectors treat each other as adversaries.
6. The private sector's decision-making methods are more effective than the public sector's.
7. Efficiency and effectiveness in the private sector and the public sector differ because the public sector does not have a profit motive.
8. Civil servants are technically competent in their jobs, as are the private sector personnel.

**Points of Agreement**

As shown in Table 6.5, the respondents from both the public and private sectors have a consensus with regard to the public sector being a facilitator rather than a regulator of the private sector. The survey result shows that 69.1 per cent of the public sector respondents and 73.2 per cent of the private sector respondents agreed that the public sector should assume a facilitator role in the economy. This result seems to be in line with the Malaysia Incorporated Concept requirement whereby the concept specified that the private sector should take a leading role in the development process while the public sector should assume a supporting role. Ideologically, Malaysian public servants may subscribe to the facilitating role and their responses could be expected to, and indeed did, reflect this commitment.

On the subject of efficiency, the response from the public and private sector respondents supports the suggestion that efficiency and effectiveness in the two sectors differs because the public sector does not have a profit motive. As shown in Table 6.5, 83.9 per
cent of the public sector respondents stated their agreement with this suggestion. The strong support from the public sector respondents is consistent with the earlier result where they consider profit as the main objective of the private sector. Their response also suggested that because the public sector is not profit motivated, its efficiency and effectiveness is bound to be different from the private sector’s. On the part of the private sector, only 67.5 per cent of the respondents registered their agreement with the statement. Their responses seem to suggest that while they agree with the statement, they are uncertain with profit motivation being the only reason for the differences. Again, as in case of the private sector outlooks with regards to the civil servants, the public servants are also sceptical with the private sector willingness to assume a greater role in societal development.

The above conclusion is in line with the responses given by the public and private sector respondents regarding the effectiveness of the decision-making methods in the private sector. As shown in Table 6.5, 70.7 per cent of the private sector respondents believe their decision-making methods are more effective than the public sector’s, while only 42.9 per cent of the public sector respondents agreed with this statement. The other 30.4 per cent of the public sector respondents were neutral. The split response indicates that the public sector is uncertain with regard to the effectiveness of decision-making processes in the private sector.

The response of the public and private sector respondents on the competency of the civil servants also supports the earlier conclusions that the gap between the opinions of the Malaysian public and the private sectors is still substantial. For example, as shown in Table 6.5, 75 per cent of the public sector respondents stated that they strongly supported the statement that civil servants were technically competent in their jobs, as were private personnel. The private sector respondents, on the other hand, had quite different views. Their responses were split; whereby 39 per cent agreed with the statement and 39 per cent assumed a neutral position.
Table 6.5: Points of Agreement between the Public and Private Sectors on Public-Private Sector Relations

<table>
<thead>
<tr>
<th>Points of Agreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The public sector should be the facilitator not the regulator of the private sector</td>
<td>P</td>
<td>11</td>
<td>20.0</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>1</td>
<td>2.4</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency and effectiveness in the private sector and the public sector differ because the public sector does not have a profit motive</td>
<td>P</td>
<td>8</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td>The Public Sector SPLIT and the Private Sector SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private sector's decision-making methods are more effective than the public sector's</td>
<td>P</td>
<td>15</td>
<td>26.8</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SPLIT on the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil servants are technically competent in their jobs as are private personnel</td>
<td>P</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>9</td>
<td>22.0</td>
</tr>
<tr>
<td>Both Sectors OPPOSED the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The private sector is not held accountable for their actions that affect society</td>
<td>P</td>
<td>34</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>25</td>
<td>61.0</td>
</tr>
<tr>
<td>The public and private sectors should both operate in their individual self-interest</td>
<td>P</td>
<td>36</td>
<td>63.2</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>28</td>
<td>68.3</td>
</tr>
<tr>
<td>The public and private sectors treat each other as adversaries</td>
<td>P</td>
<td>34</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>28</td>
<td>68.3</td>
</tr>
<tr>
<td>The Public Sector OPPOSED and the Private Sector SPLIT on the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The private sector should actively oppose government agencies that reduce their profitability</td>
<td>P</td>
<td>34</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>19</td>
<td>46.3</td>
</tr>
</tbody>
</table>
On the following statements, the public and the private sector respondents registered their opposition: (a) the private sector is not held accountable for their actions which affect society; (b) the public and private sectors should both operate in their individual self-interest; (c) the public and private sectors treat each other as adversaries. With regard to (a), 60.7 per cent of the public sector respondents and 61 per cent of the private sector respondents rejected it. These responses indicate broad agreement between the public and private sector respondents that the private sector should be held accountable for its actions. The public and private sector respondents also stated their opposition to statement (b). As shown in Table 6.5, 63.2 per cent of the public sector respondents and 68.3 per cent of the private sector respondents rejected this statement, indicating their rejection of the notion that they should operate in their individual self-interest. Nevertheless, what is more interesting is that 31 per cent of the public sector respondents is of the opinion that they should operate in their own self-interest compared to only 14.6 per cent responses from the private sector respondents. This seems to suggest that a small portion of civil servants do not subscribe to the idea that the public sector should take into consideration the need of the private sector in discharging their duties.

On statement (c), 60.7 per cent of the public sector respondents and 68.3 per cent of the private sector respondents rejected this statement. Their rejection indicates that the public and private sectors prefer not to treat each other as adversaries. This result is supported by the response from the public and private sector respondents when asked to describe the relationship between their organisation and government agencies and vice versa. The result in Table 6.6 showed that 55 per cent of the private sector respondents said that their relationship with the government agencies was somewhat facilitating. Meanwhile, 50.9 per cent of the public sector respondents described the relationship as facilitating. The responses on these three statements indicate that ideologically the public and private sectors prefer to have a closer working relationship with each other. They seem to perceive that the closer working relationship will contribute toward achieving their own and each other’s objectives.
Table 6.6: The Relationship between Organisations and Government Agencies

<table>
<thead>
<tr>
<th></th>
<th>Public Sector</th>
<th>Private sector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
</tr>
<tr>
<td>Adversarial</td>
<td>5</td>
<td>8.8</td>
</tr>
<tr>
<td>Somewhat Adversarial</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>12.3</td>
</tr>
<tr>
<td>Somewhat Facilitating</td>
<td>12</td>
<td>21.1</td>
</tr>
<tr>
<td>Facilitating</td>
<td>29</td>
<td>50.9</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100</td>
</tr>
</tbody>
</table>

On the last statement for this part, 60.7 per cent of the public sector respondents rejected the idea that the private sector should actively oppose government agencies that reduce their profitability while the responses from the private sector respondents were split. As shown in Table 6.5, 46.3 per cent of the private sector respondents rejected this statement. The rest of either agreed or took an impartial view. The response from the private sector respondents seem to indicate that while they are naturally concerned with policies that may affect their profitability, they are unsure if they should actively oppose government agencies because of it.

In summary, the survey results indicate that the public and private sector respondents concurred with most of the statements that of what the public-private sector relations should be. They also supported the idea that the public and private sectors should not treat each other as adversaries. Despite this, the private sector respondents are sceptical in regard to the competency of the public sector while the public sector respondents believe that the private sector is highly profit motivated. This result is consistent with the findings in the earlier section. It may be deduced, therefore, that while the public and private sector respondents supported the idea of what the public-private sector relations should be, their support does not seem to be translated into practice because of their scepticism towards each other motives and priorities.

Perceptions about Resource Dependence, and Societal and Political Influences

This section looks at how factors such as resource dependence and societal and political influences affect public-private sector relations. For this purpose five statements were provided to the public and private sector respondents. The statements were:
1. The public sector depends on the private sector for many of its resources
2. Society demands too much from government for social services, thereby reducing available resources for economic development
3. Society makes too many demands on the private sector that deplete critical resources
4. Public policies address critical needs in society
5. Government policies are unstable because politicians are always running for office.

Statements one, two and three refer to resource dependence. Statement four refers to societal influence. The purpose of this statement is to gauge how much the need for public policies to address the critical need of the society influence the public-private sector relations. For example, after the racial riot in 1969, the Malaysia Government felt the need to introduce an affirmative action to correct the perceived social imbalances in the economy. The introduction of the NEP has somewhat influenced the characteristic of the public-private sector relations in Malaysia. Statement five refers to political influence. The purpose is to gauge how changes in Government policies due to changing politician who headed a ministry affected the public-private sector relations.

**Points of Agreement**

The results in Table 6.7 show that the private sector respondents support the notion that the public sector depends on the private sector for many of its resources, while the public sector respondents seem to be split. The survey result showed that 73.2 per cent of the private sector respondents agreed with the statement, while only 46.4 per cent of the public sector respondents supported it. As many as 33.9 per cent of the public sector respondents rejected this statement. This result suggests that the private sector respondents were quite certain that the private sector provides the resources needed by the public sector. However, the public sector respondents seem to be uncertain as to public sector dependence on the private sector. It is not clear what causes the uncertainty on the part of the public sector. A possible explanation could be the differences in what each sector understood by resources or it could be due to unwillingness on the part of the public sector to admit their dependence on the private sector.

Follow-up interviews with both sectors were conducted to dig further into possible explanations for these conflicting views. Interviews with the private sector respondents found that 95 per cent of them consider taxes as an important source of government...
revenue. In contrast, interviews with the public sector respondents found that only 40 per cent mentioned taxes as an important source of public sector resources. The remainder considered other resources such as loans, sales of assets and government securities as being as important as taxes for the resource base of the public sector. Based on this result, it seems that while the public sector respondents acknowledge that taxes are an important source of public sector resources, they are reluctant to admit that they are dependent on the private sector. Their responses are quite surprising, given that the basic premise of Malaysia Incorporated Concept is that the public sector relies on the private sector for its resources and hence the need for the public-private sector collaboration strategy.

On the issue related to societal demands, both the public and the private sector respondents were uncertain as to whether society's demands for social services reduces resources available for economic development. Only 44 per cent of the public sector respondents agreed with this statement, 33.3 disagreed and 22.2 per cent were neutral. On the private sector side, 24 per cent of the respondents support the statement, 36.6 per cent rejected it and 39.0 per cent were neutral. The uncertain response from both sectors suggests that they do not consider society's demands on the government are too great and that society's demands for social services reduces the resources available for economic development. This could be due to the fact that social services in Malaysia comprise mainly education, health and housing services as shown in Figure 6.1. These services are important to human development, which in turn contributes to economic development. This could explain the uncertainty in the response from both the public and private sector respondents.

In contrast, the public sector respondents were opposed to the statement regarding society making too many demands on the private sector and thus depleting its critical resources. The private sector respondents, on the other hand, are uncertain on this issue with only 48 per cent stating that they did not agree with this statement. These responses suggest that the public and private sector respondents do not think that society is making too many demands on the public and the private sectors. It can be assumed, therefore, that this issue is not a source of conflict between the sectors.
Table 6.7 also shows that the public and private sector respondents strongly supported the statement that public policies address critical needs of society. Ninety per cent of the public sector respondents and 82 per cent of the private sector respondents registered their agreement with this statement. However, both sectors registered a split with regard to government policies being unstable. Only 47.4 per cent of the public sector respondents and 43.9 per cent of the private sector respondents did not agree with the statement that due to politicians always running for office, government policies are unstable. Even though the public and private sector respondents agree that public policies address critical needs of society, they are uncertain as to whether public policies are stable.
Table 6.7: Points of Agreement between the Public and Private Sectors on Resource Dependence, and Societal and Political Influences

<table>
<thead>
<tr>
<th></th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>The Public Sector SPLIT and the Private Sector SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The public sector depends on the private sector for many of its resources</td>
<td>P</td>
<td>19</td>
<td>33.9</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>3</td>
<td>7.3</td>
</tr>
<tr>
<td>Both Sectors SPLIT on the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Society demands too much from government for social services, thereby reducing available resources for economic development</td>
<td>P</td>
<td>18</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>15</td>
<td>36.6</td>
</tr>
<tr>
<td>The Public Sector OPPOSED and the Private Sector SPLIT on the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Society makes too many demands on the private sector that depletes critical resources</td>
<td>P</td>
<td>34</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>20</td>
<td>48.8</td>
</tr>
<tr>
<td>Both Sectors STRONGLY SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public policies address critical needs in society</td>
<td>P</td>
<td>2</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>2</td>
<td>5.0</td>
</tr>
<tr>
<td>Both Sectors SPLIT on the following Statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government policies are unstable because politicians are always running for office</td>
<td>P</td>
<td>27</td>
<td>47.4</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>18</td>
<td>43.9</td>
</tr>
</tbody>
</table>
In summary, this section has shown that except for the strong support for public policy to address the critical needs of the society, the public and private sector respondents do not seem to have common views on issues related to resource dependence, societal demands and political influence. In most cases, their responses are split. These results are not surprising because according to Stevens (1988: 17), in the situations that involve the allocation of limited resources to competitors, the adversarial system may be the natural and possibly the inevitable result of interaction. Many elements of political and legal systems exhibit the zero-sum characteristic of adversarial conflict. For example, political races for public office are nearly always fought in an adversarial manner. Prospective legislation is advocated and attacked by partisan adversaries who often perceive that they have diametrically opposing interests. Within this framework, it is not surprising that regulatory agencies perceived their regulated entities to be adversaries and vice versa. Nevertheless, the spirit of the Malaysia Incorporated Concept is to reduce this adversarial situation. The survey results however, indicate that thus far, it has met with limited success.

**Perceptions about Public-Private Sector Collaboration**

This section discusses the extent and effectiveness of the public-private sector collaboration. The discussion is divided into three parts. The first part discusses the perceptions of the public and private sector respondents regarding the role of industrial policy in Malaysia's development process. The second part discusses the perceptions of the public and the private sector respondents regarding public-private sector collaboration in Malaysia and the last part discusses the perceptions of the public and private sector respondents with regard to the effectiveness of the collaboration.

**Perceptions of Issues Related to Industrial Policy**

Table 6.8 presents the survey results on issues related to the perceptions of the public and private sector respondents on the role of industrial policy in Malaysia's development process. In the survey, seven statements on industrial policy were provided on which the public and private sector respondents were asked to present their opinions. The statements were:

1. Public policies can help create competitive advantages and make certain businesses more profitable.
2. Government should use public policies to stimulate specific investment.
3. The public sector should help the economy to grow by using fiscal policies.
4. The internationalisation of business will force the public sector to develop more public policies that affect business.
5. The public sector can effectively determine which industries or business need government support.
6. The best approach to economic development is the free market system.
7. Government should guarantee loans for some business and industries.

**Points of Agreements**

As shown in Table 6.8, there was not much conflict between the perceptions of the public and private sector respondents with regard to the role of industrial policy in Malaysia’s development policy. In fact, respondents from both sectors strongly supported the statements that: (a) public policies can help create competitive advantages and make certain businesses more profitable; (b) government should use public policies to stimulate specific investment; and (c) the public sector should help the economy to grow by using fiscal policies.

On the issue regarding the ability of public policies to create competitive advantage, 83.9 per cent of the public sector respondents and 87.5 per cent of the private sector respondents stated that they agreed with this statement. These responses correspond with the responses to the next statement. In Table 6.8, 90.2 per cent of the private sector respondents agreed that the government should use public policies to stimulate specific investment, while 85.7 per cent of the public sector respondents indicated their agreement with this statement. On a related issue, the public and private sector respondents also strongly supported the notion that the public sector should help the economy to grow by using fiscal policies. As shown in Table 6.8, 82.1 per cent of the public sector respondents and 75.6 per cent of the private sector respondents indicated their agreement with this idea.
Table 6.8: Points of Agreement between Public and Private Sectors on Issues Related to Industrial Policy

<table>
<thead>
<tr>
<th></th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors STRONGLY SUPPORTED the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public policies can help create competitive advantages and make certain businesses more profitable</td>
<td>P 5</td>
<td>8.9</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>I 0</td>
<td>0.0</td>
<td>35</td>
</tr>
<tr>
<td>Government should use public policies to stimulate specific investment</td>
<td>P 3</td>
<td>5.4</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>I 0</td>
<td>0.0</td>
<td>37</td>
</tr>
<tr>
<td>The public sector should help the economy to grow by using fiscal policies</td>
<td>P 3</td>
<td>5.4</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>I 0</td>
<td>0.0</td>
<td>31</td>
</tr>
<tr>
<td>Both Sectors SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The internationalisation of business will force the public sector to develop more public policies that affect business</td>
<td>P 13</td>
<td>23.2</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>I 9</td>
<td>22.0</td>
<td>22</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and Private sector SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The public sector can effectively determine which industries or business need government support</td>
<td>P 6</td>
<td>10.7</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>I 8</td>
<td>19.5</td>
<td>27</td>
</tr>
<tr>
<td>The Public Sector SUPPORTED and Private Sector STRONGLY SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The best approach to economic development is the free market system</td>
<td>P 14</td>
<td>25.0</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>I 0</td>
<td>0.0</td>
<td>32</td>
</tr>
<tr>
<td>Both Sectors SPLIT on the following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government should guarantee loans for some business and industries</td>
<td>P 17</td>
<td>30.4</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>I 12</td>
<td>29.3</td>
<td>13</td>
</tr>
</tbody>
</table>
These results seem to contradict the earlier finding in which respondents indicated that there should be less government intervention in the economy. Follow-up interviews with the private sector respondents on these issues, however, indicated that businesses did not want government to be involved in micro aspects of the business but they welcomed government assistance at the macro levels. They agreed that public policy such as taxation and investment incentives could help create competitive advantage that could stimulate investment and make it easier for businesses to operate profitably. The respondents also agreed that, to a certain extent, fiscal policies can help stimulate the economy but they cautioned against too much reliance on fiscal policies to stimulate the economy because this may have negative impacts on private sector initiatives.

On the globalisation issues, the response from public and private sector respondents indicated that they only supported the suggestion that more public policies were needed to assist business in the globalisation process. As shown in Table 6.8, only 58.9 per cent of the public sector respondents and 53.7 per cent of the private sector respondents agreed with the statement. These mild responses from both sectors seem to indicate that while there is support for more public policies to assist business to meet the challenges of the globalisation process, it is not seen as crucial.

As to the ability of the public sector to effectively determine which industries or businesses need government support, 76.8 per cent of the public sector respondents believe that the public sector has this ability, while 65.9 per cent of the private sector respondents stated their agreement with this statement. The responses from the private sector respondents seem to be in contrast with the earlier findings whereby the private sector respondents rejected too much government intervention, especially at the micro levels. This issue was raised during the follow-up interviews with the private sector respondents. The feedback from the private sector respondents was that various dialogues organised by the public sector had enabled the private sector to provide more information regarding business environments and the various needs of businesses and industries. The private sector respondents believe that this collaborative effort has been able to improve the public sector’s ability to determine which industries or businesses need government support.

Despite the above, the responses given to the statement that the best approach to economic development is the free market system indicate that the private sector prefers a
free market system. The survey results in Table 6.8 show that the private sector respondents strongly support the free market system as the best approach to economic development with 78 per cent indicating their agreement with this statement. Not surprisingly, the response from the public sector respondents is mild with only 58.9 per cent of the respondents agreeing. Nevertheless, on the whole, both sectors seem to favour the free market system as a development strategy, even though the public sector respondents’ views reflect some reservations with this approach. Lastly, the results in Table 6.8 also show that the public and the private sector respondents were split on the statements that the government should guarantee loans for some businesses and industries. Only 39.4 per cent of the public sector respondents and 31.7 per cent of the private sector respondents agreed with this statement. The rest of the respondents either disagreed with or were neutral on the issue. The responses from the public and private sector respondents indicate that they are in accord in terms of rejecting the need for government to guarantee loans to businesses and industries.

In summary, the results suggest that the public and the private sector respondents have favourable perceptions about the role of industrial policy in the development process. Except for guaranteeing loans for some businesses and industries, the majority of respondents agree that the public sector has the capability to guide industrial development. These responses could partly be attributed to the wide utilisation of the Consultative Panels and Dialogue Sessions\(^1\) to discuss various policies, including industrial policy, before being implemented. According to Ahmad Sarji (1993:182) consultation and dialogue between civil servants and the corporate sector have been a feature of the day-to-day life of government departments dealing with commerce and industry. The interviews with the private sector respondents support the notion. Nine out of 10 interviewed stated that since the private sector was consulted in the formulation of industrial policy, it has improved the ability of the public sector to guide industrial development

**Perceptions on Public-Private Sector Collaboration**

Five statements related to public-private sector collaboration were presented to the respondents in order to seek their views on this subject. The statements were:

\(^1\) Discussion on these institutional arrangement can be found in chapter 4 of this thesis.
1. Public-private sector collaboration is necessary to achieve national goals.

2. Government decision-making bodies that affect the private sector should include private sector representatives as members.

3. Private sector personnel should be receptive to consultation with civil servants that need help to improve government cooperation.

4. Every public policy that affects the private sector should have a public-private partnership clause that requires the policies to be jointly implemented.

5. Corporations should have government representatives on their Board of Directors.

**Points of Agreement**

The survey results in Table 6.9 show that the public and private sector respondents had a consensus on four out of the five statements. Both strongly support the statements that public-private sector collaboration is necessary to achieve national goals and that private sector personnel should be receptive to consultation with civil servants to improve public-private cooperation. As shown in Table 6.9, 96.5 per cent of the public sector respondents and 100 per cent of the private sector respondents agreed with the first statement and 90.0 per cent and 82.9 per cent of the public and private sector respondents respectively agreed with the second statement. These results suggest overwhelmingly positive views about public-private sector collaboration as a development strategy to achieve national aspirations and goals. They also reflect the willingness of the private sector respondents to support and participate in this collaboration effort.

The willingness of the private sector respondents to participate in the collaboration effort was also reflected by their strong support for the statement that government decision-making bodies that affect the private sector should include private sector representatives as members. As shown in Table 6.9, 82.9 per cent of the private sector respondents and 73.2 per cent of the public sector respondents stated that they agreed with the statement. Public and private sector respondents also support the suggestion that every public policy that affects the private sector should have a public-private partnership clause that requires the policies to be jointly implemented. In this case, 67.9 per cent of the public sector respondents and 63.4 per cent of the private sector respondents agreed with the statement.
Table 6.9: Points of Agreement between the Public and Private Sectors on Public-Private Sector Collaboration

<table>
<thead>
<tr>
<th>Points of Agreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors STRONGLY SUPPORTED the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public-private sector collaboration is necessary to achieve national goals</td>
<td>P</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Private sector personnel should be receptive to consultation with civil servants that need help to improve government cooperation</td>
<td>P</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>The public sector SUPPORTED and the private sector STRONGLY SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government decision-making bodies that affect the private sector should include private sector representatives as members</td>
<td>P</td>
<td>10</td>
<td>17.9</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>2</td>
<td>4.9</td>
</tr>
<tr>
<td>Both Sectors SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Every public policy that affects the private sector should have a public-private partnership clause that requires the policies to be jointly implemented</td>
<td>P</td>
<td>9</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>2</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Points of Disagreement

Despite these areas of agreement, public and private sector respondents disagree with the statement that corporations should have government representatives on their boards of directors. As shown in Table 6.10, 68.3 per cent of the private sector respondents rejected this proposition. Their rejection is in line with the earlier responses wherein the
private sector opposed any form of intervention especially at company levels, which might force a sharing of authority. Even the public sector respondents were cautious about this suggestion. Their responses show a split, whereby 32.1 per cent stated that they disagreed with the statement, 19.6 per cent were neutral and 48.2 per cent agreed.

Table 6.10: *Points of Disagreement between the Public and Private Sectors on Public-Private Sector Collaboration*

<table>
<thead>
<tr>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>P</td>
<td>18</td>
<td>32.1</td>
</tr>
<tr>
<td>I</td>
<td>28</td>
<td>68.3</td>
</tr>
</tbody>
</table>

The Public Sector SPLIT and the Private Sector OPPOSED the following Statement:

Corporations should have government representatives on their Board of Directors

In summary, analyses in this section show that both public and private sector respondents are supportive of the idea of public-private sector collaboration in the development process. However, this support is only for cooperation at the macro especially at policy formulation level. The private sector respondents reject any such form of intervention at the company level.

**Perceptions on the Effectiveness of Public-Private Sector Collaboration**

In order to elicit the perceptions of the public and private sectors with regard to the effectiveness of public-private sector collaboration in influencing their opinions towards each other, the respondents were asked to state their opinions about the following statements:

1. Effective public sector use of resources depends on how much the private sector cooperates.
2. Public-private sector collaboration has improved the quality of public services rendered to the private sector.
3. Cooperation between the public and private sectors results in the private sector developing positive perceptions about the public sector.
4. Jointly sponsored programs and activities are more likely to achieve their objectives.
5. Public-private sector collaboration does not need conscious direction and should be allowed to evolve on its own to address whatever issue emerges.
6. Regardless of the intent, public sector intervention decreases private sector efficiency in using resources.

7. The public sector influences the private sector more than the private sector influences the public sector.

**Points of Agreement**

Table 6.11 shows that the public and private sector respondents strongly supported the statement that public-private sector collaboration had improved the quality of services rendered by the public sector to the private sector. The result showed that 82.1 per cent of the public sector respondents and 90.2 per cent of the private sector respondents agreed with this statement. The public and the private sector respondents also believe that collaboration has improved the private sector’s perceptions towards the public sector. In fact, 90.2 per cent of the private sector respondents agreed with the statement compared with 82.1 per cent of the public sector respondents.

As to whether the collaboration strategy has resulted in the private sector developing positive perceptions about the public sector, the responses from the public and private sector respondents indicate that it did. As shown in Table 6.11, 90.2 per cent of the private sector respondents agreed. Meanwhile, 78.6 per cent of the public sector respondents agreed.

Respondents from both sectors also strongly supported the suggestion that jointly sponsored programs and activities were more likely to achieve their objectives. As shown in Table 6.11, 85.7 per cent of the public sector respondents and 87.8 per cent of the private sector respondents agreed with this statement. Support for the proposition that the effective use of resources by the public sector depends on private sector cooperation, however, was mild. Only 67.9 per cent and 60 per cent of the public and private sector respondents, respectively, agreed with this statement.
Table 6.11: Points of Agreement between the Public and Private Sectors on the Effectiveness of Public-Private Sector Collaboration

<table>
<thead>
<tr>
<th>Points of Agreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors STRONGLY SUPPORTED the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public-private sector collaboration has improved the quality of public services rendered to the private sector</td>
<td>P</td>
<td>3</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cooperation between the public and private sectors results in the private sector developing positive perceptions about the public sector</td>
<td>P</td>
<td>4</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Jointly sponsored programs and activities are more likely to achieve their objectives</td>
<td>P</td>
<td>1</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>2</td>
<td>4.9</td>
</tr>
<tr>
<td>Both Sectors SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective public sector use of resources depends on how much the private sector cooperates</td>
<td>P</td>
<td>9</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>6</td>
<td>14.6</td>
</tr>
</tbody>
</table>

**Points of Disagreement**

The survey results in Table 6.12 show that the respondents from both sectors disagreed with the three statements related to the effectiveness of public-private sector collaboration. Firstly, view of the public and private sector respondents were split on the statement that public-private sector collaboration does not need conscious direction and should be allowed to evolve on its own to address whatever issue emerges. As shown in this table, 39.3 per cent of the public sector respondents disagree with the statement.
while 35.7 per cent of the respondents stated their agreement. In the case of the private sector respondents, 43.9 per cent stated that they agreed with the statement and 36.6 per cent disagreed. This result suggests that there is uncertainty as to whether public-private sector collaboration needs some direction or should evolve on its own. The private sector respondents however, seem to prefer the latter option while the public sector respondents prefers the former.

Secondly, respondents from both sectors showed mixed views on the suggestion that, regardless of the intent, public sector intervention decreases private sector efficiency in using resources. 41.1 per cent of the public sector respondents disagreed with the statement while 56.1 per cent of the private sector respondents supported it. Finally, respondents from both sectors did not accede to the proposition that the public sector influences the private sector more than the private sector influences the public sector. The survey results in Table 6.12 show that 50 per cent of the public sector respondents believe that the public sector influences the private sector more than the private sector influenced the public sector. Meanwhile, 53.7 per cent of the private sector respondents indicated a neutral position on this issue.

In summary, this section has shown that respondents from the public and private sector agree that thus far the public-private sector collaboration has improved their attitudes towards each other and collaboration has also improved the efficiency of the public sector. However, the respondents have mixed opinions with regard to how the collaboration should be implemented. The private sector respondents prefer the collaboration to evolve on its own because they seem to feel that too much public sector intervention will affect their efficiency. The public sector respondents, however, feel the collaboration strategy needs conscious direction because the public sector could influence the private sector more than the private sector could influence the public sector.
Table 6.12: Points of Disagreement between the Public and Private Sectors on the Effectiveness of the Public-Private Sector Collaboration

<table>
<thead>
<tr>
<th>Points of Disagreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors SPLIT on the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public-private sector collaboration does not need conscious direction and should be allowed to evolve on its own to address whatever issue emerges</td>
<td>P 22</td>
<td>39.3</td>
<td>20</td>
</tr>
<tr>
<td>I 15</td>
<td>36.6</td>
<td>18</td>
<td>43.9</td>
</tr>
<tr>
<td>The Public Sector SPLIT and the Private Sector SUPPORTED the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regardless of the intent, public sector intervention decreases private sector efficiency in using resources</td>
<td>P 23</td>
<td>41.1</td>
<td>20</td>
</tr>
<tr>
<td>I 5</td>
<td>12.2</td>
<td>23</td>
<td>56.1</td>
</tr>
<tr>
<td>The Public Sector SUPPORTED and Private Sector SPLIT on the following statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The public sector influences the private sector more than the private sector influences the public sector</td>
<td>P 7</td>
<td>12.5</td>
<td>28</td>
</tr>
<tr>
<td>I 4</td>
<td>9.8</td>
<td>15</td>
<td>36.6</td>
</tr>
</tbody>
</table>

Perceptions about the Effectiveness of the Malaysia Incorporated Concept

As discussed in chapter 4, the Malaysian Incorporated Concept was propounded by the Prime Minister of Malaysia, Dr Mahathir Mohamad (1991a) as one of the fundamental bases of national development. He has broadly defined this Concept to mean a system of cooperation between the government and the private sector to achieve economic progress such that the benefits of economic growth would be shared by all. This part
discusses how effective the Malaysia Incorporated Concept has been in fostering and promoting public-private sector collaboration in Malaysia.

As shown in Table 6.13, four statements related to the Malaysia Incorporated Concept were put forward to the respondents in order to discover their perceptions regarding the ability of the Concept to foster. The statements were:

1. The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
2. The Malaysia Incorporated Concept has strengthened Malaysia’s public-private sector working relationship.
3. The Malaysia Incorporated Concept has improved the dissemination of information between public and private sectors.
4. The Consultative panels formed under the Malaysia Incorporated Concept have been effective in enhancing private sector understanding of public policies.

