CHAPTER 3
THE ROLE OF MITI

3.1 Introduction to MITI

"Japan's Ministry of International Trade and Industry (MITI) was established in May, 1949 from the union of the Trade Agency and the Ministry of Commerce and Industry in an effort to curb postwar inflation and provide government leadership and assistance for the restoration of industrial productivity and employment. Japanese economy experienced changes after its post-war period due to many factors, such as the trade and capital liberalization; the high growth years; the two oil crises; yen appreciation; the bubble-economy years, and followed by the collapse of the bubble. In every movement of Japanese development, the involvement of MITI is significant, especially during the post-war economy over the last half-century.

MITI covers a wide range of industrial fields, such as basic industries, machinery and information industries and consumer goods industries. Besides, it is also responsible of matters concerning foreign trade, high technologies, environmental protection, industrial location, energy and other areas. MITI is also involved in the Japanese multi-lateral international trading system, where it has given support for Asia especially during economic recession.

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Since the 1960s, MITI has prepared its economic and industrial vision for the next decade. It outlines both domestic and international economic and social prospects and the direction of the Ministry’s trade and industrial policies.

At the time MITI was founded in 1949, it had total employees of 21,199\textsuperscript{15}. However, MITI seems to be small and had only around 6,000 civil servants total in the mid-1980s (Grant, W., 1995). Its personnel are all highly educated, and recruited from among the best and brightest graduates from the best Japanese universities each year. The top recruits at each year are often sent abroad to the United States and Europe’s best universities to further postgraduate studies, especially during their early stage of careers.

The funds which MITI has direct control are not very large either. Out of $475 billion in outlays of the various agencies of the Japanese government in fiscal year 1990, MITI’s share was only about $5 billion or one percent (Appendix 3.1) (Grant, W., 1995). Broadly speaking, this 1% share is only slightly larger than the courts and the Ministry of Justice spent, and far smaller than the individual agency outlays of the Health and Welfare, Education, Agriculture, and Construction ministries.

"MITI and the other ministries enjoyed a range of other industrial promotion devices including tariffs, quotas, preferential commodity taxes on national products, import restrictions based on foreign currency allocations and foreign currency controls, supply of low-interest funds to targeted industries, subsidies, exclusion from import duties of designated critical equipment, licensing

of imported foreign technology, providing industrial parks and other infrastructure structure” (Nester, W.R., 1991).

MITI’s intervention tends to follow a curvilinear trajectory, that is extensive involvement during the early stages of an industry’s life cycle when market demand is still small, falling off significantly as the industry reaches its peak, and rising again as industry loses comparative advantage and faces the problems of senescence, saturated markets, the loss of market share and excess capacity.

3.2 The Objectives of MITI

"MITI’s primary objective is to encourage Japanese participation in the world economy by promoting the development of export industries. In other words, MITI is responsible in strengthening the country’s industrial base. It has provided industries with administrative guidance and other direction, both formal and informal, on modernization, technology, investments in new plants and equipment, domestic and foreign competition18”.

MITI’s main mission in the Japanese economic development is to establish and implement Japanese industrial policy. In other word Japan’s economic miracle is due to the guidance provided by MITI. MITI’s responsibilities include: (Nester, W.R., 1991).

Consensus building and the articulation of “long-term” visions for those industries under its control;

The setting of sectoral priorities;

The allocation of subsidies and facilitation of financial flows to priority sectors;

Adjustments of industrial structure;

Infant industry protection;

Investment guidance in certain industries and under certain conditions;

Regulation of excessive competition;

Downside risk reduction and cost diffusion;

Export promotion and mediation of trade conflicts.

MITI’s policy objectives vary according to the competitive position of a business (Magaziner, I.C. & Hout, T.M., 1980). For instance, during the rapid growth phases of development, MITI’s policy will be more towards protection from foreign competition. On the other hand, for businesses in competitive decline, MITI plays more active role, especially in facilitating capacity reduction and rationalization.

3.3. The Structure of MITI

The organization chart of MITI reflects the overall structure of MITI (Appendix 3.2). The Ministry contains several semi-independent agencies,
including the Agency of Natural Resources and Energy, the Patent office, and the small and Medium Enterprise Agency. However, only MITI’s Tokyo headquarters is involved in international trade policy formulation (Higashi, C.1983).