**Points of Agreement**

The results in Table 6.13 illustrate that the public and private sector respondents strongly supported all the statements regarding the effectiveness of the Malaysia Incorporated Concept in fostering public-private sector collaboration in Malaysia. In fact, on three of the statements, the percentage of private sector respondents who agreed with the statements surpassed the percentage of the public sector respondents who agreed. For example, all respondents from the private sector agreed that the Malaysia Incorporated Concept is needed to foster public-private collaboration compared to 82.5 per cent of the public sector respondents. Also, 90.2 per cent of the private sector respondents agreed with the statement that the Malaysia Incorporated Concept had strengthened the public-private sector working relationship compared with 85.7 per cent of the public sector respondents. Finally, 78 per cent of the private sector respondents agreed that the Consultative Panels formed under the Malaysia Incorporated Concept had been effective in enhancing the private sector’s understanding of public policies compared with only 72.7 per cent of the public sector respondents.
Table 6.13: Points of Agreement between the Public and Private Sectors on the Effectiveness of the Malaysia Incorporated Concept

<table>
<thead>
<tr>
<th>Points of Agreement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.</td>
<td>%</td>
<td>Freq.</td>
</tr>
<tr>
<td>Both Sectors STRONGLY SUPPORTED the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Malaysia Incorporated Concept is needed to foster public-private sector collaboration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 3</td>
<td>5.3</td>
<td>47</td>
<td>82.5</td>
</tr>
<tr>
<td>I 0</td>
<td>0.0</td>
<td>41</td>
<td>100.0</td>
</tr>
<tr>
<td>The Malaysia Incorporated Concept has strengthened the Malaysia public-private sector working relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 0</td>
<td>0.0</td>
<td>48</td>
<td>85.7</td>
</tr>
<tr>
<td>I 0</td>
<td>0.0</td>
<td>37</td>
<td>90.2</td>
</tr>
<tr>
<td>The Malaysia Incorporated Concept has improved the dissemination of information between public and private sectors.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 3</td>
<td>5.5</td>
<td>49</td>
<td>89.1</td>
</tr>
<tr>
<td>I 0</td>
<td>0.0</td>
<td>36</td>
<td>87.8</td>
</tr>
<tr>
<td>The Consultative panels formed under the Malaysia Incorporated Concept have been effective in enhancing the private sector understanding of public policies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 3</td>
<td>5.5</td>
<td>40</td>
<td>72.7</td>
</tr>
<tr>
<td>I 0</td>
<td>0.0</td>
<td>32</td>
<td>78.0</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SUPPORTED the following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The streamlining of government rules and regulations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 4</td>
<td>7.4</td>
<td>45</td>
<td>83.3</td>
</tr>
<tr>
<td>I 0</td>
<td>0.0</td>
<td>24</td>
<td>58.5</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SPLIT on the following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The upgrading of counter services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 0</td>
<td>0.0</td>
<td>51</td>
<td>94.4</td>
</tr>
<tr>
<td>I 1</td>
<td>2.4</td>
<td>20</td>
<td>48.8</td>
</tr>
</tbody>
</table>

As to whether the Malaysia Incorporated Concept had improved the dissemination of information between the public and private sectors, most of the respondents from both sectors believed that it had. The survey results show that 89.1 per cent of the public...
sector respondents and 87.8 per cent of the private sector respondents agreed with this statement.

On issues related to government administrative improvement programs, however, the public sector respondents strongly supported the statements that the streamlining of government rules and procedures and the upgrading of the counter services had made it easier for the private sector to deal with government agencies. The private sector respondents, however, indicated that even though the improvements made had, to some extent, made it easier for the private sector to deal with government agencies, further improvements are needed. As shown in Table 6.13, only 58.5 per cent of the private sector respondents agreed with the first statement, while 41.5 per cent took a neutral position. On the second statement, the response from the private sector respondents was split with 48 per cent agreeing that the upgrading of the counter services had made it easier for them to deal with government agencies while 48 per cent indicated that they had no opinion on it.

**Points of Disagreement**

On the remaining government administrative improvement programs, the response from the public sector respondents indicate that they believe that the paper-less civil services, ISO 9000, the Civil Service Link, and the training and attachment programs has made it easier for the private sector to deal with government agencies. As shown in Table 6.14, the response from the private sector respondents, however, showed uncertainty as to the benefits of these improvements programs. This may be due to the fact that most of these improvements are still in the early stage of implementation as most were introduced in the early 1990s. Thus far, the private sector respondents are unsure as to whether these improvement programs will improve their working relations with the government.

In summary, consistent with the earlier findings, this section has shown that the Malaysia Incorporated Concept has been effective in promoting collaboration between the public and private sectors. The private sector respondents, especially, are of the opinion that the Malaysia Incorporated Concept is needed to promote this collaboration. This could mean that the private sector is sceptical that the collaboration could take place without conscious policy such as the Malaysia Incorporated Concept. Also, the mixed response from the private sector respondents on the administrative improvements implemented by
the public sector since the early 1990s suggest that these reforms have, thus far, limited success in improving the services rendered to the private sector.

Table 6.14: Points of Disagreement between the Public and Private Sectors on the Effectiveness of the Malaysia Incorporated Concept

<table>
<thead>
<tr>
<th>Statement</th>
<th>Disagree and Strongly Disagree</th>
<th>Agree and Strongly Agree</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq.  %</td>
<td>Freq.  %</td>
<td>Freq.  %</td>
</tr>
<tr>
<td>The Public Sector SUPPORTED and Private Sector SPLIT on the following statements:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The paper-less Civil Service</td>
<td>P  3  5.6</td>
<td>31  57.4</td>
<td>20  37.0</td>
</tr>
<tr>
<td></td>
<td>I  6  14.6</td>
<td>11  26.8</td>
<td>24  58.5</td>
</tr>
<tr>
<td>The implementation of ISO 9000</td>
<td>P  4  7.7</td>
<td>36  69.2</td>
<td>12  23.1</td>
</tr>
<tr>
<td></td>
<td>I  7  17.5</td>
<td>13  32.5</td>
<td>20  50.0</td>
</tr>
<tr>
<td>The Civil Service Link</td>
<td>P  6  11.3</td>
<td>36  67.9</td>
<td>11  20.8</td>
</tr>
<tr>
<td></td>
<td>I  2  4.9</td>
<td>16  39.0</td>
<td>23  56.1</td>
</tr>
<tr>
<td>The training programs to enhance the understanding of civil servants regarding the Malaysia Incorporated Concept</td>
<td>P  5  9.1</td>
<td>40  72.7</td>
<td>10  18.2</td>
</tr>
<tr>
<td></td>
<td>I  1  2.4</td>
<td>15  36.6</td>
<td>25  61.0</td>
</tr>
<tr>
<td>Attachment program for Senior Government Officers</td>
<td>P  5  9.3</td>
<td>35  64.8</td>
<td>14  25.9</td>
</tr>
<tr>
<td></td>
<td>I  1  2.5</td>
<td>13  32.5</td>
<td>26  65.0</td>
</tr>
<tr>
<td>The Public Sector STRONGLY SUPPORTED and the Private Sector SPLIT on the following Statement:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Client's Charter</td>
<td>P  2  3.7</td>
<td>42  77.8</td>
<td>10  18.5</td>
</tr>
<tr>
<td></td>
<td>I  1  2.5</td>
<td>11  27.5</td>
<td>28  70.0</td>
</tr>
</tbody>
</table>

The Impact of Regulatory Cooperation on Policy Formulation

The analysis and results of the two sets of responses to the regulatory statements in the mailed questionnaire provide several interesting attitudinal patterns. In the following discussion, the response from the public and private sector respondents to the following three areas are examined: (1) the identification of policy concerns; (2) communication between the public and private sectors concerning public policies; and (3) the impact of business on policy proposals.
Identification of Policy Concerns

Table 6.15 shows that the private sector respondents believe that conferences and meetings organised by government agencies, published government documents and mass media were the most regularly used source for identification of public policies concerning business. Trade Associations or Newsletters were the third most important source. These results suggest that the private sector respondents might consider conferences and meetings organised by the government as the most reliable source of information regarding public policies that may affect its business initiatives.

Table 6.15: The Private Sector’s Source of Information Regarding Public Policies

<table>
<thead>
<tr>
<th>Variables</th>
<th>Industries (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conferences or Meetings organised by government agencies</td>
<td>90.2</td>
</tr>
<tr>
<td>Government Documents</td>
<td>87.8</td>
</tr>
<tr>
<td>Mass Media</td>
<td>87.8</td>
</tr>
<tr>
<td>Trade Associations or Newsletters</td>
<td>82.9</td>
</tr>
<tr>
<td>Others</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Communication on Policy Matters

The survey found that the majority of the public and private sector respondents agreed that the private sector should assist in the formulation of public policy through dialogue with the public sector. As shown in Figure 6.2, more than 90 per cent of respondents from both sectors strongly supported this statement. The favourable response from the respondents could be due to the fact that they believe that cooperation will benefit them.

Meanwhile, Figure 6.3 shows that more than 70 per cent of the private sector respondents agreed that dialogue sessions organised under the Malaysia Incorporated Concept had provided them with opportunities to participate actively in the formulation of public policy. More than 80 per cent of the public sector respondents agreed with this statement.
Figure 6.2: Responses to the proposition that: the private sector should attempt to assist in the formulation of public policies through dialogue with the public sector.

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>1.8</td>
<td>3.6</td>
<td>94.6</td>
</tr>
<tr>
<td>Private Sector</td>
<td>2.4</td>
<td>0.0</td>
<td>97.6</td>
</tr>
</tbody>
</table>

Figure 6.3: Responses to the proposition that: the dialogue sessions organised under the Malaysia Incorporated Concept have enabled the private sector to participate actively in the formulation of public policies.

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>5.4</td>
<td>14.3</td>
<td>80.3</td>
</tr>
<tr>
<td>Private Sector</td>
<td>2.4</td>
<td>19.5</td>
<td>78.1</td>
</tr>
</tbody>
</table>

In summary, Figures 6.2 and 6.3 show that respondents from the public and private sectors have favourable views on direct communications as a basis for cooperation between the public and the private sectors. Both groups of respondents also seemed to be satisfied with the dialogue sessions organised under the Malaysia Incorporated Concept as a venue for them to collaborate in the formulation of public policy. This result suggests that cooperative public and private relations hold promise for developing a more cooperative atmosphere.
Impact of Private Sector Participation on Policy Proposals

Figure 6.4 shows that more than 80 per cent of respondents from the private sector believe that they had ample opportunities to present their views to the public sector on specific policy proposals compared with around 77 per cent of the public sector respondents. The responses from private sector respondents are consistent with their earlier responses that the dialogue sessions had given the private sector opportunities to participate actively in policy formulation, especially in policies that may impact its businesses.

Figure 6.4: Responses to the proposition that: the private sector has many opportunities to present views to the public sector on specific policy proposals

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>8.9</td>
<td>14.3</td>
<td>76.8</td>
</tr>
<tr>
<td>Private Sector</td>
<td>0.0</td>
<td>17.1</td>
<td>82.9</td>
</tr>
</tbody>
</table>

With regard to the regularity of the policy proposals submitted to public sector agencies, around 70 per cent of the private sector respondents registered their agreement with the statement that they had opportunities to present their views. As shown in Figure 6.5, slightly less than 70 per cent of the public sector respondents agreed with this. Thus, the responses confirm that the private sector regularly submitted its views on particular policy proposals to the public sector.

As shown in Figure 6.6, the survey result revealed that more than 80 per cent of private sector respondents believe that their proposals introduced through dialogue sessions had a greater chance of being accepted in the formulation of the public policies. Meanwhile, less than 70 per cent of the public sector respondents supported this statement, while almost 30 per cent took a neutral position. This result may suggest that the public sector take into consideration the views of the private sector but does not necessarily
incorporated them into the final result although it encourages the private sector to participate in the process.

Figure 6.5: Responses to the proposition that: the private sector regularly submits its views to the public sector on particular policy proposals

![Bar chart showing responses to the proposition](chart1)

<table>
<thead>
<tr>
<th></th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Sector</td>
<td>16.1</td>
<td>14.3</td>
<td>69.6</td>
</tr>
<tr>
<td>Private Sector</td>
<td>0.0</td>
<td>29.3</td>
<td>70.7</td>
</tr>
</tbody>
</table>

Informal interviews with some of the private sector respondents on this issue suggested that they are aware of this situation. According to the private sector respondents, the timing of the consultative panels could be one of the reasons why the public sector does not incorporate some of the private sector views in the final policy. Some of the
respondents indicated that some of the consultation process took place at the tail-end of the policy formulation process and as such they do not think they can contribute much. Nonetheless, the private sector respondents believe that the process is beneficial because they can at least give their views on the policy while it is still being discussed. The public sector respondents, on the other hand, indicated that they were satisfied with the private sector participation in the dialogue process. However, they felt that some of the private sector's proposals were usually quite narrow in terms of coverage and concentration and, as such, it is not always possible for them to be incorporated into the larger policies.

The responses from the private sector respondents to the statement that 'the concerns of the private sector are most often accepted by the public policymakers in the policies finally adopted' confirmed the earlier view. As shown in Figure 6.7, slightly more than 60 per cent of the private sector respondents took a neutral position on this statement. This non-committal response may reflect the private sector respondents' scepticism about the probability that private sector concerns will be taken into consideration by the public policymakers. The responses from the public sector respondents is also consistent with the earlier result shown in Figure 6.6 as less than 60 per cent of the public sector respondents indicated that concerns expressed by private sector were most often accepted by the officials during the decision-making process. In any case, the response from the public sector respondents could be overstated because of their concern to be in accord with the policy rhetoric on cooperation.

Figure 6.7: The responses to the proposition that: the concerns of the private sector are most often accepted by public policy-makers in the policies finally adopted
Despite the above, the public sector respondents supported the idea that there should be collaboration between the public and private sectors in meeting policy objectives. As shown in Figure 6.8, more than 90 per cent of the public sector respondents believe that public sector policy should include provisions that require the public and the private sectors to develop cooperative approaches for meeting policy objectives. The private sector respondents were less enthusiastic as only around 70 per cent supported this statement. Despite their mild support, the response from the private sector respondents suggests that the private sector is willing to cooperate with the public sector in meeting policy objectives.

Figure 6.8: Responses to the proposition that: public sector policies should include provisions that require the public and private sectors to develop cooperative approaches for meeting policy objectives

<table>
<thead>
<tr>
<th></th>
<th>Public Sector</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>1.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Neutral</td>
<td>3.6</td>
<td>31.7</td>
</tr>
<tr>
<td>Agree</td>
<td>94.6</td>
<td>68.3</td>
</tr>
</tbody>
</table>

In summary, this section has shown that exposure to cooperative non-adversarial relations did lead to some agreement on certain issues related to policy formulation. For example, the respondents from both sectors seem to agree that the private sector participation in the policy making process has had positive impacts on policy formulation. Even though the private sector respondents are sceptical about the incorporation of private sector concerns in the final policy, they favour the collaboration process because, at least, it provides the private sector with opportunities to forward its views on policy that may affect their business.
Findings and Conclusions

The purpose of this chapter is to find out if the Malaysian public and private sectors supported the public-private sector collaboration in the development process. The perception concept is applied as a tool to measure their support. The assumption is that if their perception towards each other, the public-private sector collaboration and the Malaysia Incorporated Concept is favourable, then it can be assumed that they supported the collaboration strategy.

The Findings of the Survey

The survey results found that the gap between the public and private sector respondents on important issues such as the perceptions of the public and private sectors of each other and their relations is tangible. In particular, statements comparing the performance of the public and the private sectors show disagreements in perceptions. Criteria for evaluating government decisions are also a source of disagreement. Moreover, the survey shows that there is strong support from the private sector for less government intervention in business. Also, while the public sector prefers direct participation of the private sector in the societal development process, the private sector prefers indirect methods.

Another finding is that the Malaysia Incorporated Concept seem to have limited success in changing the perceptions of the private sector towards civil servants and vice versa. For example, the survey results indicate that the private sector is sceptical about the impartiality of civil servants, the efficiency of civil servants in utilising resources and the professionalism of civil servants. The survey results also indicate that the public sector is sceptical in regard to the private sector's willingness to participate directly in the social development process; the need for the private sector to follow the spirit and intent of public policies; and as to whether the private sector faces high levels of risks if it makes philanthropic contributions.

With regard to public-private sector relations, the finding is that the respondents from both sectors opposed the idea that the public and private sectors should treat each other as adversaries and that the sectors should operate in their own individual self-interest.
However, respondents gave opposing views on statements such as the competency of the public servants and the effectiveness of private sector decision-making methods.

On the impact of resource dependence and the social and political influences on public-private sector relations, the survey results show that there is no major conflict in the perceptions of the public and private sector respondents. Both agreed that each should contribute to meeting social needs and that public policies do address critical issues of society. However, there is little uniformity in the perceptions regarding the impact of factors affecting the stability of public policies.

With regard to the effectiveness of the Malaysia Incorporated Concept, the conclusion drawn from the survey is that, to some extent, the Concept is successful in fostering closer working relationships between the public and the private sectors. This is reflected in the strong support given by both sectors to the statements related to the effectiveness of the Concept in promoting public-private collaboration. However, the private sector is uncertain as to how the various administrative improvement programs carried out by the government will improve its dealings with the public sector.

Another finding is that the private sector is willing to participate in the dialogue sessions organised by the public sector and has submitted their policy proposal regularly for public sector consideration. Despite this, the survey indicate that while the public sector takes into consideration the private sector views, it does not mean these views are incorporated in the final policy. In fact, the private sector acknowledged this as evidence from their responses on the subject.

**Conclusions**

The overall conclusion that can drawn from the discussions is that, there are some favourable perceptions, at least among public servants in the three ministries and of private sector personnel in the three industries surveyed, in regards to the public and private sectors perceptions toward each other, the public-private sector collaboration and the Malaysia Incorporated Concept. However, their favourable perceptions seem to be pertinent to matters related to ‘what should be’. This is not surprising because, normatively, there is an agreement that ‘good’ things are desirable (Stevens, 1988:103).
For example, in regards to industrial policy, the responses from the public and private sector respondents seem to suggest that they favour public-private sector collaboration in the formulating of this policy. This is because they recognised business reliance on government and believe incentives in the form of tax incentives and suitable tax structures would help to promote investments and increase the competitiveness of industries.

Also, the public and private sector respondents seem to favour the collaboration approach as a means to achieve national goals. Both sectors agreed that collaboration would enable the sectors to cooperate in the decision-making process especially in those decisions that may affect the private sector. The response from the private sector respondents implies that the private sector is willing to cooperate with the public sector if such cooperation would help to improve policy formulation and contribute towards improving the efficiency of business.

In line with the above, the public and private sector respondents concede that the public-private sector collaboration would be effective in improving the services rendered by the public sector to the private sector and in improving the perceptions of the private sector towards the public sector. The public and private sector respondents also agreed that the collaboration would enable them to foster close working relations. They support the suggestion that jointly-sponsored programs and activities are more likely to ensure the achievement of their objectives.

However, as stated earlier, the public and private sector respondents found consensus only on issues related to 'what should be'. This consensus, however, breaks down when it comes to matters of fact. For example, the public sector respondents feel that the private sector has not done enough in terms of providing social services to the general public. The private sector respondents, on the other hand, feel that public servants are not impartial, and are inefficient in discharging their duties. The private sector respondents also draw a line when it comes to public sector involvement in its business operations. The private sector respondents reject any form of government intervention at company level. This is because the private sector respondents perceive that any form of government intervention at that level will adversely affect the efficiency of the private sector. On how to manage public-private sector collaboration, the response from the
public and private sector respondents indicates that they are divided on this issue. The public sector respondents prefer to have some direction on this issue while the private sector respondents prefer to let the collaboration evolve on its own.

Stevens (1988) has stated that the exposure to cooperative relations between the public and private sectors could lead to attitudinal changes. In Malaysia's case, the survey shows that the exposure to cooperative relations between the public and private sector respondents under the Malaysia Incorporated Concept has, to some extent led to some attitudinal change. However, there are limits to these attitudinal changes. Does that imply the Malaysia Incorporated Concept has failed? Such a conclusion may be extreme. In any case, it may not be possible to totally remove scepticism on the part of the two parties. Perhaps, the acceptable conclusion would be that the collaboration strategy through the Malaysia Incorporated Concept has to some extent reduce the degree of scepticism between the public and private sectors so as to allow some forms of cooperation to take place. If one looks at the number of points in the survey where the respondents from both sectors are in consensus compared to the number of points where the consensus breaks down, it may be possible to assume that the level of scepticism has been lowered. In another context, the study found that an increase in well-meaning contacts between the public and private sectors has the potential to yield efficient results provided it is carefully designed. For example, despite the survey findings that most of the consensus between the Malaysian public and the private sector respondents pertained to issues related to 'what should be' and does not seem to extend to matters of fact, they do seem to support the idea that there should be an accommodative role for the public and private sectors in the development process. This is because they perceived collaboration as a 'good' thing. However, the survey also indicated that the advantage of cooperative public-private sector relations seem to be limited because both sectors do not seem to fully understand the extent of the initiatives that they should take in dealing with legitimate economic and social problems under the collaborative effort.
Chapter 7
Malaysia: Public-Private Sector Collaboration in Technology Development

Introduction

Technology development is one of the areas where the Malaysian Government is promoting the public-private sector collaboration approach. This is because technology is seen as critical to Malaysia's development aspirations, especially now that Malaysia is embarked on its Vision 2020 strategy of achieving industrial country status at a time of a new 'industrial revolution'. Malaysia's New Development Policy (NDP) relies on private firms to incorporate these new features of the new industrial revolution. The critical policy role for the government in this collaboration strategy and in ushering in the new industrial revolution is to create the enabling environment that strengthens private firms' demand for these capabilities. At the same time an appropriate technological infrastructure also needs to be put in place to satisfy that demand (World Bank/UNDP 1995:xvii).

The main objective of this chapter is to evaluate the institutional and policy frameworks (refer Appendix 5 for a summary of the institutional and policy frameworks for the technology development program) put in place by the Malaysian Government to promote public-private sector collaboration in the technology development process. This chapter also discusses the impact of this collaboration on Malaysia's technology development goals.

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1 This revolution involves not only new technologies (new processes and products), but also new management and organisational techniques, new forms of linkages between buyers and suppliers and new, tighter relations between technology and science (World Bank/UNDP 1995:xvii).
2 The National Development Policy (NDP) was launched in 1991 as the successor of the National Economic Policy (NEP). The NDP reaffirmed the relevance of the NEP by retaining its main elements of poverty eradication and restructuring of societies. At the same time, the NDP introduced several new thrusts for 'balance development'. Please refer to Government of Malaysia, 1996a. The Second Outline Perspective Plan 1991-2000, Kuala Lumpur: National Printing Department, for detail discussion on the NDP.
Assessments of Institutional and Policy Frameworks in Promoting Technology Development through the Public-Private Sector Collaboration Strategy

The Malaysian Government's commitment to technology development can be considered as strong, as reflected by the launching of the APITD in 1990 (MOSTE 1990:5):

Malaysia must industrialise if it is to be an advanced, affluent nation and technology is the crucial factor for production without which the industrial effort will falter.

This commitment is supported by the emphasise on the importance of S&T in the 6MP (Government of Malaysia 1991a:187):

The development of science and technology (S&T) is essential for Malaysia's overall socio-economic advancement. The widespread application of S&T will provide more effective and sustainable means towards achieving a competitive, diversified and global-based economy in order to attain higher standards of living in the future.

The Government commitment is reflected in the various strategies, policies and incentives introduced over the years (refer to appendix 5). In terms of allocation, majority of the Government funding was channels through the Intensification of Research in Priority Areas (IRPA) program. The program was launched in the Fifth Malaysia Plan (5MP). The objective is to focus R&D activities in areas that have potential for enhancing the national socio-economic position (National Council for Scientific Research and Development, 1996:1). A total of RM275.80 million was spent by 24 R&D institutions and universities for the implementation of 613 R&D programs during the 5MP, 1985-1990. Meanwhile, during the 6MP, a total of RM589.44 million was disbursed to 32 institutions and universities to undertake 776 R&D programs. For the 7MP, a two-fold increase in allocation of IRPA over that of the 6MP has been made (National Council for Scientific Research and Development, 1996:1).

In terms of the implementation, R&D in agriculture sector have always been given priority by the Malaysian government. This is reflected by the amount of R&D allocated to this sector since the launching of IRPA in 1986. As shown in table 7.1 the agriculture sector received the biggest allocation under the 5MP and 6MP followed by industry, science and strategic R&D. Meanwhile, figure 7.1 shows that during the 6MP, out of a total of RM567.1 million, 49.2 per cent was spent on agriculture science while 30 per
cent was spent on applied sciences and technologies. According to the Malaysian Government (1996:424), the agriculture sector received continuous priority because of the need to redirect resources towards downstream industrial R&D to generate potentially higher value-added commercial activities, aside from reflecting Malaysia’s superiority in agriculture R&D, especially with regard to perennial crop.

Table 7.1: IRPA Allocation by Major Field of Research (1985-1995)

<table>
<thead>
<tr>
<th>Direct R&amp;D Programs</th>
<th>RM million</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fifth Malaysia Plan</td>
<td>Sixth Malaysia Plan</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>203.2</td>
<td>273.8</td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>138.1</td>
<td>177.7</td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>33.1</td>
<td>59.8</td>
<td></td>
</tr>
<tr>
<td>Strategic</td>
<td>39.4</td>
<td>78.6</td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>-</td>
<td>10.21</td>
<td></td>
</tr>
<tr>
<td>Total Direct R&amp;D</td>
<td>413</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>S&amp;T Infrastructure and development</td>
<td>123.7</td>
<td>560.3</td>
<td></td>
</tr>
<tr>
<td>Total S&amp;T Allocations</td>
<td>540.5</td>
<td>1160.3</td>
<td></td>
</tr>
</tbody>
</table>


Figure 7.1: IRPA Expenditure by Major Fields of Research, 1991-95

As for 1997, a total of 1,876 IRPA R&D projects valued at RM 146.2 million were funded under 11 panels involving a total of 32 research institutes, as shown in table 7.2 (http://mastic.gov.my)

Table 7.2: IRPA Funding in 1997

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of Projects approved</th>
<th>Amount of Funding (Million RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agro-industry</td>
<td>796</td>
<td>47.60</td>
</tr>
<tr>
<td>Construction</td>
<td>29</td>
<td>2.68</td>
</tr>
<tr>
<td>Energy</td>
<td>64</td>
<td>7.37</td>
</tr>
<tr>
<td>Environment</td>
<td>108</td>
<td>13.89</td>
</tr>
<tr>
<td>Information Technology</td>
<td>47</td>
<td>8.75</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>148</td>
<td>11.52</td>
</tr>
<tr>
<td>Medical</td>
<td>275</td>
<td>21.15</td>
</tr>
<tr>
<td>Mineral</td>
<td>17</td>
<td>2.41</td>
</tr>
<tr>
<td>Science Engineering &amp; Biotechnology</td>
<td>275</td>
<td>27.25</td>
</tr>
<tr>
<td>Services</td>
<td>26</td>
<td>1.68</td>
</tr>
<tr>
<td>Socio-Economic</td>
<td>91</td>
<td>1.97</td>
</tr>
<tr>
<td>Total</td>
<td>1,876</td>
<td>146.27</td>
</tr>
</tbody>
</table>


According to Anuwar (1992:154), an important prerequisite for promoting technology diffusion and application within domestic industries is the creation of networking or collaborative linkages between the public sector and industry. Public sector-industry interaction can create a competitive environment between research institutes so that they will always strive to be in the forefront of R&D in their selected areas of specialisation.

Institutional Framework

As illustrated by Figure 7.2, Anuwar (1992) suggested the following, as the necessary environment to promote indigenous S&T capability:

1. On the supply side, policies to develop technological capabilities are human resource development and public sector support policies.
2. On the demand side, policies to create markets for technology are fiscal and financial support, and assistance in diffusion and application of technology.
3. Policies to integrate the supply and demand sides, that is the S&T institutional framework including the establishment of an effective coordinating ministry, commitment towards S&T, and a S&T information system.
The Government has implemented the following institutional changes to enhance public-private sector collaboration in promoting industrial R&D and technology development (Anuwar 1992; Asian Development Bank 1994, Danaraj 1995a):

- Establishment of the Malaysian Technology Development Corporation (MTDC)\(^3\) to enhance commercialisation of R&D results and to encourage the growth of technology-based firms.

- The setting up of the Malaysia High Technology Park, the Kulim High Tech Park and the Johor High Tech Park.

- The establishment of the Malaysian Institute of Microelectronic Systems (MIMOS) in 1985 to initiate R&D in software design and computer application.

- The establishment of the Coordinating Council for Technology Transfer at the end of 1986 as part of the institutional support for industries to study, analyse, and monitor programs on technology and R&D.

\(^3\) Among the roles of MTDC are (a) to act as a link between the local R&D community and the marketplace; (b) to help channel funds to projects with commercial potential and those that use locally developed technology or that acquired from foreign sources; and (c) to stimulate local R&D efforts that can be developed into economically viable projects (Goh 1994:45).
• The establishment of a Technology Transfer Centre at Standards and Industrial Research Institutes of Malaysia (SIRIM) to provide information, extension services assistance in acquiring foreign technology patent evaluation, and training courses.

• The setting up of the Malaysia Industry-Government Group of High Technology (MIGHT) to promote 'technology prospecting', the identification of new products, businesses and investment opportunities for R&D and technology development.

• The setting up of the Science and Technology Information Services.

• The establishment of the University-backed innovation centers to strengthen university-private sector links and to facilitate the commercialisation of university-based research.

• The establishment of a Skills Development Funds, jointly managed by the public and private sectors;

• The institution of a number of administrative reforms to overcome the constraints of the existing institutional framework for R&D in Malaysia, including, corporatisation of R&D institutions and universities, joint-ventures and MOUs with private companies, contract research, commercialisation of research results, and the introduction of consultative mechanisms with industry.

• Plans to establish a national laboratory accreditation system where quality assurance and testing, physical evaluation, and safety tests would be conducted.

• Plans for a National Centre for computer assisted design and computer assisted manufacturing, especially in the mould and die sub-sector, to introduce, train, and provide facilities to the private sector, especially to manufacturers using computers.

• Plans to set up technology transfer centres to gather technological information, study new technologies, and modify them for local use.

These measures are over and above the initiatives undertaken to improve the effectiveness of the National Council for Scientific Research and Development (NCSRD)\(^4\). For this purpose two standing committees, five working groups, and nine Intensification of Research in Priority Areas (IRPA) panels were established. These groups, comprising experts from both public and private sectors, assess existing strengths and weaknesses in S&T policy. As for the IRPA program, a review by the NCSRD standing committee resulted in the IRPA panels being revamped and the

\(4\) Refer to Appendix 5 for details.
projects under IRPA being monitored in detail by the new panels.\(^5\) A number of other reforms have also been initiated to improve funding and review mechanisms so as to ensure the objective and focus of future projects are more output/result-oriented (World Bank/UNDP 1995).

Despite the various measures implemented by the government, public-private sector collaboration in technology development does not seem to be widespread. Assessments by World Bank/UNDP (1995) found that currently the NCSRD is dominated by the public sector since 25 out of its 38 members are from public-sector agencies. The present set-up of the NCSRD does not give the private sector an 'equal voice' in the formulation of the technology policies in Malaysia. This is in contrast to the Japanese experience where public-private sector cooperation, with power sharing, negotiations and collaboration at all stages of policymaking and implementation can have significant benefits for technology policy (World Bank/UNDP 1995:59). In Malaysia's case, however, the 'doer' has not been empowered with a dominant role in the technology-push initiatives.

In addition, the study found that there are weaknesses in Malaysia's institutional framework to promote R&D and technology. For example, in Malaysia, no fewer than fifteen agencies are responsible for formulating and implementing technology development policies. These agencies have their own mandate, priorities and jurisdiction. The decentralised nature of the implementing agencies makes it difficult for any coordination agency to set priorities, pursue steady and coherent policies and coordinate actions and policies. Moreover, in a number of areas related to technology policy such as financial assistance, support for SMIs and human resource development for industry, there are many different ministries and agencies executing their own (and in many instances, overlapping) programs. Sometimes, this has led to piecemeal and \textit{ad hoc} policy-formulation, with a lack of focus and coordination in many of the areas of S&T policy. Lastly, the complex and unclear division of responsibilities between ministries, departments and agencies is cumbersome for the administrator, and confusing for the clientele/user. There is little coherence and no clear focus to the diverse repertoire of industrial policy instruments.

\(^5\) Each panel has instituted a two-level vetting of R&D proposals, namely a technical review by an expert
As to why the collaboration effort between PRIs and industry is not effective is because the present R&D system is based on a ‘research-push’ approach. This approach did not pose much of a problem in the past because the ultimate objective of R&D then was clearly defined, that is, to increase agricultural productivity. Moreover, the end-users could in a way be considered a homogeneous group in terms of their R&D and technology needs, hence, the lack of interaction with end-users or clients. However, this lack of interaction poses a serious weakness if the R&D institutes are expected to support the development of local capabilities in manufacturing technologies. Greater interaction with private industry is necessary in order to understand their requirements. Although the government has recognised the need for closer cooperation between the public research system and industry, the mechanism or modus operandi is yet to be developed to ensure the interaction is practical and implementable (Nesadurai 1994:316).

When it was first established in 1984, MIMOS was intended to spearhead the development of local capabilities in microelectronics technology, particularly integrated circuit (IC) design. Unfortunately, MIMOS could not locate private sector demand for its R&D, even though MIMOS has become more oriented to the needs of private industry. Since 1991, MIMOS has responded to this lack of demand by moving into service-oriented activities such as printed circuit board (PCB) design and fabrication, IC failure analysis, telecommunications testing, and computer network services. In particular, its move to providing customised software and expert systems applications for the banking, industrial and telecommunications sectors has improved its interactions with industry, thereby making the institute more relevant to the private sector (Lim 1997:207).

**Linkages between Higher Learning Institutions and Industry**

In term of linkages between higher learning institutions and industry, the existing data (Table 7.3) shows that an impressive degree of industrial and manufacturing orientation of higher education R&D (HERD) has already been achieved in Malaysia. For example, the 1994 R&D survey by MASTIC (1996a) shows that while the R&D expenditure of the manufacturing sector has declined, R&D expenditure for energy resources has

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group and a strategic review by the panel (World Bank/UNDP 1995).
increased tremendously, from 0.4 per cent of total higher education R&D on industry-oriented research to 82.2 per cent. However, in terms of the number of personnel involved, industry-oriented research has been constant at around 25 per cent.

Table 7.3: **Industry-Oriented R&D in Malaysian Universities, 1992, 1994**

<table>
<thead>
<tr>
<th>Industry-Oriented Socio-Economic Objectives of Higher Education R&amp;D (HERD)</th>
<th>1992</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R&amp;D expenditure</td>
<td>R&amp;D Personnel</td>
</tr>
<tr>
<td></td>
<td>RM '000</td>
<td>%</td>
</tr>
<tr>
<td>SO4</td>
<td>Mineral Resources (excluding energy)</td>
<td>489.4</td>
</tr>
<tr>
<td>SO5</td>
<td>Energy Resources</td>
<td>201.4</td>
</tr>
<tr>
<td>SO6</td>
<td>Energy Supply</td>
<td>1,179.9</td>
</tr>
<tr>
<td>SO7</td>
<td>Manufacturing</td>
<td>11,186.2</td>
</tr>
<tr>
<td>SO8</td>
<td>Construction</td>
<td>2,611.8</td>
</tr>
<tr>
<td>Sub-Total: Industry-Oriented HERD</td>
<td>15,668.7</td>
<td>30.9</td>
</tr>
<tr>
<td>Total Higher Education R&amp;D</td>
<td>50,685.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total Industry-Oriented R&amp;D by All Performers</td>
<td>311,983.8</td>
<td>1,486.9</td>
</tr>
<tr>
<td>Industry-oriented HERD as a Proportion (%) of all Industry-Oriented R&amp;D</td>
<td>5.0</td>
<td>20.3</td>
</tr>
</tbody>
</table>

**Note:** \(^1\) Full Time Equivalents


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\(^6\) Malaysia’s electronics sector was dominated by MNCs which had their own R&D backup from their parent companies. The domestic firms were technologically backward and did not require MIMOS’ R&D service (Nesadurai 1994).
Analysis of the external funding of technology-related activities by six Malaysian universities over a six-year period (1989 to 1994) by the World Bank/UNDP (1995) supported this finding. As shown in Table 7.4, universities have substantially increased their commercial interaction with external clients, in terms of both the number of projects and the value of payments received. The composition of that externally contracted work has also been changing sharply. They have moved away from more routine projects involving limited knowledge inputs, and towards engineering and technology development activities requiring ‘deeper’ technological skills and activities. There is also a rapidly growing training component among these externally contracted activities, which suggests that universities are beginning to respond in flexible, client-centred ways to demands for people-embodied technology and expertise. Finally, the data shows that industrial enterprise accounted for about half of all externally contracted services.

However, the World Bank/UNDP (1995) study made two important qualifications regarding these findings. Firstly, the study found that despite rapid growth over the period, externally contracted R&D accounted for only about 11 per cent of total payments, which means that nearly 90 per cent of demand for technology-related services from universities in Malaysia consists of demand for activities other than R&D. Secondly, the study found that even though payments for industry-contracted R&D were a fairly small proportion of total university expenditure on R&D, they were only a tiny fraction of total business enterprise R&D (around 0.3 per cent). Thus, even if industry-contracted university R&D was significantly increased, this would add little to the country’s total industry-oriented R&D efforts.
Table 7.4: Technology Related Activities Undertaken by Universities Under Contract for External Organisations (1989-1994)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Projects</td>
<td>Payment RM million</td>
<td>(%)</td>
</tr>
<tr>
<td>1. Existing specifications, designs, equipment, know-how etc.</td>
<td>A</td>
<td>Testing/Analysis support for existing products/processes</td>
<td>4,138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TECHNICAL SERVICES</td>
<td>4,138</td>
</tr>
<tr>
<td>2. new designs, specifications, systems etc., derived from engineering with existing underlying technology</td>
<td>B</td>
<td>Design/Engineering/Consultancy to improve existing products/processes</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Design/Engineering/Consultancy based on existing technology to introduce new products or production facilities</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C (i) core product/process technology</td>
<td>(22)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C(ii) Feasibility and EIA studies</td>
<td>(17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'DESIGN AND ENGINEERING'</td>
<td>171</td>
</tr>
<tr>
<td>3. new R&amp;D-derived knowledge for product/process design and development</td>
<td>D</td>
<td>Test and Design data to help develop new products, processes, etc.</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New knowledge derived from R&amp;D for new products, processes, etc</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'RESEARCH AND DEVELOPMENT'</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>TRAINING</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OTHERS:</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G (i) Social-science-based studies</td>
<td>(81)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G (ii) Non-industrial EIA/Fees.</td>
<td>(215)</td>
</tr>
<tr>
<td>TOTAL AVERAGE PER YEAR</td>
<td>4,680</td>
<td>52.88</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The hallmark of an effective R&D institutional framework is the existence of fully developed links between the universities and industry and PRIs and industry, and intra-sector cooperation. However, Jong-Chun (1995) argued that to date, such linkages are not evident in Malaysia. He attributed this to the regulatory structure of public institutions, especially the PRIs that allow for little interaction with industry. PRIs generally operate within a bureaucratic framework that slows down the transfer of technology to the private sector. NSCRD is aware of this and is taking remedial measures. As for universities, their main task is to teach. As such, academic staff often do not have time to chase down research prospects with industry, negotiate the projects and then carry them out. In addition, local industry itself may not be confident of unknown expertise. This, in turn, is due to insufficient contact and linkages that would make local expertise known to industry. Therefore, under these circumstances, industry prefers to import technology, though this may be expensive and an undesirable process in the long run, as no indigenous capacity is built for future industrial development (Jong-Chun 1995:5-6).

This lack of cooperation between the sectors may affect the achievement of technology development goals because, as indicated by the 1994 National Survey of Research and Development (MASTIC 1996a:6), the equivalent of 6,675.5 person years of effort on R&D took place in Malaysia in 1994. Of this, 54.9 per cent was performed in government agencies and public institutions, 7.4 per cent in institutes of higher learning and only 37.4 in the private sector, as shown in Figure 7.3.

Figure 7.3: R&D Personnel (Full-time Equivalents) by Sector, 1994

![Bar chart showing R&D Personnel by Sector: GOV & PRI 54.9%, Private Sector 37.4%, IHL 7.4%, NPO 0.3%]

Note: IHL = Institutes of Higher Learning
GOV & PRIs = Government Agencies and Public Sector Institutes
NPO = Non-profit Organisation

Despite the above, Jong-Chun admitted that the linkages between PRIs and Industry have been slowly evolving. He provided the following as examples of where the linkages have been established (Jong-Chun 1995:6):

- Metrology, traceability of measurements and accreditation of laboratories (SIRIM);
- Preparation of product standards (SIRIM);
- Science and technical information services (MIMOS-jaring, MASTIC, SIRIM);
- The one-stop agency for SMIs (proposed MISTIC);
- Consultancy and design services (SIRIM and MIMOS);
- Technology demonstration and awareness centers (a start at SIRIM)

Meanwhile, the following are examples of linkages between universities and industry that are being instituted or at the discussion stage (Jong-Chun 1995:6):

- Research and consultancy bureaus (in place at all universities);
- Pre-university institute under an autonomous foundation (United technologies at UTM);
- Technology Parks (UTM), distinguished by type of tenants. Their characteristics are links and communications, and facilities such as incubators. The goal of the incubators is to maximise the growth and commercial success of tenant enterprise.
- Centers of excellence (or university-industry research centers or university-industry cooperative research

**Policy Framework**

Policy changes were introduced by the Malaysian Government to encourage greater private sector R&D activities and to promote wider public-private sector collaboration in the technology development process. However, the way the policies were implemented can also produce unintended results. According to Kim (1993:6), the weakest link in the scientific and technological system in many developing countries is not the formulation of policies but rather the installation of instruments to set them in motion. For example, in Malaysia, some of the policy instruments used since the early 1970s to encourage export-oriented industrialisation and employment creation led to the establishment of large labour-intensive, low value-added operations of foreign firms, that is the MNCs. The low value-added and labour-intensive nature of production in these foreign firms operating in Malaysia did not require much input in terms of R&D. Technology-intensive operations were carried out either in home bases or in the regional headquarters rather

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7 These policy instruments include the 1968 Investment Incentives Act and the 1971 Free Trade Zone Act (Nesadurai 1994:302).
than in Malaysia. It is only recently that some electronics and other firms, in shifting to higher value-added activities such as wafer fabrication and the manufacture of high-end, more complex products, are turning to local efforts in design and innovation (Nesadurai 1994).

Nesadurai (1994) also pointed out that the incidence of protection within the local economy probably has had some effect on technology development in Malaysia. Alavi (1995) argued that some highly protected industries did achieve international competitiveness over time, but several did not. The main problem, according to Alavi (1995) was that there was no clear objective behind the design of protection policy and it was not backed by well-defined attempts to shift protected industries to export markets. Protection is known to reduce competition and, by extension, could have had an impact on a firm’s decision to make investments in technical activity and R&D. In addition to protection, licensing controls may also have had an indirect impact on R&D in industry. To the extent that entry may have been denied to more efficient enterprises, this could result in limiting the degree of competition between enterprises in a given industry or sub-sector. While the licensing requirement has been liberalised since 1986, the presence of this regulation could have had some effect on competition and the extent to which firms would otherwise have utilised technology and R&D as a tool in meeting this competition (Nesadurai 1994:302-7).

**Tax Incentives**

With regard to tax incentives, the World Bank/UNDP (1995) study suggested that even though Malaysia’s tax schemes to promote R&D in business enterprises can be considered as generous by international standards, they have two drawbacks. One, the eligible activities are narrowly defined and two, eligible activities must be submitted for approval as clearly defined research projects. These requirements seem to exclude a large range of innovation activity in industrial firms. More importantly, they rule out several types of firm-level innovative activity, such as production engineering and process

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8 In her analysis of protection, Alavi used largely 1987 data (Alavi 1995).
9 Existing literature is however not very conclusive on the subject of technical activity and protection levels (Fransman 1986).
10 Since 1975, entry into the manufacturing sector has been controlled by the government through the Industrial Coordination Act, and was dependent on consideration of the objectives of the New Economic Policy (NEP), sub-sectoral development plans, and supply conditions affecting each industry (Nesadurai 1994:304).
improvements. In addition, the application procedure is complex and cumbersome. Firms must submit details about specific projects – including details of research method, other projects, materials used and so on.

Nevertheless, the World Bank/UNDP study is cautious about drawing firm conclusions on this issue. It did, however, suggested that the tax incentive scheme might have, at best, only a marginal effect in stimulating R&D among firms. Firms interviewed during the World Bank/UNDP study confirmed that the scheme did not have a major impact on their R&D decisions. In its current form it seems to be a weak instrument for achieving the policy objectives of stimulating, re-orienting or deepening the innovative activity of business enterprises. However, many of the firms interviewed believed that such incentive schemes, including a reformed tax incentive scheme, could be important in encouraging technological effort (World Bank/UNDP 1995:70)

**Technology Transfer**

Technology transfer has an important role in promoting Malaysia’s industrial development. As shown in Table 7.5, technology agreements approved by the Malaysian Government have averaged 143 per year (Government of Malaysia 1991a; Government of Malaysia 1996b) over the 1990-95, compared with an average of 119 per year in the 1980s and 16 agreements per year in the 1970s (Asian Development Bank 1990:48). For the period 1991-95, Technical Assistance and Know-How agreements account for almost 50 per cent of all agreements followed by licenses and patents, trademarks, joint ventures and management agreements. Foreign technology imports have been concentrated in technology intensive industries such as electronics and electrical goods, chemical production and transport equipment (see Table 7.6). Together, these industries accounted for more than 50 per cent of all the technology agreements between 1990 and 1995, reflecting the emphasis in the Government’s policies. Foreign technology imports in resource-intensive industries such as wood and wood products, pulp and paper products and rubber products have remained at a low level.
Table 7.5: Technology Imports by Type of Agreement, 1975-95 (No)

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint Venture</td>
<td>6</td>
<td>9</td>
<td>15</td>
<td>11</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>46</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>27&lt;sup&gt;1&lt;/sup&gt;</td>
<td>46</td>
<td>72</td>
<td>93</td>
<td>80</td>
<td>85</td>
<td>55</td>
<td>36</td>
<td>421</td>
</tr>
<tr>
<td>Know-how</td>
<td>0</td>
<td>5</td>
<td>12</td>
<td>10</td>
<td>21</td>
<td>23</td>
<td>11</td>
<td>4</td>
<td>81</td>
</tr>
<tr>
<td>Licenses and Patents</td>
<td>1&lt;sup&gt;2&lt;/sup&gt;</td>
<td>14</td>
<td>17</td>
<td>28</td>
<td>14</td>
<td>44</td>
<td>32</td>
<td>20</td>
<td>155</td>
</tr>
<tr>
<td>Management</td>
<td>12</td>
<td>6</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Services</td>
<td>12</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Trademark</td>
<td>0</td>
<td>5</td>
<td>19</td>
<td>9</td>
<td>12</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>60</td>
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<td>Turnkey and Engineering</td>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Supply purchase</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
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<tr>
<td>Sales, marketing</td>
<td>0</td>
<td>7</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>96</td>
<td>155</td>
<td>165</td>
<td>140</td>
<td>185</td>
<td>128</td>
<td>79</td>
<td>852</td>
</tr>
</tbody>
</table>

Note: 1. Includes Know-how  
2. Includes Trademark

Table 7.6: **Malaysia: Foreign Technology Imports by Industry Groups 1975-95 (No)**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>4</td>
<td>10</td>
<td>14</td>
<td>9</td>
<td>3</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>Textile and Apparel</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Wood and Wood product</td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Paper, paper products, printing</td>
<td>-</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Chemical and chemical products including pharmaceutical</td>
<td>3</td>
<td>16</td>
<td>24</td>
<td>21</td>
<td>19</td>
<td>20</td>
<td>12</td>
<td>17</td>
<td>113</td>
</tr>
<tr>
<td>Rubber and rubber products</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>Plastics and plastics products</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>3</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>Non-metallic mineral products</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>12</td>
<td>5</td>
<td>8</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Basic metal</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>Fabricated metal products</td>
<td>8</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>Manufacture of Machinery</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Electrical and electronics</td>
<td>17</td>
<td>20</td>
<td>41</td>
<td>45</td>
<td>38</td>
<td>69</td>
<td>44</td>
<td>25</td>
<td>262</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>5</td>
<td>20</td>
<td>18</td>
<td>16</td>
<td>28</td>
<td>25</td>
<td>21</td>
<td>9</td>
<td>117</td>
</tr>
<tr>
<td>Hotel and tourism</td>
<td>-</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>Others</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>20</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>58</td>
<td>96</td>
<td>155</td>
<td>165</td>
<td>140</td>
<td>185</td>
<td>128</td>
<td>79</td>
<td>852</td>
</tr>
</tbody>
</table>

The World Bank/UNDP (1995:73) study suggested five limitations in Malaysia's technology transfer policy: (1) the approval procedure is complex; (2) some aspects of the approval process duplicate other incentives and licensing systems; (3) the schemes do not reach SMI to encourage them to acquire technology from foreign partners; (4) they include no elements designed explicitly to increase the use of technology transfer as a mechanism for strengthening domestic innovative capabilities; and (5) implementation relies heavily on the \textit{ex ante} review of technology transfer plans rather than monitoring transfers in progress through \textit{ex post} evaluation of the implementation plans. These reasons could explain why the demand for technology in Malaysia is lower than expected for a dynamic industrialising economy as compared to a country like Korea. Demand from local firms, especially SMI, is very limited. Most firms in Malaysia acquire only basic operating and maintenance skills through technology transfer agreements. They typically acquire very little of the particular kinds of know-how and expertise that are needed for technology upgrading and innovation (World Bank/UNDP 1995:72).

According to Nambiar (1996:72), the linkage between MNCs and ancillary firms gives MNCs the impetus to share technological expertise on matters such as product design and quality. It also encourages ancillary firms to make technological investments since they have the patronage of MNCs and the ready market that comes with the arrangement. Therefore, Nambiar (1996) is of the opinion that these firms should be the ones that would best appreciate advice on R&D because they would otherwise be limited to the technology demand of the MNCs they are associated with, a link that deprives them of flexibility in the use of knowledge. However, Malaysia does not have a policy of assisting and encouraging ancillary firms to venture out beyond the boundary of the MNCs. In the case of the electronics and electrical goods industries, Rasiah (1989:294) suggested that the ethnic origins of the owners of the ancillary firms in these industries have been a reason for the Malaysian Government’s disinterestedness.

**Intellectual Property Rights**

The World Bank/UNDP (1995) study also found that from October 1986 to August 1994, only 1.9 per cent of all patents and utility models granted in Malaysia were granted to Malaysians. As shown in Table 7.7, more than one third of patents and utility models were granted to American nationals, followed by Japanese, British and German nationals,
reflecting a weak indigenous base in Malaysia. Kondo (1995:19) attributed this to the fact that few utility models were applied for, even though models are easier to create than patents and that the level of awareness regarding intellectual property rights is low in Malaysia and Malaysians are good at copying products. Lastly, Kondo (1995) attributed this situation to a trade secrets problem. This is a serious concern among industrialists in Malaysia because they are afraid information regarding their products may be leaked to others. Even if a firm appeals in the court, it would take so long to settle the case that the firm may go bankrupt by the time compensation is obtained. Kondo (1995) suggested that an in-depth study is necessary to assess the effectiveness of the Malaysian Intellectual Property Rights protection system for trade secrets, copyrights and so on.

Table 7.7: Patents and Utility Models Granted in Malaysia by Nationality (October 1986 to August 1994)

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>1990</td>
</tr>
<tr>
<td>Japan</td>
<td>1193</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>634</td>
</tr>
<tr>
<td>Germany</td>
<td>232</td>
</tr>
<tr>
<td>Switzerland</td>
<td>210</td>
</tr>
<tr>
<td>Australia</td>
<td>189</td>
</tr>
<tr>
<td>France</td>
<td>159</td>
</tr>
<tr>
<td>Netherlands</td>
<td>124</td>
</tr>
<tr>
<td>Malaysia</td>
<td>100</td>
</tr>
<tr>
<td>Sweden</td>
<td>82</td>
</tr>
<tr>
<td>Others</td>
<td>435</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5248</td>
</tr>
</tbody>
</table>


IRPA

The IRPA program has not been particularly successful in stimulating research in industrial technology. The level of cooperation between institutions receiving IRPA funds and private industry was also limited, with little contract research undertaken for industry. Much of the interaction with the private sector involved technical advisory services. This last finding may point to a success of the IRPA despite its failure to
stimulate research into new technologies. Following the reasoning of the evolutionary model of innovation, it is technical advice, not R&D, which is likely to be the primary need of Malaysia’s firms at this stage of their technological development (Lim 1997:206).

**Venture Capital**

As for venture capital, the Malaysian case illustrates some problems inherent in launching technology finance in a newly industrialising economy. According to Lall (1996b), the venture capital industry is growing well in Malaysia and two-thirds of its financing has been directed at electrical and electronics firms. While this suggests a desirable focus on high technology activities, a closer look at these activities gives a different picture. As shown in Figure 7.4, only a small amount was invested in technology-oriented activities. The bulk of VCC investments was directed to the funding of acquisitions and bridge financing. Only 26.7 per cent was invested in company start-ups. In addition, the average size of venture capital investment was very small. This may indicate that the funds were unwilling to take risks, and probably unable to assess the viability of technology-based projects. There may also be little demand for technology loans from new entrepreneurs, though it seems from interviews during the World Bank/UNDP (1995) study, that existing demand in Malaysia was not being met by the supply.

**Small- and Medium-scale Industries (SMIs)**

Because of the various constraints faced by the SMIs such as lack of capital, qualified human resources, and inadequate market information, private R&D activities are mostly carried out by large-scale firms (Asian Development Bank 1990:48). An IDRC study (International Development Research Centre 1988) indicated that the overall level of innovation in the SMIs is low. Of 753 firms interviewed during the study, only 142 had any experience in the development of new products while the one-third or more of the firms which had developed new products had done so at a rate of not more than one per year (International Development Research Centre 1988:26). This study also indicated

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11 A 1993 review of IRPA projects funded during the Fifth Plan period (1986-90) found that only a small proportion of the research was in new areas of technology, with the exception of biotechnology. Industrial research was allocated only 28 per cent of IRPA funding compared to 47 per cent for agriculture R&D. Moreover, only 46 per cent of the industrial research funds were actually used compared to a 90 per cent utilisation rate of agriculture. In addition, only 18 per cent of the funds allocated for research in information and communications technology was utilised (Felker 1995:13.2).
that the SMIs do not conduct any formal research activities for product development. However, the study showed that product development was guided by imitating the products of other companies; by informal talks with potential users; or through a limited level of formal market research.

Figure 7.4: Distribution of Venture Capital Financing, 1994


Another important source of technology for the SMIs was the vendors or suppliers of machinery and equipment while the least popular sources were consultants, universities, and licensing agreements. The SMIs were involved in very few licensing agreements and collaboration with universities was negligible. In the case of building materials manufacturing technology, only three out of 61 SMIs had either licensing agreements with foreign firms or collaboration with universities (International Development Research Centre 1988:38).

The present incentive system has not been conducive to the promotion of SMIs and their technological development. The pioneer status tax incentives provided under the Promotion of Investments Act tend to favour large scale enterprises and, while there is a five per cent tax abatement scheme for small-scale manufacturing, it is not really an incentive which benefits SMIs alone because most manufacturing firms can, in one way or another, be eligible for it (Asian Development Bank 1990:50).

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12 Such as in-house research, and joint or contract research (International Development Research Centre 1988).
Equally important, the response to the incentives available for R&D has generally remained weak. Moreover, the nature of the incentives provided has also been ineffective in promoting innovation activity among SMIs. The double deduction for non-capital R&D expenditures is subject to Government approval which requires a degree of paperwork which SMIs are either not accustomed to or find burdensome and costly to undertake. All other tax incentives such as the industrial building allowance and capital allowances are performance-based so that only those firms which perform R&D can claim such tax concessions. Most SMIs cannot afford to devote funds to R&D (Asian Development Bank 1990:50).

A further problem faced by SMIs is that manufacturing-oriented scientific and technological infrastructure in Malaysia is not well developed. Public research institutes in Malaysia are engaged primarily in agriculture research. SIRIM is one of the few institutions which provides technical consultancy, extension services, technical information and testing services to manufacturing-based SMIs. However, SIRIM is severely constrained by a shortage of qualified human resources as well as financial resources. As a result, SIRIM is unable to provide the necessary technical services, extension and information support to manufacturing SMIs (Asian Development Bank 1990:51).

Another important factor impeding the technology development of SMIs is the low level of managerial human resources and lack of skilled technical and scientific human resources. According to the IDRC study (1988), for instance, only 15 per cent of the SMI managers have university degrees. In addition, since technological development in SMIs takes place primarily in the form of assimilation and adaptation of foreign technology or the technology of other firms in the domestic market, the quality of production workers is crucial for successful innovation activity among SMIs. According to IDRC (International Development Research Centre 1988:appendix B), only a small fraction of SMIs possess trained personnel, the level ranging between 15 and 19 per cent, depending on the industry (Asian Development Bank 1990:51).
Industrial Technical Assistance Funds (ITAF)

The establishment of ITAF is particularly useful for the SMIs since they seldom utilise the existing incentives and lack the start-up funds for R&D activities. However, in practice, the constraint is generally related to accessibility to funds, especially by SMIs (Anuwar 1992:153). ITAF got off to a slow start. Up to December 1993 some 301 SMI applications had been approved for a total of RM10.95 million. With the creation of the SMIs Division in MITI and publicity campaigns, including a road show, carried out in early 1994, applications to ITAF increased. As of 4 December 1994, matching funds totalling RM18.6 million has been granted to SMIs. However, as shown in Table 7.8, the majority of the recipients used the ITAF scheme for marketing development. SMIs tapped the consultancy service scheme to prepare feasibility reports seeking soft loans under the loan scheme for modernisation and automation of SMIs. That there were some 92 applications for the product development and design scheme is evidence that the ITAF program was able to give a shot in the arm to local SMIs in the challenging areas of manufacturing/process technology and product design (Danaraj 1995b:7).

Table 7.8: ITAF Schemes

<table>
<thead>
<tr>
<th>Schemes Implementing</th>
<th>Maximum Allocation</th>
<th>Applications</th>
<th>Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheme</td>
<td>Agency</td>
<td>(RM million)</td>
<td>Grants (RM)</td>
</tr>
<tr>
<td>ITAF 1: Consultancy Services</td>
<td>BPMP</td>
<td>5</td>
<td>40,000</td>
</tr>
<tr>
<td>ITAF 2: Product Development and Design</td>
<td>SIRIM</td>
<td>20</td>
<td>240,000</td>
</tr>
<tr>
<td>ITAF 3: Quality and Productivity Improvement</td>
<td>SIRIM</td>
<td>20</td>
<td>250,000</td>
</tr>
<tr>
<td>ITAF 4: Market Development</td>
<td>SIRIM</td>
<td>5</td>
<td>40,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vendor Development Program (VDP)

When the VDP program commenced in 1988, only Proton volunteered to be the anchor firm\(^{13}\) in the automotive sector. MITI funded the technical grants through Proton, which assumed the role of a pioneer anchor company in providing technical assistance to SMIs in the industry. Proton's commitment succeeded in developing its vendors under the VDP (World Bank/UNDP 1995a:116). Proton has 128 vendors and out of these, 87 have received technical assistance from foreign firms, while 15 are joint ventures with foreign firms. This result indicates that there has been a diffusion of modern technology and quality management among these 128 Proton vendors. Pertronas, Telekom Malaysia, Tenaga Nasional, Sapura and Sharp-Roxy have also embarked on Vendor Development Programs in their respective industries. However, the comprehensive approach to technology transfer is missing in the other VDP schemes. As anchor firms are not provided any subsidy, there is no incentive to incur additional costs for technical assistance. Furthermore, Proton has a policy of ‘one vendor, one product’\(^{14}\), whereas under the other VDP schemes this is not the case (Danaraj 1995b:10).

Technology and Human Resources

It is argued that the most critical factor contributing to the low level of technology development in Malaysia is the shortage of highly skilled human resources, particularly in the context of industrial development. A survey by MASTIC (1996a:19) found that lack of skilled personnel was ranked foremost as the factor hindering innovation in Malaysian companies. Other surveys and studies such as MASTIC (1996a:13), Zahari (1988) MOSTE (1990), Asian Development Bank (1990), World Bank/UNDP (1995), Lall (1996b), and World Bank (1997) also pointed out that lack of skilled human resources is the most important reason why Malaysia is lagging behind in terms of technology development.

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\(^{13}\) Anchor firm refers to a large firm, which provides technical assistance to its vendors to improve technological levels as well as markets. For example, as an anchor firm, Proton provide technical resources in a broad range of technology related activities to its vendors. The purpose is to nurture the linkage between large-scale firms and SMIs.

\(^{14}\) ‘One vendor, one product’ refers to Proton’s Vendor Development Program where each of its vendors specialised in producing only one part of parts requires to produce Proton’s car.
Impact of Public-Private Sector Collaboration Strategy on Malaysia's Technology Development.

The purpose of this section is to find out whether the institutional and policy frameworks puts in place by the Malaysian government have any impact on Malaysia's technology development. As explained in Chapter 1, it is not easy to attribute Malaysia's technology development to specific policy or strategy and even more difficult to establish causality. Moreover, other factors may also contribute to this development. Notwithstanding this, it is feasible to assume that the institutional and policy frameworks have partly contributed to Malaysia's technology development. For this purpose, this section used the level of R&D activities in Malaysia as an indicator. The assumption is that, if the level of technology is high, then the institutional and policy framework put in place by the Government has partly contributed to this achievement.

A World Bank/UNDP (1995) study stated that Malaysia's export and production performance in technologically sophisticated and high skilled products has been impressive. The annual rate of growth of manufacturing exports during 1970-91 was 27.7 per cent and this expansion has transformed Malaysia's industrial structure.\(^{15}\) However, the study indicated that there are significant weaknesses underlying Malaysia's impressive industrial structure transformation\(^{16}\) and they have contributed to the low technological capabilities of Malaysia's firms (World Bank/UNDP 1995).

Jong-Chun (1995:5) also indicated that Malaysia has made significant advances in high-tech industries in recent years and has become one of the fastest growing nations in electronics, electrical machinery, transport equipment, including automobiles and textile industries. However, this has been achieved primarily by technology transfer from other industrialised countries. Malaysia's technological institutions have not been able to keep abreast of the rapid progress in these high-tech industries.

\(^{15}\) In the 1960s, manufacturing was dominated by 'light' industries comprising relatively traditional activities. By 1990 however, Malaysia had a relatively advanced industrial structure, with the share of heavy industry being only marginally lower than in Korea and Taiwan. In particular, the specialisation in electrical and electronics manufactures gives it a strong foundation in the most dynamic and technology-based activities in modern industry (World Bank/UNDP 1995:xvii).
In an earlier study, M. Zawawi (1991:3) indicated that Malaysia’s technology base has remained disappointingly poor despite more than two decades of industrialisation. Nesadurai (1994:296) also expressed the same view. According to her, while Malaysia has a sound technology base in the primary sector, the same cannot be said for the manufacturing sector. It is generally felt that very little indigenous R&D goes on in the private sector. The World Bank/UNDP (1995) study found that Malaysia spends far less on R&D than Singapore, Taiwan, Korea and Japan as shown in Table 7.9, indicating that R&D activity is not receiving the priority it deserves. Meanwhile, Danaraj (1995a:1) pointed out that despite the tremendous emphasis given by the Malaysian government to S&T, there are indications that Malaysia’s technology policy is not sufficiently geared to the rapid economic transformation taking place in Malaysia’s economy.

Table 7.9: **R&D Expenditure in Selected Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Date</th>
<th>R&amp;D Expenditure as % of GNP</th>
<th>By Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>1994</td>
<td>0.35</td>
<td>0.17</td>
</tr>
<tr>
<td>Thailand</td>
<td>1987</td>
<td>0.2</td>
<td>0.03</td>
</tr>
<tr>
<td>Singapore</td>
<td>1992</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Taiwan</td>
<td>1991</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Korea</td>
<td>1992</td>
<td>2.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Japan</td>
<td>1988</td>
<td>2.8</td>
<td>1.9</td>
</tr>
</tbody>
</table>


The results of comprehensive surveys of industrial R&D in Malaysia in 1992\(^{17}\) and 1994 by MASTIC suggest two things. Firstly, as shown in Table 7.10, total R&D in Malaysia is lower than originally believed. The R&D expenditures in 1992 were around 0.39 per cent of GDP while the expenditures for 1994 were 0.35 per cent of GDP. Secondly, the

\(^{16}\) For instance, there is a heavy reliance on a few manufactured products to drive exports. In 1992, 58.5 per cent of manufactured exports came from electrical and electronic products alone. Secondly, MNCs have dominated Malaysia’s manufactured exports because of the reliance on parent companies’ marketing networks. There is also little participation in exports by local private firms whose products are not technologically sophisticated and which have not developed independent marketing networks. Thirdly, the local content of exports is low. Apart from local resource-based products, most manufactured products exporters have relatively weak linkages with the domestic economy (World Bank/UNDP 1995:xvii-xviii).

\(^{17}\) This survey was the first of its kind.
private sector is contributing an increasingly larger share, 45 per cent of total national R&D in 1992 and 48.3 per cent in 1994 (MASTIC 1994; 1996a).

However, MASTIC estimates are lower than previous estimates. For example, the Sixth Malaysia Plan (Government of Malaysia 1991a:189) and APITD (MOSTE 1990:32) estimated the national R&D expenditure at 0.8 per cent of GNP in 1989. The World Bank/UNDP (1995:13) attributed this difference in estimates to the differences in the definition of R&D, which may lead to the MASTIC figures understating the total. Nevertheless, even if this definition bias is accounted for, analysts (Anuwar, 1992; World Bank/UNDP 1995; Lall 1996a) are of the opinion that total R&D in Malaysia is lower than expected.

Table 7.10: **Malaysia: R&D 1992 and 1994**

<table>
<thead>
<tr>
<th></th>
<th>1992 GDP at current price</th>
<th>1992</th>
<th>% of GDP</th>
<th>% of Total</th>
<th>1994 GDP at current price</th>
<th>1994</th>
<th>% of GDP</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>141,585.4</td>
<td>174,081.7</td>
<td></td>
<td></td>
<td>174,081.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D Public Sector¹</td>
<td>292.3</td>
<td>0.21</td>
<td>53.1</td>
<td>315.7</td>
<td>0.18</td>
<td>51.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D Private Sector²</td>
<td>248.4</td>
<td>0.18</td>
<td>45.1</td>
<td>295.5</td>
<td>0.17</td>
<td>48.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D Foreign</td>
<td>10.0</td>
<td>0.01</td>
<td>1.8</td>
<td>Na</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total R&amp;D</td>
<td>550.7</td>
<td>0.39</td>
<td>100.0</td>
<td>611.2</td>
<td>0.35</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**¹ Including Institutes of Higher Learning ² Including Non-profit Organisations


The lack of private sector R&D is a growing concern in Malaysia. According to the Sixth Malaysia Plan (Government of Malaysia 1991a:189) more than 80 per cent of the National R&D was due to the public sector. Meanwhile APITD (MOSTE 1990:22) argued that private sector R&D is virtually absent while in the SMIs, R&D is totally absent. However, the MASTIC survey in 1994 found private sector R&D in Malaysia to be around RM295.5 million or 48 per cent of total R&D, as shown in Table 7.10. In fact,

¹ The Ministry of Science, Technology and the Environment (MOSTE), Malaysia, defined R&D as (MASTIC 1996a:2) creative work undertaken on a system basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications.
the Malaysia Industrial Training and Productivity (MITP) survey\textsuperscript{19} (World Bank 1997b) supported the MASTIC survey. The MITP found private sector R&D in 1994 to be around RM1,030 million (World Bank 1997b:64). Despite the obvious differences in the amounts estimated by the two surveys,\textsuperscript{20} the important point to note is that private sector R&D expenditure in Malaysia is not 'virtually absent'. Nevertheless, if a comparison is made with other Asian NICs\textsuperscript{21}, even with the more expansive R&D measure, levels of private R&D in Malaysian industry are still relatively low (World Bank 1997b).

Hamzah (1993:12) attributed this situation to the structure of Malaysia's industry. According to Lall (1996a:11), most domestic firms in Malaysia grew out of import-substitution industries. Malaysia has retained a protected import-substituting regime, and in the 1980s, intensified it with a heavy industry program led by the public sector. It imposed various restraints on MNC entry into the domestic-oriented sector of industry, and within the local sector sought to promote Malay entrepreneurship and participation (the export-oriented sector was excluded from these policies). The import-substituting sector did not have much in the way of technology import interventions, and little help was given to local enterprises in searching for and buying appropriate technologies.

Moreover, much of existing Malaysian industrial R&D is done by affiliates, which are conducting product and process adaptation and the design of some special production equipment (Rasiah 1992). However, for affiliates to increase local R&D to the extent envisaged would require a move into far deeper research functions, for which MNCs generally find it more efficient to rely on established facilities in developed countries (Danabalan 1993).

\textsuperscript{19} The MITP survey was fielded to 2,200 manufacturing firms. The survey enumeration was carried out over a period of four and a half months between December 1994 and May 1995. The overall response rate was 68 per cent. Response rates were somewhat lower for the new entrant sample (66 per cent) as compared to the survivor sample (71 per cent), and varied considerably across states, with the lowest response rate being in the Wilayah Persekutuan area (for detailed information on the survey, refer to World Bank 1997b report).

\textsuperscript{20} World Bank (1990:64) attributed these to the differences in the definition of R&D between the surveys. However, the author is not able to confirm this because the MITP report did not provide definition of R&D in its report.

\textsuperscript{21} By way of comparison, overall R&D as a per cent of GDP is 1 per cent in Singapore, 1.7 per cent in Taiwan, and 1.2 per cent in Korea, while the corresponding private sector contribution to R&D is 0.6, 0.8 and 1.7 per cent, respectively, as shown in Table 7.1.
In addition, foreign affiliates have little relationship with the Malaysian PRIs. This situation is common in developing countries that have a strong tradition of dependence on foreign investment. Moreover, local firms in Malaysia lack 'technology culture' (Asian Development Bank 1994; Lall 1996b). They invest in technological activity only to the extent needed to conform to quality standards or marketing requirements, not to develop autonomous innovative capabilities (Asian Development Bank 1994:49). In fact, the MASTIC survey (1996a) shows that MNCs are leading the industrial research effort in Malaysia.22

Private sector R&D activities in Malaysia are not only at a low level, but also concentrated in a limited number of industries. According to a FMM survey (Federation of Malaysian Manufacturers (FMM) 1988)23 chemical products, rubber, and the plastics sub-sectors accounted for about 51 per cent of total private manufacturing sector R&D expenditures, followed by food, beverages and tobacco which accounted for 29 per cent. R&D expenditures on basic metal and fabricated metal machinery and equipment including electronics together accounted for only 12 per cent of total private manufacturing sector R&D; negligible amounts were expended for R&D on textiles, apparel and leather products, wood and wood products including furniture, paper and paper products, and non-metallic mineral products. This suggests that Malaysia's resource-based industries, except rubber products, tend to pay little attention to R&D.

The more recent MITP survey, as shown in Table 7.11, shows industries such as electrical machinery and chemicals are more likely to have high proportions of firms with R&D and technology licenses, using quality control and testing equipment in production. Capital intensive industries with heavy domestic ownership, such as iron and basic metals and transport equipment, are also relatively technology-intensive. A high proportion of firms in iron and basic metals have technology licenses and quality control equipment, while many firms in the transport sector (primarily Proton) report R&D spending. Electrical machinery, along with plastics, rubber and apparel are also export-oriented

22 However, the scale of the effort is modest. For instance, in 1992 Malaysian industrial enterprises employed a total of only 394 (full time equivalent) researchers and 405 technicians in R&D. This was spread over 97 firms, an average of 4.1 researchers and 4.2 technicians per firm (MASTIC, 1994) compared to 500-1000 research engineers employed by each major electronics company under the leading Korean chaebol (World Bank/UNDP 1995:13).

23 Of the 67 firms that responded to this FMM survey, only 32 firms reported having conducted R&D activities (Federation of Malaysian Manufacturers 1988).
industries, and a high proportion of these firms have quality control and testing equipment to produce for export markets. The remaining industries – food products, beverages and tobacco, textiles and apparel, and general machinery – show low overall levels of technology indicators (World Bank 1997b:65).

The results of these surveys indicate that between 1988 and 1995 there has not been any change in terms of industries that carried out R&D. The proportion of firms that performed R&D in chemical and rubber industries continues to be high. Meanwhile, the proportion of firms that performed R&D in wood and furniture, textiles and apparel continues to be low. The only industry that has experienced changes is the transport sector, wherein 50.7 per cent of the firms reported that they conduct R&D. These results suggest that Malaysian Government strategy and policy to promote the widening and deepening of technology development has achieved marginal success.

Table 7.11: Technology Characteristics by Industry

<table>
<thead>
<tr>
<th>Industrial Sector</th>
<th>Do R&amp;D</th>
<th>Have Technology License (%)</th>
<th>Have QC &amp; Testing equipment</th>
<th>R&amp;D % of sales</th>
<th>Equipment over 10 years %</th>
<th>Automatic Equipment %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>3.7</td>
<td>1.2</td>
<td>7.9</td>
<td>0.99</td>
<td>19.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Beverages and Tobacco</td>
<td>1.9</td>
<td>0.3</td>
<td>2.3</td>
<td>0.09</td>
<td>46.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Textiles</td>
<td>5.3</td>
<td>0.6</td>
<td>10.2</td>
<td>0.15</td>
<td>12.5</td>
<td>5.9</td>
</tr>
<tr>
<td>Apparel</td>
<td>8.1</td>
<td>0.5</td>
<td>11.2</td>
<td>0.51</td>
<td>23.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Wood &amp; Furniture</td>
<td>4.6</td>
<td>1.4</td>
<td>5.6</td>
<td>0.74</td>
<td>20.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Paper &amp; Publishing</td>
<td>4.8</td>
<td>0.7</td>
<td>6.5</td>
<td>0.45</td>
<td>66.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Chemicals</td>
<td>30.4</td>
<td>27.0</td>
<td>42.4</td>
<td>1.11</td>
<td>23.1</td>
<td>6.5</td>
</tr>
<tr>
<td>Rubber</td>
<td>11.8</td>
<td>5.1</td>
<td>33.0</td>
<td>0.79</td>
<td>29.6</td>
<td>16.0</td>
</tr>
<tr>
<td>Plastics</td>
<td>8.3</td>
<td>11.4</td>
<td>14.4</td>
<td>0.08</td>
<td>15.2</td>
<td>16.5</td>
</tr>
<tr>
<td>Glass &amp; Pottery</td>
<td>11.1</td>
<td>4.8</td>
<td>17.7</td>
<td>0.30</td>
<td>28.2</td>
<td>7.5</td>
</tr>
<tr>
<td>Iron &amp; Basic Metals</td>
<td>3.8</td>
<td>59.5</td>
<td>66.3</td>
<td>0.02</td>
<td>56.4</td>
<td>5.1</td>
</tr>
<tr>
<td>Fabricated Metals</td>
<td>11.6</td>
<td>3.3</td>
<td>19.4</td>
<td>0.90</td>
<td>18.7</td>
<td>5.7</td>
</tr>
<tr>
<td>Machinery</td>
<td>3.7</td>
<td>3.4</td>
<td>18.7</td>
<td>0.80</td>
<td>51.4</td>
<td>6.3</td>
</tr>
<tr>
<td>Electrical Machinery</td>
<td>18.9</td>
<td>11.8</td>
<td>76.1</td>
<td>3.23</td>
<td>19.6</td>
<td>27.1</td>
</tr>
<tr>
<td>Transport</td>
<td>50.7</td>
<td>2.9</td>
<td>11.9</td>
<td>1.24</td>
<td>82.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Other</td>
<td>52.8</td>
<td>2.5</td>
<td>3.0</td>
<td>0.77</td>
<td>11.3</td>
<td>2.5</td>
</tr>
</tbody>
</table>

The FMM survey (Federation of Malaysian Manufacturers 1988) noted that almost two-thirds of firms that reported conducting R&D activities were joint venture firms involving substantial foreign equity. These firms tended to rely on foreign sources for their technology development whereas the locally-owned firms relied extensively on local research institutes such as SIRIM, the Rubber Research Institutes of Malaysia (RRIM), the Palm Oil Research Institutes of Malaysia (PORIM), and also on some of the local universities for their technology development. Most of the firms that conducted R&D were medium-scale to large-scale enterprises (Asian Development Bank 1990:44). The MITP survey also gave the same results, as shown in Table 7.12.

Table 7.12: Technology Characteristics by Firm Size and Ownership

<table>
<thead>
<tr>
<th>Ownership type and firm size</th>
<th>Per cent of Firms</th>
<th>Mean values</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do R&amp;D</td>
<td>Have technology licence(s)</td>
<td>Have QC &amp; testing Equipment</td>
</tr>
<tr>
<td>Domestic Firms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micro</td>
<td>4.9</td>
<td>1.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Small</td>
<td>9.2</td>
<td>2.8</td>
<td>17.1</td>
</tr>
<tr>
<td>Medium</td>
<td>23.9</td>
<td>5.6</td>
<td>38.4</td>
</tr>
<tr>
<td>Large</td>
<td>31.4</td>
<td>12.8</td>
<td>50.0</td>
</tr>
<tr>
<td>Joint-Ventures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>16.7</td>
<td>10.0</td>
<td>36.7</td>
</tr>
<tr>
<td>Medium</td>
<td>23.4</td>
<td>22.5</td>
<td>44.0</td>
</tr>
<tr>
<td>Large</td>
<td>38.8</td>
<td>33.8</td>
<td>60.4</td>
</tr>
<tr>
<td>100% Foreign</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>15.4</td>
<td>46.2</td>
<td>46.2</td>
</tr>
<tr>
<td>Medium</td>
<td>20.7</td>
<td>47.9</td>
<td>47.9</td>
</tr>
<tr>
<td>Large</td>
<td>26.9</td>
<td>67.5</td>
<td>67.5</td>
</tr>
</tbody>
</table>


With regard to new technology, Table 7.13 shows that out of 2,200 firms in the MITP sample, 922 firms (42 per cent) said that they had introduced new technologies, 1,214 firms (55 per cent) did not, and the rest (three per cent) did not respond or did not know. Of those introducing technology, the most common form was new production machinery
58 per cent), followed by computers such as CAM and CIM (25 per cent), and then line automation (18 per cent)\(^\text{24}\) (The World Bank, 1997b:77).

In summary, the above survey results indicate that Malaysia is still technologically underdeveloped. Its technological achievements have not matched its industrial development. Furthermore, Malaysia’s technological development ranks poorly when compared with other Asian NICs. The public-private sector collaboration approach promoted by the government does not seem to contribute significantly to technology development. Thus far, technology transfer seems to be the important source of technology for Malaysia’s industrial development.

Table 7.13: Introduction of New Technology Since 1992

<table>
<thead>
<tr>
<th>Firm Attributes</th>
<th>% of Firms</th>
<th>% Share Type of New Technology(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any New technology?</td>
<td>Computerisation</td>
</tr>
<tr>
<td>All firms</td>
<td>42.4</td>
<td>24.5</td>
</tr>
<tr>
<td>Firm size</td>
<td>Micro</td>
<td>13.4</td>
</tr>
<tr>
<td></td>
<td>Small</td>
<td>31.5</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>51.2</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>68.9</td>
</tr>
<tr>
<td>Ownership</td>
<td>Domestic Firms</td>
<td>35.5</td>
</tr>
<tr>
<td></td>
<td>Joint-Ventures</td>
<td>53.5</td>
</tr>
<tr>
<td></td>
<td>100% foreign</td>
<td>58.3</td>
</tr>
</tbody>
</table>

\(^1\) conditional on introducing new technology since 1992


Conclusions

The Malaysian Government has taken a clear policy stance towards encouraging the growth of science and technology through the five-year Development Plans, the Outline...
Perspective Plans, the Industrial Master Plan and the Action Plan for Industrial Technology Development. Implementation has included the adoption of the public-private sector collaboration approach to technology development, support for public sector research institutes, significant levels of funding for research through the IRPA and ITAF programs, the establishment of the Technology Parks and the Malaysian Technology Development Corporation, and the strengthening of a wide range of activities under the Ministry of Science, Technology and the Environment.

Studies by the World Bank and other researchers agree that Malaysia has a conducive environment for promoting technological development. However, most analysts agreed that despite active government intervention, technological progress in Malaysia, especially indigenous technology development, has been slow. Government supported R&D has increased the amount and quality of technological resources in the public sector. But, while government fiscal and financial incentives may have overcome the failure of markets to supply sufficient funding for technological development, they have not raised the level of technology in Malaysian firms.

Various reasons have been explored by analysts and in this chapter for Malaysia’s limited success in technology development. The most important factor appears to be the lack of skilled human resources in this area. Other factors appear to be important: First, the Government’s technology development policy has been based on the ‘research-push’ approach. One of the weaknesses with this approach is that nearly all of the supply-side measures revolve around creating public-sector institutional support through universities, specialised public-sector research institutes and state-owned private corporations. Funding is not provided to foster private-sector research institutes. Another weakness is that the government controls the development of the critical technologies of the future, such as microelectronics, biotechnology, information and communications, and advanced materials. This control is accomplished largely through the IRPA program.

Second, the Malaysian private sector does not have a tradition of industrial technology development, although there are some exceptions. There is extensive reliance by the private sector on foreign sources of technology. Domestic adaptations of imported technologies are not substantial either. This situation arises because the earlier import-substitution and export-led industrialisation policies were dependent on foreign direct
investment, and thus technologies and technical expertise were imported. Since it responds to market signals and its planning horizon is relatively short, the private sector has little incentive to undertake projects in industrial technology development whose returns may not be realised in the near term or may be highly uncertain.

Third, although Malaysia has made considerable progress in freeing up competitive forces in domestic industry, the main issue concerning technology development is the legal and tax benefits given to SMIs that constrain their open ‘graduation’ to larger size. SMIs have strong incentives to stay legally ‘small’ (below a capital of RM2.5 million) because they can lose revenue through tax once they are registered as they may be subjected to greater scrutiny and lose other privileges by becoming larger. This can create an artificial distortion in their technology development, since technology deepening is generally driven by the desire of firms to grow and, in turn, requires large size to sustain the costs and risks involved.

Fourth, the current financial system is unable to deal adequately with promoting technology development. The venture capital industry has made a healthy start. It is not clear, however, how much of the capital went into financing genuinely technology-based new ventures. In addition, the average size of venture capital investments in 1994 was only RM2.2 million, suggesting that the funders were unwilling to take major risks.

Fifth, the government-sponsored MTDC has supported a number of partnership arrangements between SMIs, local universities and research institutes. However, it seems that this does not meet the financing needs of the commercialisation of research results of technology-based private firms. The MIDF financing focuses more on supporting machinery and other related capital investment, rather than in commercialisation of research of SMIs. SMIs, therefore, remain disadvantaged in gaining access to capital for risky ventures even when promising innovations may be underway.

Sixth, tax incentives to encourage private sector R&D have been provided since 1984. These incentives seem to be necessary. However, their effectiveness is uncertain because (1) the incentives seem to be biased towards larger firms; (2) the narrow definition of the term R&D has not enabled smaller firms to benefit from minor technical improvements which could raise their productivity quite substantially; and (3) approval for tax benefits
is uncertain and firms are not sure whether they would qualify and, therefore, those with tighter budgets are reluctant to undertake R&D.

Seventh, although Malaysia’s intellectual property rights protection has been adequate, industrialists have expressed two concerns about the law on patents. One concern is that only innovators and individuals can apply for patents. Though employers can be owners of patents, they are afraid there might be legal disputes if the innovators moved to another firm. The other is that patent rights are not effective during the period of examination, even if they are granted later. Thus, competitors can sell goods using the technology of a patent that is being examined.

Eighth, creating linkages between domestic SMIs and large firms through the Vendor Development Program is expected to provide feedback from large firms that would induce innovative activity in the SMIs. Such linkages were also expected to result in more effective technology transfer from the large firms to their SMI suppliers. However, one problem with this policy is that the number of firms participating in such schemes is small; hence their impact on industrial technology development seems to be limited.

In conclusion, even though it is too early to know the impact of the strategy and policies introduced in the Seventh Malaysia Plan, it can be concluded that Malaysia’s earlier institutional and policy frameworks to promote technology development through the public-private sector collaboration approach seem to have had limited success. The Malaysian government actively promotes collaboration between the public and private sectors in the technology development process. In practice, however, the institutional framework to support this strategy seems to be biased towards the public sector. Even though there are some collaborative efforts between the sectors, they are limited to the lower end of the technology development spectrum and to non-technological activities. Meanwhile, policies that were implemented since 1986 to provide a conducive environment for the private sector for the conduct of its R&D activities do not seem to produce the desired outcome. The state of Malaysia’s technology is considered to be underdeveloped by many analysts. Despite the rhetoric, the public-private sector collaboration in Malaysia has had limited impact on its technology development efforts.
Chapter 8

The Perceptions of the Tenants of Technology Park Malaysia Regarding Public-Private Sector Collaboration

Introduction

The Malaysian economy was in recession when the first IMP was introduced in 1986. At the time, its investment policies were not very selective (Lim 1997:209). The IMP saw Malaysia's industrialisation evolving in two directions: resource-based industry and non-resource-based industry. The resource-based industries, particularly processed palm oil, sawn timber, rubber products and petroleum and liquefied natural gas industries, advanced rapidly. However, these industries did not involve much value-adding. The non-resource-based industries have been more successful in value-adding, aided by large inflows of foreign direct investment (FDI) (Lim 1997:191).

Despite not being selective in its investment policy, the Malaysian Government is increasingly aware of the link between S&T and industrialisation (Nambiar 1996:70). As explained in chapter seven, during the Fifth Malaysia Plan, 1985-90, the government enunciated its concern for developing S&T policy and the role it envisages for S&T in Malaysia's industrialisation. The government realised that for industry to remain internationally competitive, its industrial structure needed to move towards more technologically sophisticated and better quality products demanded by the markets of the developed economies. To achieve this, Malaysia not only needed to encourage more imported technology but also to develop its own indigenous technology (Yong 1990).

The Malaysian Government also saw technology development as a shared responsibility between the government, the private sector, the scientific community and society (Yong 1990). One of the strategies to facilitate this cooperation was the development of technology parks. The government considered the TPM an important initiative in promoting new technology ventures and nurturing young technology-based companies. A major objective of TPM was to assist the commercialisation of research and innovation generated by public and private research organisations (Limkokwing 1995:118).
The purpose of this chapter is to see whether TPM has the capability to promote technology development in Malaysia through the public-private sector collaboration strategy. The evaluation is based on the perceptions of the tenants of TPM with regard to the role of TPM in encouraging the Malaysian private sector to conduct greater R&D and technological development activities. As explained in chapter 5, the perception approach is chosen as an indicator of the capability of TPM in promoting technology development because perceptions determine how far two parties are willing to cooperate with each other to achieve desired goals. Willingness to cooperate may contribute towards the achievement of desired goals. If the perception of the tenants of TPM is favourable, then it can be assumed that they find TPM as being capable of supporting their R&D and technology development efforts. The opposite is true if perceptions are not favourable. Another indicator used in this chapter to measure the capability of TPM in promoting technology development is the level of innovation in Malaysian industry. This measure is used only as secondary support because data used for this purpose is based on the survey conducted by MASTIC. Although the survey covered the tenants of TPM, the results of the survey are highly aggregated and as such, it is not possible to draw direct conclusion with regard to the contribution of TPM to the level of innovation in Malaysian industry.

Technology Park Malaysia

One of the ways to promote technology development is by providing facilities to support scientific research. An important conduit for promoting this type of activity is the technology park or innovation centre. As discussed in chapter 2, a technology park is an industrial site which promotes collaborative efforts between universities or research institutes and private firms for the purpose of nurturing the growth of the latter through production improvements and R&D efforts. By providing such a linkage, a technology park encourages the formation and growth of S&T based industries and becomes the channel for the transfer of technology and skills from these institutions to the industries (Anuwar 1992:163).

Location

The Technology Park Malaysia was established in 1988. Initially, it was a unit in MOSTE but was corporatised in 1996. TPM is a property-based development and falls into the industry-based category (please refer to chapter 2 for the discussion on the
categorisation of technology parks). It provides the focus for a series of programs designed to promote, support and commercialise new product concepts (Asian Development Bank 1990). To get TPM going in 1988, MOSTE set up a technology incubation centre in a block of rented premises in Bandar Tun Razak in Cheras, Kuala Lumpur. This incubation centre had 16 ‘in-campus’ tenants. The majority of the tenants (54 per cent) were computer-technology-based companies. The other companies that have been located in this centre are in microelectronics and telecommunications and biotechnology (Technology Park Malaysia 1989).

The TPM is now located at its permanent site in Bukit Jalil, which is eight km from Kuala Lumpur City Centre, and in the leading industrial area Klang Valley. The Park can be accessed via the North-South Expressway, Puchong-Sungei Besi Highway, Shah Alam Expressway, North Klang Valley Expressway, Federal Highway and Highway to Kuala Lumpur International Airport (KLIA). Its location is also within close proximity to ports such as Westport and Port Klang, KLIA airport, Putrajaya, Cyberjaya and Airport City. It is also within easy reach from five universities, eight national research institutes and 10 industrial technical institutes, which is expected to provide a reliable source of technical personnel and opportunities for joint research and collaboration (Limkokwing 1995:118)

TPM houses activities in IT, electronics, biotechnology, and medical equipment. Spanning 800 acres, its first phase comprises 12 state-of-the-art buildings with specific functions. Phase 2 will include a Multimedia Centre: a cluster of intelligent buildings to service the physical needs of multimedia companies, enabling them to be service providers to the Multimedia Super Corridor (MSC), the rest of Malaysia and the world. The planned Phase 3 involves the leasing of R&D lots to individual companies to establish custom-designed head offices, research facilities, test sites and planned future expansions (Technology Park Malaysia 1998). Since TPM is located within the MSC, it gives a great advantage to companies who wish to locate there.

The objectives of TPM are (Technology Park Malaysia 1998; United Nations 1994:18):

- To facilitate private sector R & D and innovation
- To participate in the commercialisation of research results and innovation

1 The proposed Public Sector Administrative Centre.

233
- To facilitate public-private sector smart partnership in technology development
- To provide support in marketing, management and technical fields to tenant companies
- To create a conducive environment in order to stimulate a knowledge-based community
- To participate in wealth creation through technology

**Facilities in TPM**

The major features of TPM include (Asian Development Bank 1990:124, Technology Park Malaysia, 1998):

a) **A Resource Centre.** This is the nerve of centre for the day-to-day running of the Park. The Centre not only provides secretarial support services but also information regarding management, markets and available technologies. It also provide facilities such as Auditorium, Conference Room, Meeting Rooms, Exhibition Area, Business Centre, IT and Multimedia Centre, and Smart Learning Centre.

b) **Innovation and Incubator Centres.** These Centres provide space and facilities for small new or start-up technology-based companies. They are designed to facilitate the establishment of small firms by providing them with subsidised shop floor working space and central business service facilities including secretarial, fax, telex, and telephone facilities. The firms in the incubator Centre are expected to relocate to the Enterprise Units after two to four years. The flow chart of companies in TPM from Innovation and Incubator Centres to the Enterprise Unit and so on is illustrated in Figure 8.1. Companies may enter TPM at any one point if they fit the criteria for selection (Asian Development Bank, 1990:124).

c) **Enterprise Units.** These Units are large flexible building modules catering for the needs of companies which have outgrown the incubation phase in the Innovation or Incubator Centre;

d) **Industries Units.** These Units are for firms which have graduated from the above units and which require factory space of up to an acre for their manufacturing and R&D activities;

e) **An Institutional Area.** This area is reserved for new and relocated government R&D institutions such as MIMOS and the proposed Institute of Biotechnology.

f) **The MasterCentre.** This Centre is an advanced manufacturing automation technology facility. The Centre provides integrated services ranging from design to manufacturing, rental of engineering facilities and equipment and customised training to technical consultancy. Facilities include CAD/CAM Lab, Rapid Prototyping, Product Manufacturing, Robotics & FMS, Metrology/QC Lab and Storage. It is fully fitted with the latest state-of-the-art equipment. The Centre is available to all activities from budding inventors to large foreign multinationals.

g) **The IT Centres.** These Centres are designed to support and complement the Multimedia Super Corridor (MSC) and the IT industry in general. TPM IT CENTRE was established to provide information technology implementation based on innovation and services. There are various departments within TPM IT CENTRE which facilitate the integration of multiple technologies, namely TPMNet Services, System Development Services, Y2K centre and Learning Centre.
Venture Capital

Apart from facilities, TPM also provides financing assistance to its tenants. The Venture Capital Fund is allocated to tenant companies of TPM that have the potential for rapid growth with high returns on investment and especially companies that plan to secure public listing on the KLSE. Funding comprises three distinct categories with support funding for each crucial stage of the business. The first category is the Initial Start-up Fund. This early funding targets embryonic companies still in their first phase of operation or those that have developed an innovative product but require initial funds for commercial manufacturing or sales. The second category is the Expansion Fund. The financing at this stage takes the form of additional working capital, when more monetary input is crucial to the companies to broaden their business ventures and secure stable growth for continued progress. The third category is the Mezzanine Fund. TPM's investment at this stage is specifically for companies that expect to go for public listing within six months to one year from the time of funding. The limit of this funding is up to
a maximum of 30 per cent of the total shareholding of the companies. Among the benefits offered were (Technology Park Malaysia 1998):

- Minimal interference is the standard policy
- TPM is able to provide management, financing and marketing support
- Assistance on supplier relations and new business development
- International network linkages with friendly countries, including North America, Japan, South African nations and many others

**R&D Activities in TPM**

TPM leans heavily towards encouraging hi-tech companies that focus on technologies such as information technology and multimedia, biotechnology and biomedical technology, manufacturing processes and advanced materials (Technology Park Malaysia undated). The Park aim is to attract innovative technology firms in the following industries, but it is not restricted to these fields only (Asian Development Bank 1990:125):

<table>
<thead>
<tr>
<th>Industries</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber</td>
<td>Latex products</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>Oleochemicals</td>
</tr>
<tr>
<td>Food</td>
<td>Canning and food processing</td>
</tr>
<tr>
<td></td>
<td>Cocoa products</td>
</tr>
<tr>
<td>Wood</td>
<td>Chemicals from wood</td>
</tr>
<tr>
<td>Non-Ferrous</td>
<td>Chemical form Tin</td>
</tr>
<tr>
<td>Non-metallic</td>
<td>Advanced ceramics</td>
</tr>
<tr>
<td>Micro-electronics</td>
<td>Variety</td>
</tr>
<tr>
<td>BIOTECHNOLOGY</td>
<td>Variety</td>
</tr>
</tbody>
</table>

**Tenancy**

Currently, all facilities in Technology Park Malaysia are fully utilised. There are 89 companies in TPM (Technology Park Malaysia 1998), of which 75 per cent are IT-based (Mohamad Salleh 1997a:5; Technology Park Malaysia 1998). Another dominant sector in TPM is the electronics sector (United Nations 1994:18). According to Danaraj (1995:12) and World Bank/UNDP (1995:99), there are ready tenants for TPM because many Malaysian technology-based companies find this Park’s rental rates attractive. It is lower than the rental rates in commercial buildings. Hence, there are many firms on the waiting list. Another reason why many Malaysian technology-based companies are interested to locate in TPM is because they believe that TPM has built linkages with research institutions and universities (United Nations 1994:18).
The Technological Relevance of the Technology Park Malaysia: Tenants' Perceptions

The question of the relevancy of TPM to technology development in Malaysia is a tricky area. This is partly because of the lack of data on new technology-based firms in Malaysia. More importantly, the concept of ‘technological relevance’ itself is extremely slippery. The section provide the perceptions of the tenants of TPM with regard to:

1. The Malaysia Incorporated Concept
2. The achievements of TPM objectives
3. Facilities and Infrastructure in TPM

Research Methodology for Assessing the Perceptions of the Tenants of TPM regarding Public-Private Sector Collaboration in TPM.

The purpose of the survey is to find out how far TPM is capable of promoting public-private sector collaboration in technology development and how far TPM meets the needs of its tenants in its quest to facilitate private sector R&D and technology development activities, especially among the SMIs. The survey was conducted in August 1997 using a mailed questionnaire, which was sent to the Tenants of TPM. The questionnaire was developed using the information provided by TPM management, MASTIC and the Economic Planning Unit. It was divided into three parts. The first part comprised 8 statements regarding the objectives of TPM. The second part comprised 20 statements regarding the infrastructure and facilities in TPM; and the last part comprised 8 statements regarding the Malaysia Incorporated Concept (refer to appendix 4). The tenants were requested to state their opinion regarding the statements in part one and three using the scale of 1 to 5. A score of 1 represents strongly disagree, 2 represents disagree, 3 represents neutral, 4 represents agree, and 5 represents strongly agree. In part two of the questionnaire, the tenants were asked to rate the facilities provided by TPM using the scale of 1 to 5. The score 1 represents inferior, 2 represents quite good, 3 represents good, 4 represents very good and 5 represents excellent.

Responses from the Tenants

Questionnaires were sent to all 50 tenants in TPM on 1 August 1997. The tenants were expected to complete the questionnaire and to return it to the author by 24 August 1997. Only 15 or 30 per cent of the tenants responded to the questionnaire.
Data Analysis and Presentations

As in the case of an earlier study, the perceptions of the tenants regarding TPM’s capability to promote public-private sector collaboration is analysed using the framework shown in Figure 8.2. The analysis is divided into three parts. The first part discusses the perceptions of the tenants with regard to the Malaysia Incorporated Concept and its Role in Promoting R&D and technology development. The second part covers the perceptions of the tenants with regard to the objectives of the Technology Park Malaysia and its impact on R&D and technology development. The third part relates to perceptions about the objectives of the Technology Park Malaysia and its impact on R&D and technology development. To facilitate the analysis, data is presented according to the percentage of respondents who stated their agreement, disagreement or neutrality to the statements provided in the questionnaire.

Figure 8.2: Framework for Assessing the Perceptions of the Tenants of TPM with regard to the Technology Park Malaysia

Tenants Perception on:

- Malaysia Incorporated Concept
- The Objectives of Technology Park Malaysia
- Facilities and Services in Technology Park Malaysia


The Malaysia Incorporated Concept and its Role in Promoting R&D and Technology Development

The purpose of this section is to examine whether the tenants in TPM have heard about the Malaysia Incorporated Concept and if they supported the role of the Malaysia Incorporated Concept in promoting R&D and technology development in Malaysia. 73.3 per cent of respondents in TPM indicated that they have heard about the Malaysia
Incorporated Concept. Nonetheless, there are 20 per cent TPM respondents that indicated they have not heard of the Malaysia Incorporated Concept and 6.7 per cent who returned with a maybe response. These responses indicate that even though the Malaysia Incorporated Concept can be considered to be well-known policy among the tenants of TPM, knowledge is not comprehensive, despite the more that 15 years since the Concept was introduced.

The following eight statements were put to the tenants to gauge their perceptions regarding the Malaysia Incorporated Concept and its role in promoting R&D:

1. The Malaysia Incorporated Concept is crucial in promoting the private sector as the engine of growth.
2. Public-private sector collaboration is necessary to achieve national goals.
3. The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
4. TPM fulfils the spirit of the Malaysia Incorporated Concept in promoting public-private sector collaboration in R&D and technology development.
5. TPM provides the opportunity for my company to carry out R&D activities.
6. Without TPM my company may not be able to carry out R&D activities as effectively as it does now.
7. The private sector should take the lead role in R&D and technology development while the Government should only provide an enabling environment.
8. Both the government and the private sector should collaborate in promoting R&D activities and technology development.

As shown in Figure 8.3, 80 per cent of the respondents from TPM agreed that the Malaysia Incorporated Concept is useful in promoting the private sector as the engine of growth. At the same time more than 90 per cent of the respondents agreed that public-private sector collaboration is necessary to achieve national goals. On the third statement that the Malaysia Incorporated Concept is needed to foster public-private sector collaboration, more than 85 per cent of the respondents indicated their agreement. These responses support the response from the private sector respondents in chapter 6 whereby both TPM and the private sector respondents supported the notion that public-private sector collaboration is necessary if Malaysia is to achieve its national goals.

However, as shown in Figure 8.3, the responses from TPM respondents to statements 4, 5 and 6 are mixed. In answer to statement 4, only 53.3 per cent of TPM respondents
agreed that TPM fulfils the spirit of the Malaysia Incorporated Concept in promoting public-private sector collaboration in R&D and technology development. The responses to statement 5 also indicate some level of uncertainty among TPM respondents. As shown in Figure 8.3, 60 per cent of the respondents agreed with this statement, while the remaining either disagreed or took a neutral position. As for the statement 6, 46.7 per cent of the respondents indicated their disagreement while 26.7 per cent took a neutral position. Based on these responses, it seems that while the respondents agreed that TPM provided them with the opportunity to carry out R&D activities, they rule out the assumption that it is only through TPM that they have the opportunity to conduct R&D activities.

As for statement 7, the response from TPM respondents suggests that they support the idea that the private sector should assume a leading role in technology development while the public sector should assume a facilitating role. As shown in Figure 8.3, 60 per cent of TPM respondents supported this statement while 33 per cent took a neutral position. This respondents' neutral position does not necessarily mean that they are not in favour of the private sector taking the lead role in technology development. Instead, the response may suggest that, while the private sector should be taking a lead role, the public sector should also assume a crucial role in technology development. However, based on their response, the tenants seem to be in favour of the public sector assuming a facilitating role by providing enabling environments to support private sector initiatives.

The finding for statement 7 is supported by the response of TPM respondents to statement 8. As shown in Figure 8.3, 100 per cent of the respondents supported the idea that both the government and the private sector should collaborate in promoting R&D activities and technology development.

In summary, this section has shown that the Malaysia Incorporated Concept is quite well known to TPM respondents. Even though the respondents were unsure as to whether TPM fulfilled the spirit of the Malaysia Incorporated Concept, they support the idea that the Malaysia Incorporated Concept has a role in promoting technology development in Malaysia. This section also shows that TPM respondents are in favour of the private sector assuming a leading role in technology development. Nevertheless, respondents did
not rule out the importance of the public sector role. However, they prefer the public sector to assume a facilitating role such as providing enabling environments for the private sector to conduct their R&D and technology development activities. Finally, this section has shown that the tenants of TPM are of the opinion that TPM has the potential to promote private sector R&D activities and technology development efforts. However, their responses indicate that, thus far, both the Concept and TPM has has limited success.

Figure 8.3: The Malaysia Incorporated Concept and its Role in Promoting R&D and Technology Development

The Objectives of the Technology Park Malaysia and its impact on R&D and Technology Development

An objective is the end result of what an organisation wants to achieve. The objective of an organisation will determine how it is organised, how its function is performed, and who will be the target groups or beneficiaries. This section attempts to discern the perceptions of the tenants of TPM with regard to how far TPM has fulfilled its
objectives. TPM respondents were asked to indicate their views on the following statements:

1. TPM is successful in facilitating the private sector's research and development.
2. TPM is successful in commercialising research and innovations from the private sector, universities and research institutions.
3. TPM is successful in promoting the growth and development of high-tech industries.
4. TPM provides vital links between industry, government agencies, research institutions and universities.
5. TPM facilitate government and private sector collaboration.
6. TPM provides facilities for local industries, which are involved in manufacturing and innovations.
7. TPM provides state-of-the-art information in marketing, management and technical support.
8. TPM assists tenants in marketing aspects.

As shown in Figure 8.4, the responses of TPM respondents to all the statements in this part are mixed. None of the responses were above 55 per cent. For statement 1, only 46.6 per cent of the respondents supported the statement that TPM is successful in facilitating private sector R&D, 46.6 per cent were neutral and 6.7 per cent disagreed. Since the number of respondents that took a neutral position equals the number that supported this statement, it is not possible to come to a conclusive judgement on this issue. The neutral position could mean that the respondents were either uncertain or do no support the idea that TPM has the capability to promote private sector R&D activities. Nevertheless, since the number of respondents who rejected this statement were marginal, then perhaps it can be assumed that the respondents do not reject the possibility that TPM is capable of promoting private sector R&D.

As for the second statement, 53.3 per cent of the respondents were neutral in their opinion regarding the success of TPM in commercialising research and innovations from the private sector, universities and research institutions. The numbers of respondents who supported and rejected the statement are almost even at around 20 per cent. This survey result indicates that the respondents are somewhat sceptical about TPM's ability to commercialise research and innovations from the tenants.
The responses to statement 3 also indicate uncertainty among the respondents with regard to TPM capability in promoting the growth and development of high-tech industries. As shown in Figure 8.4, only 53.3 per cent of TPM respondents agreed that TPM has fulfilled this objective while 46.7 per cent indicated a neutral response. However, none of the respondents rejected the statement. Again, this pattern of responses indicates that while the tenants supported the idea that TPM has the potential to promote the growth and development of high-tech industries, in reality, they were sceptical as to whether TPM has, thus far, fulfilled this objective. Based on the findings in chapter 7, it seems that this scepticism is quite reasonable because after 10 years, TPM does not seem to have had a significant impact on technology development in Malaysia, especially in high-tech industry in which the TPM is designed for.

Figure 8.4: The Objectives of Technology Park Malaysia and its Impact on R&D and Technology Development

<table>
<thead>
<tr>
<th>Objective</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>6.7</td>
<td>46.7</td>
<td>46.6</td>
</tr>
<tr>
<td>2.</td>
<td>20.0</td>
<td>46.7</td>
<td>26.7</td>
</tr>
<tr>
<td>3.</td>
<td>0.0</td>
<td>33.3</td>
<td>53.3</td>
</tr>
<tr>
<td>4.</td>
<td>20.0</td>
<td>46.7</td>
<td>33.3</td>
</tr>
<tr>
<td>5.</td>
<td>6.7</td>
<td>46.7</td>
<td>46.7</td>
</tr>
<tr>
<td>6.</td>
<td>46.7</td>
<td>40.0</td>
<td>13.3</td>
</tr>
<tr>
<td>7.</td>
<td>46.6</td>
<td>26.7</td>
<td>26.7</td>
</tr>
<tr>
<td>8.</td>
<td>53.3</td>
<td>47.7</td>
<td></td>
</tr>
</tbody>
</table>

Note: 1: TPM is successful in facilitating the private sector's research and development. 2: TPM is successful in commercialising research and innovations from the private sector, universities and research institutions. 3: TPM is successful in promoting the growth and development of high-tech industries. 4: TPM provide vital links between industry, government agencies, research institutions and universities. 5: TPM facilitate government and private sector collaboration. 6: TPM provide facilities for local industries, which are involved in manufacturing and innovations. 7: TPM provide state-of-the-art information in marketing, management and technical support. 8: TPM assist tenants in marketing aspects.

As to TPM's ability to provide vital linkages between industry, government agencies, research institutes and universities, the responses from TPM respondents show that 46.7
per cent of the respondents agreed with the statement, 33.3 per cent were neutral and 20 per cent rejected it. As in the case of the responses in the earlier statement, here again the responses indicate that support for the idea that the TPM has the capability to provide the vital link between the sectors but, thus far, has had limited success. These views were also reflected in the response of the TPM respondents to the next statement wherein only 46.7 per cent of the respondents agreed that the TPM facilitates collaboration. Again, these responses are in line, with the findings in chapter 7 where, despite the Malaysian government’s policy to forge linkages between the public and private sector research institutions, the achievements have been limited. It is suspected that TPM is facing the same problems in its efforts to promote these linkages.

On issues related to the services provided by TPM to its tenants, the survey results also show mixed responses leaning toward disagreement. The survey results for statement 6, shows that only 47.7 per cent agreed that TPM provides facilities for local industries which are involved in manufacturing and innovation. Of the remaining respondents, 46.7 per cent took a neutral position while 6.7 per cent rejected it. The respondents are also sceptical about TPM’s role in providing state-of-the-art information in marketing, management and technical support. As shown in Figure 8.4, 46.7 per cent of the respondents made clear their disagreement with this statement while another 40 per cent took a neutral position. This result suggests that currently TPM information services have not been able to service the requirements of its tenants. The same is also true for TPM’s ability to assist its tenants in marketing aspects where only 46.7 per cent of TPM respondents indicated that they disagreed with this statement while 26.7 per cent were neutral and only 26.7 per cent supported the statement.

In summary, this section has shown that while the tenants of TPM supported the idea that TPM has the capability to promote technology development through public-private sector collaboration, they are sceptical about TPM’s achievements. The mixed responses suggest that the respondents are of the opinion that, thus far, TPM has had limited success in contributing to technology development in Malaysia. This result is not surprising because, as indicated in chapter 7, even in developed countries not all technology/science parks have been successful in promoting technology development. Besides, 10 years may not be long enough for TPM to produce a breakthrough in technology that impacts significantly on Malaysia’s technology development efforts.
Facilities and Services in Technology Park Malaysia

TPM has assisted companies in product development and product launching activities by providing support services in design, prototype fabrication, small batch manufacturing and product inspection on a fee-for-services basis. The types of support services provided by TPM are CAD/CAM Lab, Rapid Prototyping, Precision Machining, QC Lab, Production Workshop, Warehouse, Solid Ground Curing Process, Technical Consultancy, Customised Training, Design, Prototyping and Manufacturing, Skilled Human resources, Security and Safety, Infrastructure Utility Services, Environmental Regulations, Training Facilities, Multimedia Facilities, Consultancy Services, and IT R&D Facilitator (Technology Park Malaysia, 1998). The purpose of this section is to find out how far these facilities have fulfilled the needs of the tenants in TPM. In the questionnaire the tenants were asked to rate the support facilities and services provided by TPM.

The Support Facilities

All respondents provide an answer to the statement on the rental rate, but there were only a few responses to the rest of the statements in this part of the questionnaire. Two common answers as to why they could not respond to the other statements were: (1) 'not used the services yet' and (2) 'not relevant to us, as we do not require any of those support/services'. These responses suggest that despite the more than 50 tenants located in TPM during the survey, only a few were actually using the support facilities. The reasons for not utilising these services are as indicated. Many of the facilities provided by TPM are either not yet required by its tenants or not suitable given the nature of the R&D activities carried out.

As regards the TPM rental rate, 80 per cent of the TPM respondents indicated that the rental rate charge by TPM is reasonable. This responses supports Danaraj’s finding (1995a) that there were ready tenants for TPM because the rental rates were lower than in commercial buildings2. Based on this, it can be assumed that the low rental rate has been a major reason why TPM has been successful in attracting local technology-based companies.

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2 Please refer to chapter 7.
As for the other support services, the more than 80 per cent of the respondents that responded rated the production workshop as very good (see Figure 8.5). 50 per cent of the respondents rated the CAD/CAM Lab, Rapid Prototyping, Precision Machining and Warehouse facilities as 'very good'. 50 per cent of the respondents rated the QC lab as 'quite good' and the Solid Ground Curing Process as 'good'. The rating for Design, Prototyping and Manufacturing facilities are even, where 25 per cent of the respondents rated these facilities as 'inferior', 25 per cent 'quite good', 25 per cent 'good' and 25 per cent 'very good'. None of the respondents rated the facilities as 'excellent'.

Figure 8.5: Support Facilities provided by TPM

As stated earlier, the response rate for this section of the questionnaire was low. Therefore the results should be treated with caution. Despite the responses, and given the number of local technology-based companies that are located in TPM, it cannot be assumed that the facilities in TPM are not up to the standard. The United Nations study (1994:22) suggested that the facilities provided by TPM appeared to have a positive impact on the local technology-based companies. Be that as it may, TPM is not yet able to attract foreign multinationals to locate in TPM. As of 1997, one TNC has become the first vendor in TPM (Sharifah 1997:5; Mohamad Salleh 1997b). Nevertheless, the United Nations study (1994) suggested that there is a need for TPM to review its support
facilities, to ensure that not only the local technology-based companies are provided with state-of-the-art facilities but also to attract TNCs to locate in TPM.

The Support Services

As shown in Figure 8.6, more than 60 per cent of those who responded to this part of the questionnaire indicated that the security and safety provided by TPM is ‘good’. 50 per cent indicated that the skilled human resources provided by TPM are ‘quite good’ and multimedia facilities and IT R&D facilitator are ‘good’. As for the other support services, the responses are mixed. 28.6 per cent of the respondents considered Environmental Regulation as ‘very good’ and ‘excellent’. 25 per cent considered infrastructure facilities as ‘quite good’, ‘good’, ‘very good’ and ‘excellent’. Meanwhile, 37.5 per cent of the respondents considered the consultancy services provided by TPM as inferior and 25 per cent considered them as ‘quite good’ and ‘good’. Again, these results should be treated with caution. Nevertheless, they indicate that the support services provided by TPM are good but need to be improved further to ensure that TPM is attractive not only to local technology-based companies but also to foreign multinationals.

Figure 8.6: Support Services provided by TPM

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior</td>
<td>16.7</td>
<td>25</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>14.3</td>
<td>14.3</td>
<td>12.5</td>
<td>37.5</td>
<td>25</td>
</tr>
<tr>
<td>Quite Good</td>
<td>50</td>
<td>25</td>
<td>25</td>
<td>12.5</td>
<td>25</td>
<td>14.3</td>
<td>14.3</td>
<td>0</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Good</td>
<td>16.7</td>
<td>25</td>
<td>25</td>
<td>62.5</td>
<td>25</td>
<td>14.3</td>
<td>42.9</td>
<td>50</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Very Good</td>
<td>16.7</td>
<td>0</td>
<td>25</td>
<td>12.5</td>
<td>25</td>
<td>28.6</td>
<td>14.3</td>
<td>37.5</td>
<td>12.5</td>
<td>25</td>
</tr>
<tr>
<td>Excellence</td>
<td>0</td>
<td>25</td>
<td>0</td>
<td>12.5</td>
<td>25</td>
<td>28.6</td>
<td>14.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: 1= Skilled Human resources, 2= Technical Consultancy, 3= Customised Training, 4= Security and Safety, 5= Infrastructure Utility Services, 6= Environmental Regulation, 7= Training Facilities, 8= Multimedia Facilities, 9= Consultancy Services, 10= IT R&D facilitator
Innovation in Malaysian Industry

To support the findings of this study that, thus far, TPM has had limited success in promoting technology development in Malaysia, this section presents the results of The National Survey of Innovation in Industry conducted by MASTIC in 1994. This survey provides information regarding innovation in Malaysian industry. The survey target companies were (MASTIC 1996b:29):

a) companies which performed R&D in 1992 and companies with potential for starting R&D in 1994;

b) Standards and Industrial Research Institutes of Malaysia (SIRIM): companies which are granted ISO 9000 certification;

c) Ministry of International Trade and Industry (MITI): companies which claimed R&D incentives in 1994; and

d) Technology Park Malaysia: tenants of TPM.

From the MASTIC (1996b:4-5) survey, 65.5 per cent of respondents indicated that they carried out some form of technological innovation. The survey found that 89 per cent of companies in the manufacturing sector had technological activity in 1994. In terms of location, most innovative companies are located in Selangor and Kuala Lumpur, with Selangor having the higher proportion, as shown in Table 8.1.

As shown in Table 8.2, of the 65.5 per cent which were innovators, 58.1 per cent were high-level innovators, 40 per cent were medium-level innovators and 1.9 per cent were low-level innovators. Of the high-level innovators, 10.7 per cent were located in Kuala Lumpur. Given that the majority of companies that were conducting high-level innovation activities were located in Selangor, Kuala Lumpur and Pulau Pinang, it is most likely that the majority of these companies were MNCs.

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3 815 companies were identified as possible innovators and the overall response rate was 50.6 per cent.

4 The survey considered companies to be technological innovators if, over the previous 5 years of 1990 to 1994, the companies (a) carried out R&D themselves; (b) developed or introduced new or substantially improved products; (c) developed or introduced new or substantially improved processes; (d) acquired new technology; (e) sold or transferred technology outside the company; or (f) if in 1994 they applied for any patent (MASTIC 1996b:4).
### Table 8.1: Innovation Status by Geographical Location

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Companies</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selangor</td>
<td>133</td>
<td>32.3</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>64</td>
<td>15.5</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>63</td>
<td>15.3</td>
</tr>
<tr>
<td>Johor</td>
<td>50</td>
<td>12.1</td>
</tr>
<tr>
<td>Perak</td>
<td>34</td>
<td>8.3</td>
</tr>
<tr>
<td>Kedah</td>
<td>19</td>
<td>4.6</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>15</td>
<td>3.6</td>
</tr>
<tr>
<td>Melaka</td>
<td>15</td>
<td>3.6</td>
</tr>
<tr>
<td>Sarawak</td>
<td>7</td>
<td>1.7</td>
</tr>
<tr>
<td>Pahang</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td>Trengganu</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Sabah</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Perlis</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Kelantan</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Not Stated</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>412</td>
<td>100.0</td>
</tr>
</tbody>
</table>


### Table 8.2: Levels of Innovation by Geographical Location

<table>
<thead>
<tr>
<th>Location</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of innovators</td>
<td>% of innovators</td>
<td>% of innovators</td>
</tr>
<tr>
<td>Selangor</td>
<td>0.7</td>
<td>16.7</td>
<td>18.9</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>0.0</td>
<td>2.6</td>
<td>10.7</td>
</tr>
<tr>
<td>Pulau Pinang</td>
<td>0.0</td>
<td>4.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Johor</td>
<td>0.4</td>
<td>4.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Perak</td>
<td>0.0</td>
<td>3.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Kedah</td>
<td>0.0</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Negeri Sembilan</td>
<td>0.4</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>Melaka</td>
<td>0.0</td>
<td>1.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Sarawak</td>
<td>0.4</td>
<td>0.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Pahang</td>
<td>0.0</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Trengganu</td>
<td>0.0</td>
<td>0.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Sabah</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Perlis</td>
<td>0.0</td>
<td>0.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Kelantan</td>
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<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Not Stated</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.9</td>
<td>40.0</td>
<td>58.1</td>
</tr>
</tbody>
</table>

**Note:** Low = Company acquired (purchased) new technology only, no internal development of the technology. Medium = Company developed or introduced new or improved products and/or processes High = Company carried out its own R&D and/or; applied for patents; and/or sold or transferred technologies out of the business.

In summary, the MASTIC survey found that the majority of innovation activities is conducted by companies located in Selangor, Kuala Lumpur and Penang. Since TPM is situated in Kuala Lumpur and the tenants were included in the survey, it can be assumed that there is a possibility that TPM has had some contribution to the level of innovation in Malaysian industries. However, since information is highly aggregated, it is not possible to determine the extent of TPM's contributions. The MASTIC survey did, however, indicate that it is most likely that the high-level innovation activities are conducted by MNCs. The possibility that the tenants of TPM contributed to this higher-end innovation is quite small. Their contributions are most likely in medium- and lower-level innovation.

Findings and Conclusions

On the whole, the survey results seem to suggest that the tenants of TPM see its establishment as useful in providing them with the opportunity to conduct their R&D activities. This assumption is based on the number of tenants located in TPM during the survey in August 1997 and the number of those in the waiting list. However, upon detailed evaluation of the responses given during the survey, it was found that the major consideration that influenced the local technology-based companies decision to locate in TPM is its low rental rate. This finding is consistent with the findings of studies conducted by the United Nations (1994) and World Bank/UNDP (1995).

According to Blakely (as cited in Juddery 1987b:71) what is essential to technology development is the development of a 'strategic network' between players. 'Face to face contacts between key participants in the technology development process is fundamental'. One of the objectives of establishing TPM is to facilitate the links between the government, industry and universities and to encourage their cooperation in R&D activities. The survey found that although the tenants of TPM supported the idea that TPM has the potential to promote public-private sector collaboration in technology development, they had mixed perceptions with regard to whether TPM has achieved this objective. Such mixed perceptions made it impossible to conclude that TPM has failed to promote the linkages between the public and private sectors. Nevertheless, they

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50 local technology-based companies were located in TPM at the time of the survey (Technology Park Malaysia, undated). As of 11 November 1998, 89 local technology-based companies are located in TPM (Technology Park Malaysia 1998. '<http://www.tpm.com.my>', 11 November 1998.
suggested that, thus far, TPM has had limited success. Though the survey did not provide possible explanations for these responses, it may be that the limited success could be due not only to weaknesses in TPM but also to other factors such as limited resources to complement the facilities provided by TPM.

One possible explanation could be the limited number of skilled R&D human resources in TPM. This reasoning is based on the finding in chapter 7 where lack of R&D human resources has been identified as one of the reasons why Malaysia has had limited success in promoting linkages between the public and private sectors in technology development. As shown in Table 8.3, analysis of the output of graduates from local tertiary institutions for the period 1985-95 revealed that the arts graduates continue to dominate science and technical graduates. The current number of full and part time researchers and scientists is estimated to be around 8,300. This gives a ratio of 400 per one million population; which is low compared with ratios ranging from 1,000 to 1,500 per one million population found in some NIEs when they were at Malaysia's current level of economic development (Government of Malaysia 1996b:429). Due to the limited skilled R&D human resources, it is not easy for TPM to promote the linkages that are necessary to promote technology development in Malaysia.

Table 8.3: Output of Degree Courses¹, 1986-1995

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<thead>
<tr>
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<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Arts &amp; Humanities including Economics, Business &amp; Law</td>
<td>27,780</td>
<td>53</td>
</tr>
<tr>
<td>Science including Medicine, agricultural Science, Pure Sciences &amp; Others</td>
<td>17,510</td>
<td>33</td>
</tr>
<tr>
<td>Technical, Engineering, Architectures, Surveying &amp; Others</td>
<td>7,550</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>52,840</td>
<td>100</td>
</tr>
</tbody>
</table>

Note: ¹Output for First Degree, Masters, Ph.D and post-degree diploma


On the achievement of other objectives of TPM, the responses from the tenants were also mixed. This again suggests that TPM has had limited success in fulfilling its
objectives. For example, TPM was supposed to provide state-of-the-art information on marketing, management and technical support and to assist tenants in marketing. This finding supports the findings of a survey by MASTIC on innovation in Malaysia in 1994. As shown in Table 8.4, the respondents in this survey ranked lack of information on technology as second most important factor that hindering innovation activities.

Table 8.4: **Ranking of Factors Hindering innovation in Malaysia**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Factors Hindering Innovation</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Lack of Skilled Personnel</td>
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<tr>
<td>2</td>
<td>Lack of Information on Technology</td>
</tr>
<tr>
<td>3</td>
<td>Deficiencies in the availability of external technical services</td>
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<tr>
<td>4</td>
<td>Innovation costs hard to control</td>
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<tr>
<td>4</td>
<td>Financial Risk</td>
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<tr>
<td>4</td>
<td>Pay-off period of innovation too long</td>
</tr>
<tr>
<td>4</td>
<td>Lack of Technological opportunities</td>
</tr>
<tr>
<td>4</td>
<td>Lack of customer responsiveness to new products or processes</td>
</tr>
<tr>
<td>5</td>
<td>Lack of opportunities for cooperation with other companies or S&amp;T organisation</td>
</tr>
<tr>
<td>5</td>
<td>Uncertainty in timing of innovation</td>
</tr>
<tr>
<td>6</td>
<td>Standards</td>
</tr>
<tr>
<td>7</td>
<td>Lack of appropriate sources of finance</td>
</tr>
<tr>
<td>7</td>
<td>Innovation too easy to copy</td>
</tr>
<tr>
<td>8</td>
<td>Resistance to change in business</td>
</tr>
<tr>
<td>8</td>
<td>Legislation and regulation</td>
</tr>
<tr>
<td>8</td>
<td>Taxation</td>
</tr>
<tr>
<td>9</td>
<td>No need to innovate due to earlier innovation</td>
</tr>
<tr>
<td>10</td>
<td>Patents hard to get</td>
</tr>
</tbody>
</table>


As regard support facilities and services, although the findings from the survey should be treated with caution, they nevertheless indicated that the facilities provided by TPM need improvement. Improvement is important if TPM is to attract foreign multinationals to facilitate cooperation and technology transfer with local technology-based companies. The United Nations (1994:22) study on technology transfer in Asian Technology Parks found that the support facilities in these parks are not good enough to attract TNCs. One of the reasons is that the academic strength of the host country has not been able to meet the need of R&D for certain core technologies of TNCs. The study also listed the

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*The first national survey of its kind.*
shortage of R&D human resources and inadequacy of technology park management as the main problems faced by Malaysian and other Asian technology parks in attracting TNCs (United Nations 1994:22).

In conclusion, experience in other countries (refer to Appendix 5 for brief discussion on this subject) has shown that there are essential ingredients for the successful implementation of the technology park paradigm. One of the important ingredients is collaboration between government, industry and universities in the technology development process as proven by the success of the Silicon Valley Technology Park and Boston Route 128 Technology Park. For Malaysia, however, this study has shown that even though TPM has had limited success in promoting effective collaboration between the public and private sectors in TPM, it still able to attract local technology-based companies to locate their research activities in TPM. This suggests that despite the rhetoric, public-private sector collaboration has not been important in the tenants' decision to locate their R&D activities in the TPM. A factor such as the rental rate seems to be more important than public-private sector collaboration.
Chapter 9
Conclusions, Implications and Prospects for Development Strategies

Introduction

The main objective of the thesis is to ascertain whether public-private sector collaboration can be an impelling force in the development process. The examination of this is divided into two parts. In the first part, the thesis discussed the theory and practice regarding the role of the state and market in the development process. The USA and Japan were chosen for study in this part because rhetorically, these countries are held to represent the extremes in the debate on the subject.

In the second part, the thesis examines Malaysia’s public-private sector collaboration strategy to see whether it has the support of Malaysia’s public and private sectors and how far the strategy has contributed to Malaysia’s technology development. Malaysia is chosen as a case study because, since 1983, public-private sector collaboration has been the strategy adopted by the Malaysian government to achieve its development aspirations.

Organisation of the study

The study, the thesis was guided by several research questions that were set out in Chapter 1 and examined in subsequent chapters. Chapter 2 presents the debates over the appropriate role of the state and market in the development process. Chapter 2 presents a summary of issues related to the management of technology development and technology parks. Chapter 3 traced the role of the state and market in the USA and Japan. These chapters provide general findings regarding the role of state and market in the development process and set the general framework for the evaluation of the role of public-private sector collaboration in the development process.

Having provided the general framework, Chapter 4 provides the background to the introduction of the public-private sector collaboration strategy in Malaysia. The purpose is to set the framework for the discussion of the perceptions of the Malaysian public and private sectors regarding the role of public-private sector collaboration in the development process. Chapter 5 presents the research methodology adopted in the study.
to obtain data for the evaluation of how far the Malaysian public and private sectors supported this development strategy. For this purpose, the manufacturing sector (the Food, Chemical and Electrical and Electronic industries) were chosen to represent the private sector in the survey because of its substantial contribution to the Malaysian economy. Officers in categories M2 and M3 from the Ministry of Domestic Trade and Consumer Affairs, Ministry of International Trade and Industry and Ministry of Public Work were chosen to represent the public sector. These ministries were chosen because of their extensive dealings with the private sector. The survey results and findings are presented in Chapter 6.

Chapter 7 presents the strategies and policies implemented by the government to promote technology development in Malaysia. The focus of this chapter is the public-private sector collaboration strategy and its impact on Malaysia's technology development. The reason why technology development programs were chosen as a case study is because public-private sector collaboration has been a crucial approach to Malaysia's technology development program. Beside, this approach has been the practice in industrialised countries such as the USA and Japan (refer to Chapter 2) and has contributed to their technological advancements. In addition, technology is a crucial element in the development process because its level of achievement will assume an important role in determining the level of development of a country.

In chapter 8, the role of the Technology Park Malaysia (TPM) in promoting technology development, especially indigenous technology is evaluated based on the results and findings of the survey conducted among the tenants of the TPM. TPM is chosen as a case study because it is a manifestation of the public-private sector collaboration approach.

Summary of Research Findings and Conclusions

According to the central deductions of economic theory, under certain conditions, markets allocate resources efficiently. However, the conditions for market efficiency are demanding\(^1\) and market failure is common. When market fail, there may be a case for

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\(^1\) The theory requires 'perfect competition': there must be many buyers and sellers; goods from competing suppliers must be indistinguishable; buyers and sellers must be fully informed; and markets must be complete (The Economist 1996b:66).

These questions are at the heart of the on-going debate regarding the role of state and market in the development process. Among economists, classical and neoclassical economists have rejected state intervention in the economy (aside from establishment of property rights enforcement of contracts and necessary regulation) while Keynesian and developmental economists have generally supported this notion. The idea that the state should assume a wider role in the economy also has strong support from political scientists. This latter view is also popular in public fora. Debate about the role of state and market has been paramount in attempts to explain the rapid economic growth of the East Asian economies.

The contention with the debates is that they are very much influenced by prevailing circumstances. The most recent example is the financial crisis in the Southeast Asian economies and South Korea since mid 1997. Proponents of a market economy attribute the crisis to the state's failure to properly undertake financial regulation while the proponents of the state attribute it to market power of financial entities. Another issue with most debates is that views were based mostly upon the assumed ability of government to remedy some weakness of the market, or the capacity of market forces to highlight some weakness of government. However, the experiences of the East Asian Economies suggested that, in addition to the current approach, it would be worthwhile to examine the possibility a collaboration approach between the state and market in fostering development. This is because, as pointed out by Roth (1987), the possibility of government failure as well as market failure should be considered. Hence, the real issue is not how to choose between the state and the market, rather how to strike the best balance between them and how to manage the problems that this balance creates (Kettl 1993:38; Lane 1985:46). In fact, Wolf (1988:xiii) argued that the choice is between imperfect markets and imperfect governments, as well as imperfect combinations between them.

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2 For example, refer to Brittan (1983) and Boyer (1996) for their discussion on this subject.
While, the theoretical debates continue to be divided, the practice indicates the reverse. Chapter 3 examined the role of state and market in the USA and Japanese development process and found that there is some form of cooperation between the state and market in both countries. While most analysts (Chapter 3) acknowledge the state-market cooperation in the Japanese economy, the same is not true for the USA. Most analysts suggest that the USA is an example of a market-led economy. However, Chapter 3 has shown that despite the rhetoric, the state and market in the USA do cooperate, especially in technology development and defense industries. In addition, the USA government has applied extensive public-private partnership in the provision of goods and services.

Despite this, the examination shows that both Japan and the USA are committed to the market system. The significant difference between them is how they perceive and address market failures. In the USA, the market assumes a much wider role than the state. The state intervenes only when markets fail to produce a desired outcome. The USA’s approach can be described as reactive, ad hoc, and focused on market failures without reference to industry-specific goals. It suggests a preference for leaving the market alone unless there is tangible evidence of a breakdown. As for Japan, it resorted to the state-led approach at the very onset of its development process because the process took place amidst major disadvantages such as lack of a private sector and the technology for development, and competition from other countries such as the USA and Britain. Japan’s can be described as a proactive approach, which suggests that Japan draws, subscribes to a more active posture, based on a disposition to steer the market in desired directions.

With regard to industrial policy, exploration in Chapter 3 found that while the use of industrial policy in Japan is a forgone conclusion for a majority of social scientists, in the case for the USA this is not so. Both the critics and the proponents of an active role for government in the USA seem to agree that the USA government has not had a coherent set of policies toward industry. However, based on a definition of industrial policy exclusively in terms of explicit government efforts to promote the international competitiveness of particular industries, the USA has had relatively few industrial policies. But by the same token, it seems that neither has Japan because many of the industries promoted by MITI in the 1950s and 1960s were not originally intended to become leading exporters.
In terms of business-government relations, Japan has had a formal mechanism known as deliberation councils to allow the public and private sectors to collaborate in policymaking. The USA does not have such formal institutions. However, the USA has informal arrangements such as lobbies and PACs that seem to be as effective as the Japanese formal arrangements in allowing the private sector to influence policy decisions.

The USA cooperation approach seems to have the potential to promote sustainable development because the state interventions were mostly aimed at opening up the market and creating competition. The Japanese state-market collaboration, on the other hand, seems to have the potential to promote fast industrialisation and hence development. However, it does not appear to have the ability for sustainable development because of its tendency to create imperfection in the market through the 'picking winners' strategies. As indicated by the Japanese economist Noguchi Yukio (cited in Gao 1997:1), the Japanese economy still operates both institutionally and ideologically, by the '1940 system'.

Analysis in Chapter 4 shows that the Malaysian Government has consistently assumed a key role in the Malaysian economy, be it in the form of active intervention or active support. However, whatever the role of the state, there seems to be dispute with regard to which private sector interests are being served. Chapter 4 also found that the Malaysian Government seems to be committed to the public-private sector development strategy. The establishment of NEAC, Danaharta, Danamodal and CDRC demonstrated over the years, various strategies and policies have been formulated and implemented to ensure the effectiveness of this mechanism.

According to the Seventh Malaysia Plan (Government of Malaysia 1996b), the private sector's impressive contribution to socio-economic development is one of the reasons Malaysia was able to sustain its impressive growth performance from 1988-1996. Moreover, it is claimed that the private sector contribution was made possible because of the Malaysia Incorporated Concept. This conclusion implied that the Malaysia Incorporated Concept was fully supported by the Malaysian public and private sectors.
The survey in the study, however, found that the support for the Malaysia Incorporated Concept is mainly confined to the idea and purpose of the Concept. For example, the public and private sector respondents opposed the idea that the public and private sectors should treat each other as adversaries. They also agreed that the public and private sectors should contribute to meeting social needs and believed that public policies address critical issues of society. In addition, the public and private sector respondents perceive industrial policy as important to Malaysia's industrial development. The responses suggest that the private sector respondents recognised business reliance on government and believe investment incentives would help to promote investments and increase the competitiveness of industries. They also seem to agree that government through it policies is capable of ‘picking winners’ among industries. The findings suggest that the public and private sector respondents favour a mixed economy model for Malaysia. Besides industrial policy, the public and private sector respondents also support the idea that through the collaboration approach Malaysia can achieve its national goals, because this approach has enabled the public and private sectors to cooperate in the decision-making process especially in those decisions that may affect the private sector. This view is reflected in the willingness of the private sector to participate in the dialogue sessions and to submit their policy proposals to the government despite their scepticism with regard to how much of their proposals are accepted by the government. This finding, according to Steven (1988:103), is not surprising because normatively, there is agreement that ‘good’ things are desirable (Stevens 1988:103). In this case, the idea and purpose of Malaysia Incorporated Concept is considered by the respondents as a ‘good’ thing.

Despite the apparent support for the idea and purpose of the Malaysia Incorporated Concept, the response from the public and private sector respondents to issues related to facts about the Concept indicates their uncertainty and scepticism. For example, the survey found that the private sector respondents remain sceptical about the impartiality of civil servants, the efficiency of the civil servants in utilising resources and the professionalism of public servants. Meanwhile, the public sector respondents are sceptical about the private sector’s willingness to participate directly in the social development process. They are also unsure as to whether the private sector should follow the spirit and intent of public policies. The public sector respondents are also uncertain as to whether the private sector faces high levels of risk if it makes
philanthropic contributions. In addition, the public and private sector respondents have opposing opinions with regard to the competency of the public servants, the effectiveness of the private sector decision-making methods, and the impact of factors affecting the stability of public policies. As for government intervention, the support of the private sector is confined to intervention at a macro level and only if it does not affect the efficiency of the private sector. This view is reflected by the private sector respondents' preference for the free market system.

As regard the effectiveness of the Malaysia Incorporated Concept, the survey found that the public and private sector respondents agreed that the Concept has been effective in promoting public-private sector collaboration. However, these responses do not seem to extend to statements related to the various administrative improvement programs carried out by the government to improve dealings between the public and private sectors. Most of public and private sector respondents were unsure as to whether the administrative programs has been effective in achieving their intended objectives. This result could be due to the fact that the improvement programs were relatively new (most were introduced in the early 1990s) or that the private sector respondents are not fully aware of the existence and purpose of these programs. This finding seems to be inconsistent with the Malaysian Government's assertion in the Seventh Malaysia Plan (Government of Malaysia 1996b:6) that the government's initiatives towards greater deregulation, towards simplifying administrative procedures, and providing better incentives - in line with the Malaysia Incorporated Concept - have led to the strengthening of the private sector's contribution to economic growth.

Based on the number of points in the survey where the public and private sector respondents have a consensus compared to the number of points where the consensus breaks down, it seems that the Malaysian public and private sectors support the public-private sector collaboration approach to development process. However, detailed examination of the points where the consensus holds revealed that they pertained mostly to issues related to 'what should be'. This implies that the public and private sector respondents support the idea that there should be an accommodative role for the public and private sector in the development process because they perceive it as a 'good' thing. The possible explanation for this is that, the public and private sector respondents do not fully understand the extent of initiatives that they should take in dealing with legitimate
economic and social problems under the collaborative effort. This explanation is in line with Abdullah Abdul Rahman’s (1993:370) assertion that ‘While the concept has been accepted into the framework for development, its operational reality on the other hand is less evident, and indeed little understood by our society’.

To see whether the support for the public-private sector collaboration strategy is only confined to ideas rather than to reality (as found in chapter 6) chapter 7 examined the implementation of the public-private sector collaboration strategy in the technology development process and its impact on technology development in Malaysia. Chapter 8 examines the capability of Technology Park Malaysia (TPM) in promoting technology development. As indicated in Chapter 7, the Malaysian Government’s commitment to technology development is clearly stated in its five-year Development Plans, the Outline Perspective Plans, the Industrial Master Plan and the Action Plan for Industrial Technology Development (APITD). The implementation of this program includes the adoption of the public-private sector collaboration approach and the establishment of Technology Parks. Various policies and strategies were put in place by the Malaysian government to promote R&D and technology development activities through the collaboration approach.

However, as indicated in Chapter 7, despite the strategies and policies, actual public-private sector collaboration in technology development had been limited. The most important reason for the lack of collaboration is the lack of skilled human resources in the area of R&D and technology development. Other factors include:

- Weaknesses of the ‘research-push’ approach to technology development policy;
- Lack of a tradition of industrial technology development among the Malaysian private sector;
- The extensive reliance on foreign sources of technology;
- The SMIs strong incentives to stay legally ‘small’ (below a capital of RM2.5 million);
- The inability of the financial system to deal adequately with promoting technology development in Malaysia;
- The inability of MTDC to meet the financing needs of the technology-based private firms to commercialise their research results.
- The uncertainty in the effectiveness of tax incentives to encourage private sector R&D because (1) the incentives seem to be biased towards larger firms; (2) the narrow definition of the term R&D has not enabled smaller firms to benefit from
minor technical improvements which could raise their productivity quite substantially; and (3) approval for tax benefits is uncertain and firms are not sure whether they would qualify and, therefore, those with tighter budgets would probably think very carefully before undertaking R&D;

- The weaknesses of Malaysia’s intellectual property rights protection; and
- The limited success of the Vendor Development Program to promote linkages between SMIs and large firms.

As stated earlier, the actual public-private sector collaboration in technology development had been limited. Even when there was collaboration between the public and private sectors, it was limited to the lower end of the technology development spectrum and to non-technological activities. This finding supports the findings in Chapter 6 whereby, at the macro level, the support for the public-private sector collaboration strategy does not seem to be translated widely into practice.

As is always the case, strategies and policies usually have more than one objective. This is true with most of Malaysia’s technology development strategies and policies. Hence, even though the findings (Chapter 6 and 7) at the macro level suggest that support for the public-private sector collaboration strategy is confined to idea rather than reality, it may not yet be possible to treat it as conclusive finding. The case study on Technology Park Malaysia (TPM), in Chapter 8, look at whether, at the micro level, the collaboration process has indeed taken place or whether it remains as rhetoric.

The survey conducted on the tenants of TPM found that they generally supported the suggestion that the establishment of TPM is useful in providing the tenants with the opportunity to conduct R&D activities. However, the major factor that attracted tenants to base in TPM is its low rental rate. This finding is consistent with the findings by the United Nations (1994) and World Bank/UNDP (1995).

As for the other facilities provided by TPM, they do not seem to be important in the tenants’ decisions to locate. For example, one of the objectives of the TPM is to facilitate the links between the government, industry and universities and to encourage their cooperation in R&D activities. The survey found that the tenants mixed perception regarding the capability of TPM in promoting the linkages between the government, industry and universities does not seem to influence their decision to locate in TPM. This
could be because despite their support for the possibility that the TPM has the potential to promote public-private sector collaboration, they don’t consider such linkages as an important factor in their decision to locate in TPM.

As pointed out in Chapter 8, the TPM’s limited capability to promote linkages between the government, industry and university may be due to various reasons. One explanation could be the limited number of skilled R&D human resources available to TPM. This reasoning is in line with the finding in chapter 7 where lack of R&D human resources is one of the reasons why Malaysia has had limited success in promoting linkages between the public and private sectors in technology development. Another possible explanation could be the regulatory structure of the Public Institutions as suggested by Nesadurai (1994) and Jong-Chun (1995), which allow for little interaction with industry. PRIs generally operate within a bureaucratic framework that hinders the transfer of technology to the private sector. This situation is exacerbated by the limited time available for academics to pursue collaboration efforts with the private sector.

Apart from establishing linkages, TPM is supposed to provide state-of-the-art information on marketing, management and technical support and to assist tenants in marketing. The tenants’ responses on these factors were mixed, suggesting that TPM is as yet to fulfil these objectives. Despite this, the number of tenants in TPM is high (to date, there are 89 tenants located in TPM, suggesting that these factors are also not important in the tenants’ decision to locate in TPM.

The TPM’s limited success in promoting public-private sector collaboration in technology development is not peculiar to Malaysia. The findings in Chapter 2 suggest that, except for Silicon Valley and Boston Route 128, technology/science parks in Europe, Australia and other Asian countries have also had limited success in promoting linkages between the public and the private sector. In addition, most analysts are sceptical with regards to the technology/science parks’ contribution to technology development. Based on this, it can be concluded that technology/science parks have not yet fully achieved their intended objective in promoting technology development through public-private sector collaboration. For Malaysia, the study suggested that, despite the rhetoric, public-private sector collaboration has not been important in the tenants’ decision to locate their R&D activities in the TPM. A factor such as rental rate seems to
be more important than public-private sector collaboration. This finding supports the macro findings that the policy of public-private sector collaboration has not been widely translated into practice.

Based on this limited examination, it can be concluded that the public-private sector collaboration strategy has had a limited impact on the manufacturing sector and the technology development programs. Since the manufacturing sector’s contribution to the economy has been substantial since the mid-1980s\(^3\) and technology development is crucial to the manufacturing sector, it can be concluded that, thus far, the public-private sector collaboration strategy has not been an impelling force in Malaysia’s development process. It can also be concluded that the current nature of Malaysia’s public-private sector collaboration strategy may not be effective in promoting sustainable development. However, because this conclusion is based on a single analysis, it may not be possible to make a conclusive judgement that state-market collaboration has no role in the development process. This is because the U.S. and Japanese and to some extent the Malaysian experience, suggests that, if state-market collaboration is managed accordingly, it has the potential to contribute to socio-economic development.

Of course, evaluating the results of policies is fraught with difficulties. Even when a defined set of criteria exists, it is difficult to arrive at a definitive conclusion where effects are not measurable, or as in the case of the public-private sector collaboration strategy, where the impact depends on changes in the attitudes of the public servants and private sector personnel toward each other. Another complication is the issue of attribution, that is, to what extent can the observed changes be attributed to a particular policy. Finally, the question of ‘what might have been’ can only be guessed at. The decision to use the perception approach in the thesis is because it helps to determine how far the Malaysian public and private sectors supported the collaboration strategy adopted by the Malaysian Government. The assumption is that if they supported the strategy, then it is assumed that it has been an impelling force in Malaysia’s development process and \textit{vice-versa}. This is indeed a simple assumption and may be subject to some qualifications. However, according to Telser (1987) a theory of behaviour that assumes

\(^3\) Refer to Chapter 4 and table 5.1 and figure 5.1 in chapter 5 of the thesis.
there is a difference between what is true and what people believe to be true can make better predictions of what they will do than a theory assuming omniscience.

Implications

This study concludes that the state and market both have a role in the development process and their collaboration has the potential to promote socio-economic development. The thesis also concludes that the U.S. approach of state-market cooperation is more viable in the long run because this form of intervention is mostly aimed at creating competitive markets. At the same time, the thesis concludes that the Malaysian state-market collaboration approach, at least in its present form, is not appropriate for sustaining development because it does not seem to promote competitive market, which is a crucial element in ensuring long-term sustainable development.

For the Role of State-Market Collaboration in the Development Process

The U.S. experience has shown that state-market collaboration can be beneficial if it can promote a competitive market. This is crucial because competitive markets are 'the best way yet found for efficiently organising the production and distribution of goods and services' (World Bank 1991:1). Competitive markets also reduce the scope for abuses of discretionary powers. However, markets cannot operate in vacuum. They require a legal and regulatory framework that reinforces and complements the domestic and international competitive strategies of the individual firms that only state can provide (World Bank 1991:1). Therefore, the role of the state in this collaboration should be to complement markets. The state should create an environment in which the market can thrive by establishing appropriate macroeconomic institutions and policies that set the framework for a smoothly working market system. According to Stiglitz (1996:173), the state should assume an active role in creating market institutions, such as long-term development banks and capital markets to trade bonds and equities, and in establishing an institutional infrastructure that enables markets to work effectively. As suggested by Israel (1991), the state should assume the following role to support the market:

- To design, monitor and implement a consistent set of macroeconomic and sectoral policies
- To provide an enabling environment for the functioning of competitive markets
- To privatise wisely and effectively
- To conduct an efficient dialogue with the private sector
- To operate more effectively the enterprises that remain in the public sector.

Meanwhile, the World Bank (1991:5) suggested that state interventions are likely to help if they are market-friendly. That means:

- Intervene reluctantly. Let markets work unless it is demonstrably better to step in. Certain actions involving public goods such as spending on basic education, infrastructure, the relief of poverty and environmental protection readily pass this test. Other actions such as the state carrying out physical production and protection of domestic production of a good that can be imported more cheaply and whose local production offers few spillovers benefits usually fail the test.
- Apply checks and balances. Put interventions continually to the discipline of the international and domestic markets.
- Intervene openly. The state should make interventions simple, transparent, and subject to rules rather than official discretion.

These are some of the functions the state may assume in the collaboration effort. The list, however, is not exhaustive. Further research is needed to find out how the state can assume an effective role while leaving the market to lead the development process. One thing is obvious, however, sectoral or 'picking winners' approaches to development process may be effective in the short run but have limited capability to promote sustainable development.

In addition to creating competitive markets, state-market collaboration could also encourage the state and market to exchange information through formal and informal institutions. The sharing of information could enhance the quality of decisionmaking. The exchange of information through collaboration may convey more truthful information than the format that used to display planned sectoral inputs and outputs. This is because gains from cooperation are based on the perception that the future returns to cooperation exceed the short-run gains that might accrue from the pursuit of self-interest. The institutions and mechanisms that facilitate cooperation will not try to 'free ride' to obtain information provided by others while providing no real information themselves because they are involved in a long term relationship and if they cheat, they would be ostracised from the circle. The private sector is interested to know what the state is thinking about specific projects or what policy changes are planned. Therefore, to ensure the state provides this information, the private sector must ensure that it also
provides a useful information to the state. The state, on the other hand, has the ability to
encourage truthful exchange of information because state intervention can create rents
that can be allocated to participants who provide truthful information.

On the other side of the coin, state-market collaboration could easily be turned into
collusion to raise prices and restrict output and entry. Worse still, discretionary powers
needed for collaboration could give rise to rent-seeking corruption and waste. Also, state
assistance to markets is considered to be inherently unfair because such action bestows a
privilege on a group in society that is often better off than most and is generally paid for
by the wider community through higher prices or taxes. Assistance to markets may also
distort the allocation of resources because scarce resources may be allocated into
inefficient sectors of the economy. Beside, state assistance to markets could produce
downstream effects. For example, the higher costs or inefficiencies which flow from
helping businesses make products, like steel or plastics (which are inputs into other
goods and services), can undermine the competitiveness of downstream industries like
car manufacturers.

The 1997-98 Asian Financial Crisis has shown that institutional weakness, including
government-business relations, interlocking ownership between banks and non-bank
corporations, and high corporate leverage, in the East Asian economies was one of the
causes of the crisis. These were considered to be at the origin of weak corporate
governance, implicit government guarantee, moral hazard, excessive risk-taking and
inefficient and unsound investments. Before the crisis, the institutional features of the
East Asian economies were considered to be among the factors accounting for the Asian
miracle. However, the dismantling of checks and balances needed for an efficient
functioning of these institutional arrangements causes the sharp deterioration in its
performance. The break from past practices was notable in two areas: state guidance of
private investment and control over external borrowing. For instance, the Republic of
Korea had always tapped external finance in its post-war industrialisation primarily
through borrowing from international banks and almost always subject to government
approval and guarantee. Moreover, policy always assumed a major role in coordinating
private investment decisions to avoid excessive competition and excess capacity.
However, the Korean government seem to be abandoning this coordination role and as a
result, misallocation and over-investment occurred. Meanwhile, the Korean government
also relinquishes control over its financial sector, which resulted in the country became vulnerable to external debt run and an attack on its currency (Akyuz 2000:13).

Despite the above, it cannot be argued that the main reason for the crisis was too much government intervention and control. Instead, as argued by Stiglitz (1998) and Akyuz (2000), this could be the case of too little government intervention. According to Stiglitz (1998) 'the fault is not that the government misdirected credit…Instead the problem was the government’s lack of action, the fact that the government underestimated the importance of financial regulation and corporate governance…. The East Asian crisis is not a refutation of the East Asian miracle. The more dogmatic version of the Washington Consensus does not provide the right framework for the understanding both the success of the East Asian economies and their current troubles’. This suggests that state-market collaboration needs to be managed so as to ensure its positive contribution to socio-economic development.

For Malaysia’s Public-Private Sector Collaboration

Chapter 4 discussed the reasons why the Malaysian Government felt that the Malaysia Incorporated Concept was necessary to achieve its development aspirations. However, the thesis has suggested that attitudinal change has been limited between the public and private sector personnel, at least with respect to the manufacturing sector and TPM. This could be partly induced by their divergent interests. Despite claims from the private sector respondents that profit is not their primary objective, profit remains their major objective and rightly so. Meanwhile, the public sector is responsible for the broader social objectives of poverty eradication, societal restructuring and nation building, even though there are calls for the private sector to share these responsibilities. It is important that the two sectors be brought to better understand each other so to ensure that their mutual distrust and suspicion would dissipate.

To completely remove the mutual distrust and suspicion between the public and private sector is not possible. However, that does not mean that public-private sector collaboration should be ruled out. The Malaysian Government acknowledges that the private sector inputs are critical to informed decision-making. The establishment of NEAC to deal with the 1997/98 financial crisis is a demonstration of this acknowledgement. Meanwhile, the participation of the private sector in NEAC indicated
that they believe the collaboration approach can contribute towards the conception of solutions to resolve the crisis that will be acceptable to everyone. In addition, the Government is of the opinion that the collaboration strategy is necessary if Malaysia is to industrialise with its own industrial dynamism, rather than to rely heavily on foreign investors. Also, through collaboration the public and private sectors would be able to pool their scarce resources, skills, technology and all other critical factors to strive for optimal growth and development. Besides, the Government feels that the private sector should support strategies and directions in which social obligations can be addressed. For these purposes, consultation and interaction processes provide a better perspective of private sector problems and challenges and hence the accommodation of the private sector’s aspirations in policy changes and formulation.

To ensure the collaboration approach serves its purpose, the Malaysian Government must avoid some of the major pitfalls of the Japanese state-market cooperation and the Asian Financial crisis. One of its crucial failures was the undesirable consequence of Japanese indicative planning. For example, even though some of the industries under the Japanese government’s priority programs are now well-established and internationally competitive, they do not seem able to make their own decisions to expand and diversify as they are encumbered by the rules and regulations designed to govern their operations in their initial stages of development (Gao, 1997). The Malaysian Government should also ensure its role is restricted to that of providing the right policy environment for the private sector and that there is no collusion between government and big business, with development priorities and goals being skewed in favour of big business. As in the case of the other East Asian countries affected by the Asian financial crisis, there are limitations in the area of corporate governance in Malaysia. Therefore, the Malaysian Government must raise the level of corporate governance in the country in line with international best practices, including strengthening transparency and disclosure standards as well as protecting minority interests. In addition, the government has to ensure that in the single-minded pursuit of industrial growth, social goals and human welfare - which should be the ultimate objective of development - are not overlooked.
The implementation of the public-private sector collaboration strategy entails specially close relations between government and business, which inadvertently leads to close ties between the ruling party and the more organised large-scale business corporations. Once such a relationship becomes firmly entrenched in the economy, this could lead to a number of undesirable consequences such as the emergence of cartels and monopolies. Also a political-bureaucratic-business collusion, that may arise from this collaboration strategy, could create the possibility of higher levels of corruption. But even more insidious is the pervasiveness of a system, which, although it may not be seen as corruption in the strict sense of the word, leads to strengthening of ‘money politics’ or to what is termed ‘institutional corruption’, as exemplified by the series of corruption scandals in Japan. In addition, there is the possibility of big business interests being able to establish very close links with the ruling parties or the public sector, obtaining preferential access to strategic information, and thus commanding an unfair advantage over others. Therefore, there is a need to ensure that all consultative public-private mechanisms include fair representation from different interest groups, to ensure that these unwarranted consequences can be avoided. Thus far, the bailing out of the financial institutions under the Danaharta and Danamodal schemes\(^4\) seem to be free from biasness towards institutions with close links with the ruling parties. As such, it does not seem to affect the perception of the private sector towards the government. In fact, it can be said that the implementation of Danaharta and Danamodal has improve the perception of the private sector towards the government, thus their cooperation that brought about the revival of the economy. However, the move by the Malaysian Government to buy back the Malaysia Airlines’ shares from Naluri Bhd at RM8.00\(^5\) may affect the private sector view as to how far the government practices neutrality in bailing out ailing companies.

Finally there is the possibility that small and medium-scale industries would not be adequately represented in the collaboration process because they do not have the advantage that the larger corporations have in terms of organisation and being well-placed to engage in dialogue with the public sector. There is also the possibility that major policy decisions could be biased against them. Since small and medium scale industries have a strategic role in Malaysia’s economy, not only for their conventional

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\(^4\) Refer to Chapter 4 for the explanation on Danaharta and Danamodal.
roles of employment creation, but also for regional development and income distribution, measures have to be taken to ensure the smaller firms do not lose out

The Need for New Approaches to the Study of the Role of State and Market in the Development Process

As pointed out in Chapter 2, the debates regarding the role of state and market need to be reconsidered so as to take into account the possibility for these entities to collaborate in the development process. According to Boyer (1996:84), the last decade has seen an impressive challenge by *laissez-faire* and pro-market strategists to the pro-state theories advanced by post-Second World War economists. Clark and Roy (1997:1) also argued that in the last three decades the political economy of development has been marked by a series of debates between competing dichotomies: modernisation versus dependency theory; neoclassical economies versus the developmental state model; and state-centric theory versus the state-in-society approach. These debates, according to Boyer (1996:84) are not new since the discussion of the relative merits of the market and state has been at the centre of political economy from the beginning. Each debate, according to Clark and Roy (1997:1), began when a dominant theory or paradigm failed to explain important phenomena of interest to development scholars. Unfortunately over time the debate became an increasingly unproductive "dialogue of the deaf" between schools of thought whose fundamental assumptions and conceptualisation were so divergent that their analyses became incomparable and perhaps close to mutually incomprehensible.

Boyer and Clark and Roy's views suggest that if the debates on the role of state and market in the development process continue to be binary in nature, there is a great possibility that theory may continue to fail in explaining reality. This is because, between the state and market, there is likelihood to be some form of cooperation or adversariness in their interactions rather than only pure forms of collaboration or conflict. Markets offer the potential for efficiently allocating goods. The state, on the other hand, can create viable markets by simply allowing private transactions. Often, the state must assume a more affirmative role in enabling the markets to function. As pointed out by Weimer and Vining (1989:125), although an operational market per se cannot be introduced, market outcomes can be stimulated with the use of market-like mechanisms. Further, they argued that it is meaningless to talk of competitive markets except within a

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5 The market value of the shares was RM3.25 per share (The Star 22 December 2000).
rule-oriented framework. The genesis of this idea, according to Weimer and Vining (1989:148) dated back to Adam Smith, who recognised the need for market rules when he pointed out that the first inclination of people in the same line of business when they gather together is to collude and subvert the operation of a competitive market. Weimer and Vining reiterated that the competitive market itself could be considered as a public good that will be undersupplied if left entirely to private activity. Reed (1993:137) meanwhile argued that the Japanese experience has shown that government intervention can accelerate economic growth. However, government cannot deny the influence of market forces. Policies that go against the grain of market forces reduce economic efficiency and market forces have a way of overwhelming public policies. Markets must be the main engines of economic growth. The bureaucracy cannot override the market without paying a price, though sometimes the gains may be worth it.

Based on the above, it is suggested that defining the end-points of the state-market relation continuum should not be the critical objective of the debates on the role of state and market in the development process. Rather, this thesis suggests that, the reasonable approach should be a choice between different combinations of the role of state and market. By doing so, it may be possible to add dimensions to the linear spectrum and see if a regime combining certain features of state intervention with activities of a free market can be productive. This approach may be nearer to the reality in explaining socio-economic performance and may help to identify a more effective role for the state and market in the development process.

**Further Areas of Research**

Because of resource and time constraints and the limited scope of the study, the examination of public-private sector collaboration in Malaysia has been conducted in isolation from other factors that may affect development. Perhaps, if the analysis were to be multi-dimensional, a different result may emerge. Therefore, there is a need to conduct a comprehensive evaluation of all policies related to public-private sector collaboration to achieve more accurate conclusions regarding the effectiveness of the public-private sector collaboration strategy.

In addition, several issues regarding the public-private sector collaboration strategy need to be researched further for a comprehensive examination of the effects of this strategy.
on Malaysia's development process. For example, there is need for a comprehensive study on the effectiveness of the structural mechanisms (such as the Consultative Panels, the Malaysian Business Council and the Dialogue Sessions) of the Malaysia Incorporated Concept in facilitating the collaboration between the public and private sectors in the policy making process; the freer and faster flow of information between these sectors; and the reduction of mutual suspicion and distrust between the public and the private sector personnel.

There is also need for a comprehensive examination of the effectiveness of the administration reforms implemented by the Malaysian Government since 1990 to facilitate the public-private sector collaboration strategy. For this purpose, there is need to investigate the level of implementation of the administration reforms and the operational mechanisms adopted for their implementation in different government agencies. Also, there is need for a comprehensive examination of the effectiveness of these administration reforms in fostering a closer working relationship between the public and private sectors.

Finally, there should be a comprehensive study of the impact of the Malaysia Incorporated Concept on the general public. This is important because the Malaysia Incorporated Concept is not only promoting a two-way relationship between government and business but also relations between government, business, workers, and the general public. In any case, any relationship between any two or more of these entities will affect other.

As for research on the role of state and market in the development process, Keegan (1993:9) argued that the 1980s were a period when the capitalist or market economies tried to reassert their belief in market forces and in a smaller role for the public sector. Privatisation and deregulation has been all the rage. But in its finest hour, that is, the manifest collapse of communism, the "club" of market economies faced a number of threats to their own success. Were these countries, which avowed such firm faith in the virtues of the free market, going to allow trading frictions between the major blocks to develop into a trade war? Had deregulation of the financial system produced chaos, in both the banking system and the foreign exchange markets? Were financial market forces impeding the ability of the real market economy to deliver? And, in their enthusiasm for
market forces and the private sector, were the major market economies neglecting the basic infrastructure which all market economies ultimately needed, and, indeed, risking destruction of the environment on which the future of the entire planet depended? All these questions involve re-examination of the appropriate role of government, or the state; of the balance between the public and the private sectors of the economy; of the question 'when is Government intervention necessary and when are things best left to 'the market'?' And perhaps most of all, it was necessary to scrutinise the 'rules of the game' for the conduct of economic and trading relations between nation states and trading blocs. Countries or trading blocs which 'do their own thing', and fail to coordinate sufficiently, may be threatening the future of that very 'capitalism' which is celebrating its triumph over communism (Keegan 1993:9).

Reed (1993:149) argued that no mater how much fun it is to pretend that Japan is a completely different species of a nation, the important point is to reconceptualise the market. There is a need to recognise that many market forces operate in all economies and that competition is only one of those forces. Therefore, there is a need to study markets as an institution, not as an icon. If there is an understanding on how politics and economics generally work in industrialised democracies, then it will be possible to understand how they work in Japan.

The questions rose by Keegan and Reed are very relevant to the suggestion in the thesis regarding the role of the state and market in the development process. The thesis supported the suggestions by other analysts that the debates on this subject should be over the choice between different combinations of the role of state and market. Therefore, the next step is to establish the framework for such analysis. Cooperation models and approaches require further investigation. For example, if cooperation between the state and market is needed to achieve the objectives of economic development, then resource interdependence between the state and market must be resolved.

Pempel (1998:207) suggested the use of 'regime' as a conceptual tool for analysis of the role of state and market in the economy. According to him, how states and markets interact, and how states either dominate societies or are permeated by them, may well be
important characteristics of particular regimes. But it is the mutually contingent character of state structures, markets and societal organisation that is central to understanding regimes. Similarly, regime analysis reflects the inter-weaving of domestic and international factors in single countries rather than how one trumps the other across time and place.
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Questionnaire to Private Sector

GENERAL BACKGROUND:

In the spaces below, please fill the function(s) of your organisation, your present position and the types of government services required by your organisation.

1. Please list the major function(s) of your organisation?
   __________________________________________________________
   __________________________________________________________

2. What is your present position?
   __________________________________________________________

3. How long have you been with this organisation?
   __________________________________________________________

4. Please list your major function(s)?
   __________________________________________________________
   __________________________________________________________

5. Do your organisation require government services?
   Yes ___.
   No ___.

6. If Yes, please indicate the type(s) of government services required?
   __________________________________________________________
   __________________________________________________________

7. Based on your work experience, how would you describe the relationship between your organisation and the government agencies?
   ___ Adversarial
   ___ Somewhat Adversarial
   ___ Neutral
   ___ Somewhat facilitating
   ___ Facilitating
   ___ Other (please specify) _____________________________

THE MALAYSIA INCORPORATED CONCEPT

The main objective of the launching of the Malaysia Incorporated Concept in 1983 is to foster a close collaboration between the public and the private sector in the pursuit of economic growth. Various strategies and policies were introduced by the government to promote this collaboration so as to ensure that the private sector can assume its role as the engine of growth effectively. Your kind cooperation is seek in order to gauge into
the effectiveness of these strategies and policies in promoting the public-private sector collaboration in Malaysia

On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
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**a) General issues in public-private sector relations**

8. ___ The public sector should be the facilitator not the regulator of the private sector.
9. ___ Public policies address critical needs in society.
10. ___ Public policies can help create competitive advantages and make certain businesses more profitable.
11. ___ The public sector depends on the private sector for many of its resources.
12. ___ Government policies are unstable because politicians are always running for office.
13. ___ Civil servants are more committed to the public interest than businesspersons.
14. ___ Society demands too much from government for social services, thereby reducing available resources for economic development.
15. ___ If the business sector regulated itself effectively, government would be less likely to intervene in business affairs.
16. ___ The private sector should consider the societal interests in their decision making.
17. ___ The private sector follows the spirit and intent of public policies.
18. ___ Society makes too many demands on the private sector that depletes critical resources.
19. ___ The private sector should actively oppose government agencies that reduce their profitability.
20. ___ The private sector is not held accountable for their actions that affect society.
21. ___ The public and private sectors should both operate in their individual self-interest.
22. ___ The public and private sectors treat each other as adversaries.

**b) Issues related to public-private sector collaboration**

23. ___ Public-private sector collaboration is necessary to achieve national goals.
24. ___ The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
25. ___ The private sector has many opportunities to present views to the public sector on specific policy proposals.
26. ___ The private sector regularly submits its views to the public sector on particular policy proposals.
27. ___ The internationalisation of business will force the public sector to develop more public policies that affect business.
28. ___ The private sector should attempt to assist in the formulation of public policies through dialogue with the public sector.

(Questions 29-33) The private sector identifies potential areas of public policy concern by:
Reading regularly published government documents.
Being alerted by trade associations or newsletters.
Conferences or meetings organised by government agencies.
Mass Media.
Other (please specify ____________________
Government should use public policies to stimulate specific investment.
The public sector can effectively determine which industries or businesses need government support.
The public sector should help the economy to grow by using fiscal policies.
The best approach to economic development is the free market system.
Government should guarantee loans for some businesses and industries.
To the extent possible, the private sector should provide resources that can be used for achieving societal objectives.
The private sector should thoroughly integrate the social responsibility function into their strategic management.
Public sector policies should include provisions that require the public and private sectors to develop cooperative approaches for meeting policy objectives.
Every public policy that affects the private sector should have a public-private partnership clause that requires the policies to be jointly implemented.
Effective public sector use of resources depends on how much the private sector cooperates.
Public-private sector collaboration does not need conscious direction and should be allowed to evolve on its own to address whatever issues emerge.
Corporations should have government representatives on their Board of Directors.
Government decision-making bodies that affect the private sector should include private sector representatives as members.
Private sector personnel should be receptive to consultation with civil servants that need help to improve government cooperation.
The private sector is more responsive to its consumers/clients than the public sector.

c) Effectiveness of the Malaysia Incorporated Concept
The concerns of the private sector are most often accepted by public policy makers in the policies finally adopted.
Public-private sector collaboration has improved the quality of public services rendered to the private sector.
Government outputs are difficult to evaluate because they provide such complex social services.
Civil servants are efficient in using resources.
Civil servants carry out public policies as impartially as possible.
The private sector is competent in evaluating government efficiency.
Private sector's decision-making methods are more effective than the public sector's.
Efficiency and effectiveness in the private sector and the public sector differ because the public sector does not have a profit motive.
Regardless of the intent, public sector intervention decreases private sector efficiency in using resources.
Civil servants are as professional as private sector personnel.
59. It is the responsibility of the public sector not of the private sector to carry out social service and equity programs.
60. The most important contribution that the private sector can make to society is to be profitable.
61. The private sector faces high levels of risk when they make philanthropic contributions and engage in other such discretionary or voluntary actions.
62. Private sector decision makers face more uncertainty than public sector decision makers.
63. Optimisation of shareholder wealth is the primary objective of business.
64. The public sector influences the private sector more than the private sector influence the public sector.
65. Civil servants are technically competent in their jobs as are the private sector personnel.
66. The Malaysia Incorporated Concept has strengthened the Malaysian public-private sector working relationship.
67. The Malaysia Incorporated Concept has improved the dissemination of information between the public and private sectors.
68. Cooperation between the public and the private sectors results in the private sector developing positive perceptions about the public sector.

**d) The effectiveness of the administrative improvement programs**
69. The Consultative Panels formed under the Malaysia Incorporated Concept have been effective in enhancing the private sector understanding of public policies.
70. The dialogue sessions organised under the Malaysia Incorporated Concept have enabled the private sector to participate actively in the formulation of public policies.
71. Private sector policy proposals introduced through dialogue sessions have greater chance of being accepted in the formulation of the public policies.
72. Jointly sponsored programs and activities are more likely to achieve their objectives.

(Question 73-80) The following government administrative improvement programs have made it easier for the private sector to deal with the government agencies:
73. The streamlining of government rules and regulations.
74. The upgrading of counter services.
75. The Client’s Charter.
76. The Paper-less Civil Service.
77. The implementation of ISO 9000.
78. The Civil Service Link
79. The training programs to enhance the understanding of civil servants regarding the Malaysia Incorporated Concept.
80. Attachment program for Senior Government Officers.

**GENERAL INFORMATION ON PERSON FILLING IN SURVEY FORM**
81. Ethnicity
   Malay ______
   Chinese ______
   Indian ______
   Others (Please specify) ________________________
82. Sex
   Male ______
   Female ______
Questionnaire for Public Sector

GENERAL BACKGROUND:

In the spaces below, please fill the function(s) of your organisation, your present position and the types of government services required by your organisation.

1. Please list the major function(s) of your organisation?

2. What is your present position?

3. How long have you been with this organisation?

4. Please list your major function(s)?

5. Based on your work experience, how would you describe the relationship between your organisation and the private sector?
   ___ Adversarial
   ___ Somewhat Adversarial
   ___ Neutral
   ___ Somewhat facilitating
   ___ Facilitating
   ___ Other (please specify) _______________

THE MALAYSIA INCORPORATED CONCEPT

The main objective of the launching of the Malaysia Incorporated Concept in 1983 is to foster a close collaboration between the public and the private sector in the pursuit of economic growth. Various strategies and policies were introduced by the government to promote this collaboration so as to ensure that the private sector can assume its role as the engine of growth effectively. Your kind cooperation is sought in order to gauge into the effectiveness of these strategies and policies in promoting the public-private sector collaboration in Malaysia.

On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement.

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a) General issues in public-private sector relations

6. ___ The public sector should be the facilitator not the regulator of the private sector.
7. Public policies address critical needs in society.
8. Public policies can help create competitive advantages and make certain businesses more profitable.
9. The public sector depends on the private sector for many of its resources.
10. Government policies are unstable because politicians are always running for office.
11. Civil servants are more committed to the public interest than businesspersons.
12. Society demands too much from government for social services, thereby reducing available resources for economic development.
13. If the business sector regulated itself effectively, government would be less likely to intervene in business affairs.
14. The private sector should consider the societal interests in their decision making.
15. The private sector follows the spirit and intent of public policies.
16. Society makes too many demands on the private sector that depletes critical resources.
17. The private sector should actively oppose government agencies that reduce their profitability.
18. The private sector is not held accountable for their actions that affect society.
19. The public and private sectors should both operate in their individual self-interest.
20. The public and private sectors treat each other as adversaries.

b) Issues related to public-private sector collaboration
21. Public-private sector collaboration is necessary to achieve national goals.
22. The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
23. The private sector has many opportunities to present views to the public sector on specific policy proposals.
24. The private sector regularly submits its views to the public sector on particular policy proposals.
25. The internationalisation of business will force the public sector to develop more public policies that affect business.
26. The private sector should attempt to assist in the formulation of public policies through dialogue with the public sector.
27. Government should use public policies to stimulate specific investment.
28. The public sector can effectively determine which industries or businesses need government support.
29. The public sector should help the economy to grow by using fiscal policies.
30. The best approach to economic development is the free market system.
31. Government should guarantee loans for some businesses and industries.
32. To the extent possible, the private sector should provide resources that can be used for achieving societal objectives.
33. The private sector should thoroughly integrate the social responsibility function into their strategic management.
34. Public sector policies should include provisions that require the public and private sectors to develop cooperative approaches for meeting policy objectives.
35. Every public policy that affects the private sector should have a public-private partnership clause that requires the policies to be jointly implemented.
36. Effective public sector use of resources depends on how much the private sector cooperates.
37. Public-private sector collaboration does not need conscious direction and should be allowed to evolve on its own to address whatever issues emerge.

38. Corporations should have government representatives on their Board of Directors.

39. Government decision-making bodies that affect the private sector should include private sector representatives as members.

40. Private sector personnel should be receptive to consultation with civil servants that need help to improve government cooperation.

41. The private sector is more responsive to its consumers/clients than the public sector.

c) Effectiveness of the Malaysia Incorporated Concept

1. The concerns of the private sector are most often accepted by public policy makers in the policies finally adopted.

2. Public-private sector collaboration has improved the quality of public services rendered to the private sector.

3. Government outputs are difficult to evaluate because they provide such complex social services.

4. Civil servants are efficient in using resources.

5. Civil servants carry out public policies as impartially as possible.

6. The private sector is competent in evaluating government efficiency.

7. Private sector’s decision-making methods are more effective than the public sector’s.

8. Efficiency and effectiveness in the private sector and the public sector differ because the public sector does not have a profit motive.

9. Regardless of the intent, public sector intervention decreases private sector efficiency in using resources.

10. Civil servants are as professional as private sector personnel.

11. It is the responsibility of the public sector not of the private sector to carry out social service and equity programs.

12. The most important contribution that the private sector can make to society is to be profitable.

13. The private sector faces high levels of risk when they make philanthropic contributions and engage in other such discretionary or voluntary actions.

14. Private sector decision-makers face more uncertainty than public sector decision-makers.

15. Optimisation of shareholder wealth is the primary objective of business.

16. The public sector influences the private sector more than the private sector influence the public sector.

17. Civil servants are technically competent in their jobs, as are the private sector personnel.

18. The Malaysia Incorporated Concept has strengthened the Malaysian public-private sector working relationship.

19. The Malaysia Incorporated Concept has improved the dissemination of information between the public and private sectors.

20. Cooperation between the public and the private sectors results in the private sector developing positive perceptions about the public sector.
d) The effectiveness of the administrative improvement programs
62. The Consultative Panels formed under the Malaysia Incorporated Concept have been effective in enhancing the private sector understanding of public policies.

63. The dialogue sessions organised under the Malaysia Incorporated Concept have enabled the private sector to participate actively in the formulation of public policies.

64. Private sector policy proposals introduced through dialogue sessions have greater chance of being accepted in the formulation of the public policies.

65. Jointly sponsored programs and activities are more likely to achieve their objectives.

(Question 66-73) The following government administrative improvement programs have made it easier for the private sector to deal with the government agencies:

66. The streamlining of government rules and regulations.

67. The upgrading of counter services.

68. The Client’s Charter.

69. The Paper-less Civil Service.

70. The implementation of ISO 9000.

71. The Civil Service Link.

72. The training programs to enhance the understanding of civil servants regarding the Malaysia Incorporated Concept.

73. Attachment program for Senior Government Officers.

GENERAL INFORMATION ON PERSON FILLING IN SURVEY FORM

74. Ethnicity
Malay
Chinese
Indian
Others (Please specify)

75. Sex
Male
Female

THANK YOU FOR YOUR COOPERATION AND TIME
Questionnaire to Trade Associations

GENERAL BACKGROUND:

In the spaces below, please fill the function(s) of your organisation, your present position and the types of government services required by your organisation.

1. Please list the major function(s) of your organisation?

__________________________________________________________________________

2. What is your present position?

__________________________________________________________________________

3. Do your organisation require government services?
   Yes ____
   No ____

4. If Yes, please indicate the type(s) of government services required?

__________________________________________________________________________

5. Based on your opinion, how would you describe the relationship between the private sector and the government agencies?
   ____ Adversarial
   ____ Somewhat Adversarial
   ____ Neutral
   ____ Somewhat facilitating
   ____ Facilitating
   ____ Other (please specify)

__________________________________________________________________________

THE MALAYSIA INCORPORATED CONCEPT

The main objective of the launching of the Malaysia Incorporated Concept in 1983 is to foster a close collaboration between the public and the private sector in the pursuit of economic growth. Various strategies and policies were introduced by the government to promote this collaboration so as to ensure that the private sector can assume its role as the engine of growth effectively. Your kind cooperation is seek in order to gauge into the effectiveness of these strategies and policies in promoting the public-private sector collaboration in Malaysia.

6. Have you ever heard of this Concept?
   ____ Yes
   ____ No
On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</table>

**a) General issues in public-private sector relations**

7. ___ The public sector should be the facilitator not the regulator of the private sector.
8. ___ Public policies address critical needs in society.
9. ___ Public policies can help create competitive advantages and make certain businesses more profitable.
10. ___ The public sector depends on the private sector for many of its resources.
11. ___ Government policies are unstable because politicians are always running for office.
12. ___ Civil servants are more committed to the public interest than businesspersons.
13. ___ Society demands too much from government for social services, thereby reducing available resources for economic development.
14. ___ If the business sector regulated itself effectively, government would be less likely to intervene in business affairs.
15. ___ The private sector should consider the societal interests in their decision making.
16. ___ The private sector follows the spirit and intent of public policies.
17. ___ Society makes too many demands on the private sector that depletes critical resources.
18. ___ The private sector should actively oppose government agencies that reduce their profitability.
19. ___ The private sector is not held accountable for their actions that affect society.
20. ___ The public and private sectors should both operate in their individual self-interest.
21. ___ The public and private sectors treat each other as adversaries.

**b) Issues related to public-private sector collaboration**

22. ___ Public-private sector collaboration is necessary to achieve national goals.
23. ___ The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
24. ___ The private sector has many opportunities to present views to the public sector on specific policy proposals.
25. ___ The private sector regularly submits its views to the public sector on particular policy proposals.
26. ___ The internationalisation of business will force the public sector to develop more public policies that affect business.
27. ___ The private sector should attempt to assist in the formulation of public policies through dialogue with the public sector.

(Questions 28-32) The private sector identifies potential areas of public policy concern by:

28. ___ Reading regularly published government documents.
29. ___ Being alerted by trade associations or newsletters.
30. ___ Conferences or meetings organised by government agencies.
31. ___ Mass Media.
32. ___ Other (please specify) ____________________________________________
33. Government should use public policies to stimulate specific investment.
34. The public sector can effectively determine which industries or businesses need
government support.
35. The public sector should help the economy to grow by using fiscal policies.
36. The best approach to economic development is the free market system.
37. Government should guarantee loans for some businesses and industries.
38. To the extent possible, the private sector should provide resources that can be
used for achieving societal objectives.
39. The private sector should thoroughly integrate the social responsibility function
into their strategic management.
40. Public sector policies should include provisions that require the public and
private sectors to develop cooperative approaches for meeting policy objectives.
41. Every public policy that affects the private sector should have a public-private
partnership clause that requires the policies to be jointly implemented.
42. Effective public sector use of resources depends on how much the private sector
cooperates.
43. Public-private sector collaboration does not need conscious direction and should
be allowed to evolve on its own to address whatever issues emerge.
44. Corporations should have government representatives on their Board of
Directors.
45. Government decision-making bodies that affect the private sector should include
private sector representatives as members.
46. Private sector personnel should be receptive to consultation with civil servants
that need help to improve government cooperation.
47. The private sector is more responsive to its consumers/clients than the public
sector.

b) Effectiveness of the Malaysia Incorporated Concept
1. The concerns of the private sector are most often accepted by public policy
makers in the policies finally adopted.
2. Public-private sector collaboration has improved the quality of public services
rendered to the private sector.
3. Government outputs are difficult to evaluate because they provide such complex
social services.
4. Civil servants are efficient in using resources.
5. Civil servants carry out public policies as impartially as possible.
6. The private sector is competent in evaluating government efficiency.
7. Private sector’s decision-making methods are more effective than the public
sector’s.
8. Efficiency and effectiveness in the private sector and the public sector differ
because the public sector does not have a profit motive.
9. Regardless of the intent, public sector intervention decreases private sector
efficiency in using resources.
10. Civil servants are as professional as private sector personnel.
11. It is the responsibility of the public sector not of the private sector to carry out
social service and equity programs.
12. The most important contribution that the private sector can make to society is to
be profitable.
13. The private sector faces high levels of risk when they make philanthropic
contributions and engage in other such discretionary or voluntary actions.
14. Private sector decision makers face more uncertainty than public sector decision makers.
15. Optimisation of shareholder wealth is the primary objective of business.
16. The public sector influences the private sector more than the private sector influence the public sector.
17. Civil servants are technically competent in their jobs as are the private sector personnel.
18. The Malaysia Incorporated Concept has strengthened the Malaysian public-private sector working relationship.
19. The Malaysia Incorporated Concept has improved the dissemination of information between the public and private sectors.
20. Cooperation between the public and the private sectors results in the private sector developing positive perceptions about the public sector.

d) The effectiveness of the administrative improvement programs
68. The Consultative Panels formed under the Malaysia Incorporated Concept has been effective in enhancing the private sector understanding of public policies.
69. The dialogue sessions organised under the Malaysia Incorporated Concept have enabled the private sector to participate actively in the formulation of public policies.
70. Private sector policy proposals introduced through dialogue sessions have greater chance of being accepted in the formulation of the public policies.
71. Jointly sponsored programs and activities are more likely to achieve their objectives.

(Question 72-79) The following government administrative improvement programs have made it easier for the private sector to deal with the government agencies:
72. The streamlining of government rules and regulations.
73. The upgrading of counter services.
74. The Client's Charter.
75. The Paper-less Civil Service.
76. The implementation of ISO 9000.
77. The Civil Service Link
78. The training programs to enhance the understanding of civil servants regarding the Malaysia Incorporated Concept.
79. Attachment program for Senior Government Officers.

GENERAL INFORMATION ON PERSON FILLING IN SURVEY FORM
74. Ethnicity
   Malay _____
   Chinese _____
   Indian _____
   Others (Please specify) _______________________
75. Sex
   Male_____
   Female_____

THANK YOU FOR YOUR COOPERATION AND TIME
## Questionnaire for the Tenants of Technology Park Malaysia

As tenant of TPM, your views on the efficiency, suitability and adequacy of TPM’s infrastructure and facilities in facilitating your R&D ventures is very useful. Therefore, your kind cooperation is needed in order to answer the following questions.

On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</table>

### Objective of TPM
1. ___TPM is successful in facilitating the private sector’s research and development. 
2. ___TPM is successful in commercializing research and innovations from the private sector, universities and research institutions.
3. ___TPM is successful in promoting the growth and development of high-tech industries.
4. ___TPM provides vital links between industry, government agencies, research institutions and universities.
5. ___TPM facilitates government and private sector collaboration.
6. ___TPM provides facilities for local industries, which are involved in manufacturing and innovations.
7. ___TPM provides state-of-the-art information in marketing, management and technical support.
8. ___TPM assist tenants in marketing aspects.

### Rental Rate
6. ___The rental rate charged by TPM is reasonable.

### Infrastructure and Facilities
7. TPM is functionally divided into four physical components, namely the Innovation House, Incubator Centre, Enterprise House and R & D Lots to enable Technology Park to fully and efficiently support the growth and competitiveness of companies through the different stages of product development to manufacturing. Do you think this functional division is useful and why?
On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement.

<table>
<thead>
<tr>
<th>Inferior</th>
<th>Quite Good</th>
<th>Good</th>
<th>Very Good</th>
<th>Excellence</th>
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<td>1</td>
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</table>

TPM assisted companies in product development and product launching activities by providing support services in design, prototype fabrication, small batch manufacturing and product inspection on a fee-for-service basis. How would you rate these support services?

8. ___CAD/CAM Lab
9. ___Rapid Prototyping
10. ___Precision Machining
11. ___QC Lab
12. ___Production Workshop
13. ___Warehouse
14. ___Solid Ground Curing Process
15. ___Technical Consultancy
16. ___Customised Training
17. ___Design, Prototyping and Manufacturing
18. ___Skilled Manpower
19. ___Security and Safety
20. ___Infrastructure Utility Services
21. ___Environmental Regulations
22. ___Training Facilities
23. ___Multimedia Facilities
24. ___Consultancy Services
25. ___IT R&D Facilitator

The Malaysia Incorporated Concept

The Malaysia Incorporated Concept was introduced by the Government in 1983. The main purpose of this Concept is to promote closer collaboration between the public and private sectors so as to facilitate economic growth.

26. Have you ever heard of this Concept?
   ___Yes
   ___No
   ___Maybe
On the line to the left of each statement, please place the number from the responses below that most closely corresponds to your perceptions concerning the statement

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</table>

27. The Malaysia Incorporated Concept is crucial in promoting the private sector as the engine of growth.
28. Public-private sector collaboration is necessary to achieve national goals.
29. The Malaysia Incorporated Concept is needed to foster public-private sector collaboration.
30. TPM fulfills the spirit of the Malaysia Incorporated Concept in promoting public-private sector collaboration in R&D and technology development.
31. TPM provides the opportunity for my company to carry out R&D activities.
32. Without TPM my company may not be able to carry out R&D activities as effectively as it does now.
33. The private sector should take the lead role in R&D and technology development while the Government should only provide an enabling environment.
34. Both the government and the private sector should collaborate in promoting R&D activities and technology development.

Thank you for your cooperation and time
Experiences of Countries in Utilising Technology Parks to Promote Technology Development

According to Roberts (1986:16) research is a key factor in high technology development. Not any kind of research; it must be research from which it is possible to have technological spin-offs. The most successful technology centres are those which have developed industries from one or more fields of research or development centred on a research or academic institution. Sunman (1986:19) noted that the most successful technology/science parks are those where there is a strong relationship between park management and the associated higher educational institute and where the latter is closely involved in management. If a region can support a strong, higher education institute, then there is scope for a technology/science park. A technology/science park in a depressed inner-city area, where there is a strong technical university, is far more likely to succeed than a technology/science park in an apparently prosperous rural area where there is no strong academic/intellectual partner nearby.

According to Juddery (1987a), overseas experience in utilising technology/science parks to promote technology development suggests that any one or two ingredients left out of the mysterious mix that makes for success can result in a nice piece of landscaping surrounded by vacant lots. But success can be spectacular, for example, California’s Silicon Valley, the hub of the world’s microprocessor industry (Juddery 1987a:68). Cox (1985:18) attributed the success of the technology parks in the USA to four essential ingredients: (1) a desirable living environment; (2) a major technological university; (3) a major research facility; and (4) a skilled labour force. He argued that any community without one of these ingredients would have a difficult time in developing a technology park (Cox 1985:20). He recognised that cultural, economic and political differences may make some elements irrelevant but he stressed the universal importance of the human elements, a good place to live, good educational opportunities, community support and a fertile cultural environment (Cox 1985:24).

In Europe, however, university-tenant linkages have not developed as expected. Dierdonck et. al (1991:112-113) have observed that:

In sum, the information networks relevant to science park tenants can certainly not be limited to the science park environment itself... For the majority of science parks, it is rather difficult to speak of external economies of scale. At best one can hope that they will evolve over a longer period of time. Thus, the advantage offered by the ‘rich business environment on the park’ may well be an illusion.

Joseph (1994:49) also indicated that the formation of new venture companies in technology/science parks does not seem to be as great as expected. A survey of new firms on science parks in the UK found that these firms were not involved in the cutting edge of technological innovation, but involved in new applications of existing technology (Grayson 1993:105). Likewise, the potential for new venture spin-offs arising from university research seem to be limited (Dierdonck 1991:114). Finally, Joseph (1994:49)
has brought into question the contribution of technology/science parks to employment creation. In the 1990s, for example, total employment in UK science parks was less than 15,000 (Quintas 1992 as quoted in Joseph 1994:49).

Jones (1985:33) indicated that at the beginning of 1985, a dozen university-based science parks were in operation in the UK, after the first two science parks were opened in 1970 at Cambridge and Herriot-Watt Universities. In addition, there were at least another 15 in various stages of planning and there were more than 20 non-university-based high technology industrial developments that were often labelled as science parks. In all cases, Jones (1985:33) found that the Universities had striven to maximise the interaction between the firms and between firms and academic departments. The degree of interaction is dependent, to a large extent, on firms’ activities and their need for academic knowledge. Nonetheless, even at Cambridge, the interactions were not always as good as they could be and, generally, the extent to which interaction was occurring was debatable (Jones 1985:34).

The establishment of Technopolis Novus Ortus marked the introduction of science parks in Italy. However, according to Ascione (1985:57), even if the situation is slowly evolving, the university-to-industry relationships in Italy are still rather weak. This has created many problems, of which one is that new ideas for products or services born out of academic research are difficult to evaluate because many problems unknown at the outset may turn up during the development phase or later.

Of the Australian case, Joseph (1994:49) pointed out that despite the burgeoning of high technology policy and the increase in the number of technology parks during the early 1980s, Australia’s indigenous high technology firms and industries have not fared well (Joseph 1994:49). A student of the Silicon Valley phenomenon, Professor Ed Blakey and Planning Consultant Cameron McNamara (as cited in Juddery 1987b:71) commented that 'successful overseas developments are sometimes reproduced in Australia with little understanding of either the underlying forces which made them successful or of the unique constraints and opportunities in local regions'. According to Joseph (1992:86), the evident lack of interaction between firms and universities in the more developed parks could be an indication that the parks are not producing an environment conducive to the growth of small companies, and that its attempts to emulate the conditions of Silicon valley have failed. In recent years, the enthusiasm for technology parks has given way to a measure of scepticism (Joseph 1994:48). The failure of high technology policy to deliver its perceived benefits of employment generation and the creation of new industries, coupled with the global slowdown which has adversely affected many high technology firms (especially in computing), has brought about some major reassessment. It is far from universally agreed that science and technology parks are delivering what they were supposed to when they were established.

According to the United Nations (1994:22), the main problems faced by the Asian technology/science parks are the shortage of qualified and experienced R&D human resources and technology/science park management. Even in the successful story of the Singapore Science Park, there are still problems of technology transfer from transnational corporations (TNCs) in the Park. Yet this initiative was backed up by great effort from government in executing the programmed industrialisation over the past 30 years, by human resources development since late 1960s, and by heavy investment in infrastructure. Job-hopping remains the top headache for TNC tenants.
In summary, this section has shown that even though technology/science parks have been popular in industrialised as well as in newly industrialised and developing countries, most analysts referred to here are sceptical with regard to technology/science parks contribution to technology development. In terms of fostering linkages between the public and private sectors, except for Boston Route 128 and California Silicon Valley, the other technology/science parks seem to have achieved limited success.
Appendix 6

Institutional Framework to Promote Technology Development through Public-Private Sector Collaboration Strategy

The public-private sector collaboration is one of the strategies adopted by the Malaysian Government to promote its technology development objectives. Various institutional changes were introduced to facilitate this strategy. As shown in Table 1, several government agencies were set up to coordinate technology development and R&D policies and programs. The main policy-making, coordinating and implementing agency is MOSTE. At the apex of the policy-formulating machinery is the Cabinet Committee on Science and Technology, chaired by the Prime Minister. It members comprise representatives from the Ministry of Finance (MOF), the Ministry of Education (MOE), the Ministry of Human Resource (MOHR), MITI, and MOSTE.

An advisory council, the National Council for Scientific Research and Development (NCSRD), which draws its membership from eminent scientists and experts from the public and the private sectors, supports the Cabinet Committee. The Council comprises 38 members. Out of this total, 25 (including chairman and secretary) are from public-sector agencies and 13 from the private sector. Apart from SIRIM, MIMOS and the 10 institutes of higher learning, there are other R&D institutions such the Palm Oil Research Institute of Malaysia, the Rubber Research Institute of Malaysia, the Malaysian Agricultural Research and Development Institute, the Forest Research Institute of Malaysia, Tun Ismail Atomic Research Centre, and the Institute of Medical Researches. Each institution and agency has its own mandates and priorities, and answers to different jurisdictions. As can be seen from the names of the institutes, almost all are established to carry out research in specific topics and almost half are related to the agricultural sector, although the research activities do incorporate industrial uses of the agriculture products. Only SIRIM is involved in research activities, and these are not only directly related to manufacturing sector but are also multi-topic in nature (Goh 1994:40-41).

The Malaysian Government has also undertaken initiatives to strengthen the linkages between PRIs and industry, and between universities and industry. They are encouraged to undertake activities such as contract R&D, joint research, consulting services, and commercialising of public sector research results. The Government also offers fiscal and financial incentives to stimulate public-private interactions and to encourage in-house R&D in private firms (Lim 1997:204). In some universities, industry liaison offices have been established to facilitate interaction with industry. For example, University Science Malaysia (USM) has strong ties with industry. USM consults industry on their curricula; and has established incubators on campus (Kondo 1995:8). The government hopes that interaction between private firms and public R&D institutes will raise private sector technological capability (Lim 1997:204).
Table 1: **Institutional Mechanisms for Technology Policy-Making in Malaysia**

<table>
<thead>
<tr>
<th>Technology Policy Areas</th>
<th>Institutional Mechanisms</th>
</tr>
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<tbody>
<tr>
<td>Policy-formulation and Advice</td>
<td>Cabinet Committee on Science chaired by the Prime Minister; Advisory Policy Body –National Council for Scientific Research and Development (NCSRD); Economic Planning Unit (National Development and Planning Committee); MOSTE (S&amp;T Division with MASTIC; (information) and Science Centre (awareness); MITI; (6) MOF; (7) MOE; (8) MOH; (9) MOA; (10) MOPI; (11) National Academy of Science (12) Ministry of Information (13) MIGHT (Malaysia Business Council);</td>
</tr>
<tr>
<td>Finance</td>
<td>Ministry of Finance on Fiscal Incentives (e.g. pioneer status, double taxation, etc); MITI; (3) MIDF; (4) MTDC; (5) MIGHT (3) Banking Industry;</td>
</tr>
<tr>
<td>Regulatory Framework and Enforcement</td>
<td>MITI – MIDA; (2) MOE; (3) MDTCA; (4) ML (Attorney-General’s Office);</td>
</tr>
<tr>
<td>SMI support</td>
<td>MITI in ITAF, VDP; Ministry of Entrepreneurial Development – MARA;</td>
</tr>
<tr>
<td>Main Industrial R&amp;D Institutes</td>
<td>(1) SIRIM; (2) MOE; (3) PORIM; (4) RRIM; (5) MIMOS; (6) IMR; (7) FRIM; (8) MARDI; (9) Universities; (10) TPM;</td>
</tr>
<tr>
<td>Human Resource Development</td>
<td>National Development Planning Committee (NDPC); EPU – Inter-Agency Planning Group (IAPG); PSD – State Economic Planning Units and State Human Resource Development Committee; MOHR; (5) MOE; (6) Ministry of Culture, Youth and Sports; (7) Ministry of Agriculture; (8) Ministry of Entrepreneurial Development; (9) Ministry of Primary Industry; (10) MARA; (11) Department of Statistics;</td>
</tr>
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</table>


The latest program to assist Malaysia’s effort to increase its technological competitiveness and acquire new technologies as well as promote public-private sector collaboration is the development of technology parks. The Federal Government has
established the TPM\textsuperscript{1} that epitomises the commercialisation of research and innovation (Goh 1994:46). The functions of this Park are as follows (Zahari 1988:5-6):

a) To facilitate technology transfer;

b) To offer sites for growth of small-scale industries using high technology;

c) To further develop high technology industries;

d) To commercialise research work;

e) To step-up research, invention and innovation;

f) To create employment opportunities;

g) To act as an information centre for industries; and

h) To facilitate the sourcing of financial investment and venture capital.

**Policies Framework to Promote Technology Development through Public-Private Sector Collaboration Strategy**

Apart from institutional changes, the Malaysian Government also introduced various policies to encourage the private sector to undertake greater R&D activities, in view of promoting technology development. However, prior to 1986 and despite its commitment to technology development, Malaysia had no explicit policy for industrial technology development. Nevertheless, technology development has always been conditioned by the presence of a number of laws related to economic development. For example, the Pioneer Industries Ordinance (1958) gave generous tax incentives and tariff protection to new industries. This Ordinance was superseded by the Investment Incentive Act (1968)\textsuperscript{2}. This law was meant to aid export expansion through the development of labour intensive and resource-based industries and to encourage the inflow of foreign investment in electronics, foods, textiles and so on (Zahari 1988:1).

It was only in 1975, the government launched the Industrial Coordination Act, to provide for coordination and the orderly development of manufacturing activities. This, according to Zahari (1988:2), indicated that prior to the 1975, industrialisation was promoted essentially through incentives and other supporting facilities, while post-1975 industrialisation was governed by other policy instruments which focus on other objectives but which nevertheless affected significantly the development of the manufacturing sector.

Despite the lack of specific policy for technology development, the Malaysian Government did establish the NCSRD in 1975. The objective of the NCRSD was to initiate the formulation of S&T policies, and to guide R&D towards meeting national objectives. However, the NCSRD was unable to perform its role properly. Therefore in 1982, the government established the Coordinating Council for Industrial Technology Transfer to formulate strategies for strengthening the process of technology transfer. This responsibility was eventually transferred to NCSRD in 1985 (Zahari 1988:3).

\textsuperscript{1} Chapter 8 discusses the performance of TPM in promoting technology development in Malaysia. Discussion is based on the survey carried out on the tenants of TPM.

\textsuperscript{2} This Act was revised in 1978.
It was only in 1985, with the launching of the First Industrial Master Plan (IMP) 1986-1995\(^3\), that the Malaysian Government began to formulate a policy specifically for technology development. This included the 1986 National Science and Technology Policy and the APITD in 1990. In addition, emphasis on the importance of technology was incorporated in Malaysia’s Plan documents such as the Fifth Malaysia Plan, 1985-1990, the Sixth Malaysia Plan, 1991-1995, and the Seventh Malaysia Plan, 1996-2000 and the Second Outline Perspective Plan, 1991-2000. The latest document on technology that has been adopted by the Malaysian Government is the 1995 World Bank/UNDP Reports on Technology Development to the year 2020 (Lim 1997:204).

The Action Plan for Industrial Technology Development (APITD)

The APITD was formulated and launched by the Ministry of Science, Technology and the Environment (MOSTE) in 1990. It was launched to complement the IMP. Five strategic thrusts were encompassed in the forty-two varied and wide-ranging APITD recommendations\(^4\) (MOSTE, 1990; Danaraj 1995a:5-6):

- **Leadership.** Providing leadership to strengthen the institutional and support infrastructure for industrial technology development.

- **R&D and the private sector.** To ensure widespread diffusion and application of technology, leading to enhanced market-driven R&D.

- **The launching-pad.** To build competence for specialisation in key emerging technologies.

- **The ultimate resources.** To strengthen the institutions and mechanisms for continual development and heighten technical proficiency of the human resource base.

- **Science and technology culture.** To increase science and technology awareness and appreciation, and to provide the most conducive climate for possible invention, innovation and technological advancement.

The Second Outline Perspective Plan (OPP2), Sixth Malaysia Plan and Seventh Malaysia Plan

Under OPP2, the Malaysian Government has set a target of ‘doubling the share of R&D in GDP by 2000, to at least 1.5 per cent, and to raising the share of private sector R&D substantially. Both the OPP2 and Sixth Malaysia Plan set out the strategy for the development of scientific and technological capabilities in Malaysia in line with the APITD. One of the strategies proposed by the Plans is to boost the low levels of local R&D by channelling greater public sector resources into industrial research and by enhancing the role of PRIs so as to make them more relevant to industry. Also, the Plans outline support for industrial technology development, which will be provided through

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\(^3\) The launching of the Industrial Master Plan (IMP) in 1986 by the Ministry of International Trade and Industry (MITI) indicated the Malaysian Government’s concern regarding the state of industrial development at that time. More importantly, the government is concern with the future role of the manufacturing sector. This sector was expected to become a major catalyst not only to enhance employment opportunities within the country but also to spearhead the country’s drive towards industrialised nation status by the end of the twentieth century (Anuwar 1992:1).

fiscal incentives, matching grants, soft loans and preferential credits. A further objective of the Plans is to promote greater inter-industry and inter-sectoral linkages by upgrading product quality of local firms with capability to become suppliers to Free Trade Zones (FTZs) (Asian Development Bank 1994:48-49).

Apart from enhancing the role of the PRIIs, the Malaysian Government will continue to support the private sector technology efforts. Under the Seventh Malaysia Plan, the private sector R&D will be directly promoted through a number of incentives, the provision of infrastructure and other forms of assistance. Incentives will be expanded to cover new areas such as acquisition of technology, commercialisation of research results from local agencies, transfer of technology, and development of human capital related to research (Government of Malaysia 1996b:440).

In addition, under the Seventh Malaysia Plan, the Government will also continue to provide direct equity financing early-stage technology projects as they evolve through the various stages of technology innovation from incubation and commercialisation, to market entry and expansion. The Government is also considering the setting up of a third securities board to provide for the listing of technology-oriented companies seeking to source investible funds. Besides these incentives, technology-based private sector companies will be encouraged to forge linkages with overseas investors in specific areas such as telecommunications, aerospace and pharmaceuticals as well as medical and chemical products. The Government is of the opinion that these areas can create specialised usages in a wide range of industries and as such provide immense investment opportunities (Government of Malaysia 1996b:441).

Also in the Plan, the Government announced that it would continue to invest in technology infrastructure to support the development of industrial technological capabilities. The government is hopeful that the expansion of TPM will provide facilities not only for small technology start-up companies but also for large enterprises undertaking product development and manufacturing process engineering. Besides TPM, the Kulim High-Tech Park in Kedah, the Composite Technology City in Melaka as well as the Subang Industrial Aerospace Park and Avionics Park in Selangor, are expected to assume an important role in building Malaysia's high technology base. These Parks are expected to house corporate, academic and Government tenants specialising in R&D activities related to electronics, telecommunications, new materials and biotechnology (Government of Malaysia 1996b:441). The Malaysian Government hopes this approach will create the requisite synergy among industry, universities and the public sector in upgrading and augmenting technology capability.

**Technology Transfer, Intellectual Property Rights and Technology Awards**

Other policies instituted to promote technology development in Malaysia are the Technology Transfer policy, the Intellectual Property Rights policy and the Technology Awards. Malaysia's technology transfer policy has been considered to be relatively liberal. The purpose of these policies is to promote the flow of modern technology into Malaysian industry. The policy requires all manufacturing projects licensed under the Industrial Coordination Act to obtain approval from MITI/Malaysian Industrial Development Authority (MIDA) for technology agreements involving foreign partners. The approval process takes into account of the type of technology involved, the levels
and methods of payment, other contractual terms and the training provided (World Bank/UNDP 1995:73).

It is recognised that intellectual property rights have an important role in ensuring the success of a technology development program. Kondo (1995) stated that Malaysia’s intellectual property rights protection system is fairly well established except for the treatment of the trade secrets. In line with APITAD, Malaysia has strengthened its management of intellectual property rights by being a signatory to the intellectual property divisions of the World Trade Agreement. Malaysia is also gearing up to have its intellectual property regime conform to the best practice existing in the industrialised countries (World Bank/UNDP, 1995). The Ministry of Domestic Trade and Consumer Affairs administers patents including utility models, trade marks and industrial designs. Currently, Malaysia does not examine industrial design. If industrial designs are registered in the United Kingdom, they are automatically registered in Malaysia. However, the current system is expected to change once the Ministry has completed its preparations for the change (Kondo 1995:19).

Awards are another form of incentive to promote technology development in Malaysia. The Malaysian Government has created several awards for this purpose. They include the National Science Award, the National Young Scientist Award and the National Technologists Award. As of 1992, there is a National Investor Award (Goh 1994:45).

**Tax incentives and Other Measures**

In addition to the above, the following are a summary of tax incentives and other measures that have been adopted by the Malaysian government to stimulate private R&D and to develop and reorient the technological infrastructure (MITI 1993; Hamzah 1993; Goh 1994):

- **Double tax deductions for skills and training for SMI:s and the 1 per cent training levy for large firms, and double tax deductions for moneys spent on approved training, infrastructure and equipment for approved training to upgrade the technology skills;**

- **Double tax deductions for R&D expenditures. Double deductions to be given to persons who contribute cash to approved research institutions; to companies that undertake to use the facilities and services of approved research companies or institutions; and on moneys spent on infrastructure and/or the conduct of in-house R&D.**

- **Five year tax exemption for new technology-based firms. Tax exemptions of five years to be given to approved companies or institutions established for the purpose of carrying out research for particular industries. Furthermore, dividends distributed by these companies would also be tax exempt in the hand of shareholders;**

- **The Human Resources Development Fund (HDRF) to finance training programs in industry**

- **Relaxation of rules on the employment of expatriates in R&D activities**
• The launching of the Industrial Adjustment Program for the wood, textiles and machinery and engineering industries in 1991, under which loans are provided at preferential rates to finance restructuring.

Hamzah (1993:9) outlined the following additional incentives introduced by the Malaysian Government to support R&D in Malaysia:

- Approved research companies carrying out R&D projects for holding/affiliate/associate companies are given a research allowance of 100 per cent of the qualifying capital expenditure incurred within a period of 10 years.°

- Buildings used by approved research companies or institutions carrying out research are henceforth allowed industrial building allowances; and

- Companies that carry out in-house R&D are allowed research allowance of 50 per cent on qualifying capital expenditure (related to R&D activity for a period of 10 years). This allowance will be granted at the statutory income level and abatement for each assessment year will be limited to 70 per cent of income.

**The Intensification of Research in Priority Areas (IRPA)**

The IRPA program was launched during the Fifth Malaysia Plan, 1985-90. The objective of this program is to focus R&D activities in areas which have potential for enhancing the national socio-economic position (National Council for Scientific Research and Development 1996:1). Although allocations under IRPA are mainly channelled to PRIs and universities, researches conducted by these institutions are expected to meet the need of the private sectors. A total of RM275.80 million was spent by 24 R&D institutions and universities for the implementation of 613 R&D programs during the Fifth Malaysia Plan. During the Sixth Malaysia Plan, a total of RM589.44 million was disbursed to 32 institutions and universities to undertake 776 R&D programs. For the Seventh Malaysia Plan, a two-fold increase in allocation of IRPA over that of the Sixth Malaysia Plan has been made (National Council for Scientific Research and Development 1996:1). To ensure the effectiveness of this program, the IRPA system has been redesigned under the Seventh Malaysia Plan to strengthen its implementation mechanism whereby the disbursement of IRPA grants will be made according to the following criteria (National Council for Scientific Research and Development 1996:1):

- The projects are of high national priority;

- The projects address the needs of Malaysian industry;

- Projects encourage collaborative efforts among research institutions; and

- Projects enhance R&D linkages between the public and private sectors.

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° This allowance will be abated from the statutory income, but abatement for each assessment year will be limited to 70 per cent of the statutory income. Holding/affiliate/associate companies concerned will not enjoy double deductions for payments made to such approved research companies (Hamzah 1993:9)
**Venture Capital Companies (VCCs)**

Venture capital is another policy to promote public-private sector collaboration in technology development. The venture capital industry is owned privately but promoted by the government. In Malaysia's case however, venture capital is available but it is still in its infancy and many firms in Malaysia do not know of its existence (Danaraj 1995a:19). Nevertheless, the first venture company was started in Malaysia in 1984 and by end-1995 there were 20 companies in operation with total funds of RM781 million (Government of Malaysia 1996b:486). Recognising the importance of venture capital financing, the Malaysian Government has introduced several measures to promote its development. These include the establishment of the Malaysian Technology Development Corporation (MTDC) in 1992, granting of special tax incentives, and relaxation of the qualifying criteria for VCCs. The MTDC provides financing facility in the form of venture capital and risk financing. By the end of 1995, MTDC had invested about RM54.6 million in 28 companies, covering activities such as consumer electronics, computer peripherals and software, and advanced manufacturing. The requirement for VCCs to invest 100 per cent of their funds in high-risk and new technology projects was relaxed to at least 70 per cent. In addition, the qualifying criteria that VCCs should not invest more than 10 per cent of their funds in venture companies and not more than 25 per cent in any one industry were abolished (Government of Malaysia 1996b:487).

**Industry Research and Development Grant Scheme (IGS)**

The Industry Research and Development Grant Scheme was introduced in March 1997 and opened to the private sector for funding of R&D projects. The objectives of this scheme are (http://mastic.gov.my):

- To encourage Malaysian companies to be more innovative in using and adapting existing technologies and creating new technologies, products and processes which will benefit the national economy
- To strengthen national competitiveness in the global markets
- To promote closer cooperation through joint ventures and institutional linkages between the private sector and public sector universities and research institutes
- To encourage strategic global and regional linkages in R&D to enhance indigenous technology development.

**Fiscal and Financial Support for the Small- and Medium-scale Industries (SMIs)**

In addition to the above, the Malaysian Government also provide fiscal and financial support for the SMIs. This is because the SMIs have an important role in promoting and sustaining the growth of the manufacturing sector in Malaysia. The 1992 Annual Survey of Manufacturing Industries indicated that the SMIs accounted for about 84 per cent of total manufacturing establishments in Malaysia (Government of Malaysia 1996b:281). The SMIs study carried out in 1994, found that the majority of Malaysia's SMIs were

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6 There were 12,108 SMIs with paid-up capital of less than RM2.5 million and employing between 5 to 75 full-time workers. Of this total, 10,400 are small-scale industries and 1,708 are of medium-scale (Government of Malaysia 1991a:281).
concentrated in food, beverages and tobacco, textiles and wearing apparel as well as leather industries (Government of Malaysia 1995d). However in terms of their contribution to the overall development of the manufacturing sector, the SMIs contribution to total value-added and employment was only about 28 per cent and 33 per cent, respectively. This indicated that they were relatively less effective compared to their larger counterparts (Government of Malaysia 1991:281).

In comparison with SMIs in other countries in the region, the contributions of Malaysia’s SMIs to total value-added and total employment has been less significant, as shown in Table 2. Danaraj (1995b:2) attributed this to the lack of financial strength among the majority of Malaysia’s SMIs to fund expensive product development projects within fast-moving technology frontiers and to tide themselves over during downturns in business cycles. The smallness of their size also constrained them from adopting advanced technology, employing more skilled workers, increasing their production capacity, expanding their market and enjoying economies of scale. Therefore, to improve their contributions to economic development, the Malaysian government found it necessary to provide industrial technology support infrastructure to SMIs. A wide variety of policies has been introduced to assist their technology acquisition and development (Danaraj 1995b:6).

Table 2: SMI Contribution to Value-Added and Employment (%)

<table>
<thead>
<tr>
<th>SMI</th>
<th>Contribution to Total Value-added</th>
<th>Contribution to Total Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>19.6</td>
<td>40.2</td>
</tr>
<tr>
<td>Singapore</td>
<td>22.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Taiwan</td>
<td>55.0</td>
<td>70.0</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>57.0</td>
<td>70.0</td>
</tr>
<tr>
<td>South Korea</td>
<td>38.0</td>
<td>66.0</td>
</tr>
</tbody>
</table>


The Industrial Technical Assistance Fund (ITAF)

ITAF is one of the schemes launched by the Malaysian Government to assist the SMIs. It was launched in 1990, and aimed at enhancing the SMIs into a progressive, high quality and modern industries capable of providing support facilities to the large industries in Malaysia (Hamzah 1993:7). This fund was set up with the purpose of providing grants to SMIs to undertake activities such as feasibility studies, product development and design, quality and productivity improvement, and marketing. It is an integrated and comprehensive scheme administered by MITI and the assistance is given in the form of a matching grant whereby 50 per cent of the project cost is borne by the government. Priority is given to the SMIs which manufacture product(s) promoted under the Promotion of Investment Act 1986 (Hamzah 1993:8).

Modernisation and Automation of SMIs with linkages with MNCs

Apart from ITAF, MITI in collaboration with Malaysian Industrial Development Finance (MIDF) has developed a scheme aimed at assisting the SMIs to modernise their machinery and equipment. However, this scheme is not targeted at all SMIs but only
those with linkages MNCs. The aim is to accelerate the linkages between them. Under this scheme, the SMIs are given subsidies on plant and equipment purchases (Danaraj 1995a:19). Firms are eligible for low-cost financing of up to 75 per cent of machinery costs. MIDF also assists firms to raise working capital if required (Danaraj 1995b:10)

**Vendor Development Programs (VDP)**

The VDP is modelled after the Japanese *keiretsu* system. VDP evolved out of a 1983 input-output analysis of inter-industry linkages which showed that only 40 per cent of inputs to large non-resource based industries were from domestic sources (Danaraj 1995b:9). Under this program, a large firm called ‘an anchor firm’ provides technical assistance to its vendors to improve their technological levels as well as markets. Anchor firms receive no financial assistance but vendors under this program receive financial assistance from Government in the form of soft loans and advances against payments as well as technical assistance (Kondo 1995:11; Danaraj 1995b).

**Technology Development Program for SMIs**

As of 1996, the SMIs are expected to be further assisted by special technology development programs. Under the Seventh Malaysia Plan, an initial budget of RM100 million will be allocated to the SMIs, as shown in Table.3. Priority is accorded to the build up of local technology capability through technology absorption, modification and adaptation, particularly in the development of improved as well as innovative products, processes and services (Government of Malaysia 1996b)

Table. 3: Development Allocation for Science and Technology, 1991-2000

<table>
<thead>
<tr>
<th>Programs</th>
<th>1991-95</th>
<th>1996-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct R&amp;D</td>
<td>567.1</td>
<td>1,000</td>
</tr>
<tr>
<td>Technology Development for SMIs</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td>Technology Acquisition</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td>Commercialisation of Technology</td>
<td>-</td>
<td>100.0</td>
</tr>
<tr>
<td>S&amp;T infrastructure and Development</td>
<td>629.2</td>
<td>1,749.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,196.3</td>
<td>3,049.0</td>
</tr>
</tbody>
</table>