MITI’s organization is based on a matrix-type of structure, which covers both functional with sectoral and subsectoral divisions. Officials call the functional breakdown as Yokowari (“horizontal breakdown”), and the sectoral breakdown as Tatewari (“Vertical breakdown”) (Higashi, C.1983). The horizontal breakdown involves the bureaus of International Trade Policy, International Trade Administration, Industrial Policy, and Industrial Location and Environmental Protection, which mainly involve in planning the commercial and industrial policies. On the other hand, the vertical breakdown includes the bureaus for Basic Industries, Machinery and Information Industries and Consumer Goods Industries (Higashi, C., 1983).

MITI uses several key committees. Of these the Hōrei Shinsa linkai (HISI) (Law and Ordinance Review Committee) is the most substantive (Higashi, C., 1983). It includes representative of all MITI bureaus and, as such, reviews all proposed policies or policy changes before these can be adopted by MITI.

MITI is advised by a large number of councils in its decision-making\(^\text{17}\). MITI maintains 33 councils (Shingikai) managed by experts and covers almost all the industrial sectors and sub-sectors under its jurisdiction (Higashi, C., 1983). Councils are organized either along industry lines to deal with specific industries,

\(^{17}\) The best known council is Sangyo Kozo Shingikai (the council of Industrial Structure), which formulates long-term industrial structure polices.
namely mining, petroleum, and aircraft, or along structural lines to deal with an important aspect of the economy, such as industrial structure, industrial technology, international trade insurance, and small and medium enterprises.

3.4. Industrial Policy in Japan

MITI is the most important institution in Japan's industrial policymaking process. MITI's influence in Japanese industrial policy is broad. A senior MITI official captures the essence of Japan's industrial policy as follows:

"MITI decided to establish in Japan industries which require intensive employment of capital and technology. industries that in consideration of comparative cost of production should be the most inappropriate for Japan, industries such as steel, oil; -refining, industrial machinery of all sorts, and electronics .... From a short-run, static viewpoint, encouragement of such industries would seem to conflict with economic rationalism. But, from a long-range viewpoint, these are precisely the industries where income elasticity of demand is high, technological progress is rapid and labor productivity rises fast.

It was clear that without these industries it would be difficult to employ a population of 100 million and raise their standard of living to that Europe and America with light industries alone; whether right or wrong (in a neoclassical economic sense). Japan had to have these heavy and chemical industries.... (The
government) has been able to concentrate its scant capital in strategic industries\textsuperscript{18}'' (Nester, W.R., 1991)

The MITI has been assigned to fulfill the following polices:

- Shaping the structure of industry and adjusting dislocations that arise in transition;
- Guiding the healthy development of industries and their production and distribution activities;
  Managing Japan's foreign trade and its commercial relations;
- Ensuring adequate raw materials and energy flows to industry; and
  Managing particular areas, such as small business, patents, industrial technology, etc.

The importance of MITI's industrial policy can be seen more deeply in steel, automobile and computer industries (see Chapter 4).

3.5. MITI's Challenging Role Following the Oil Crisis

The high growth era of Japan showed a sign of declining during the early period of 1970s, but it was the first oil crisis of 1973 that really made the Japanese economic performance worsen. Table 3.1 shows that the GNP drops by 0.2% during 1973 to 1974 following the 1973 oil shock. The second oil crisis happened

\textsuperscript{18} Quoted in OECD Annual Report, Paris, 1972
in 1979-80. Thus, after the two oil crises and sharp appreciation of the yen, Japan’s less energy-intensive manufacturing industries shares increased gradually in the world export markets (Odagiri, H. & Goto, A., 1996).

After the first oil crisis hit in October 1973, the Japanese government moved quickly to impose direct controls over prices and production. The Law Concerning Emergency Measures for the Stabilization of the People’s Livelihood and the Petroleum Supply and Demand Normalization Law were introduced to the Diet in early December and passed by year end (Vestal, J.E., 1993). Through these laws, MITI had the power to set prices for specific designated industries. Despite, MITI also has the authority to demand reports from wholesalers and retailers. This ensures that no one else is involved in marketing the goods.

Due to the oil crisis, MITI had come up with energy related policies. MITI is an administrative agency in charge in implementing national energy policy. MITI implements its energy-related responsibilities in large part through the New Energy and Industrial Technology Development Organization (NEDO)\(^9\). This quasi-government agency receives its funding from the government. NEDO project falls under the supervision of MITI’s executive in one year and then to an executive of the Tokyo Electric Power Company for the following year.

TABLE 3.1: Japan’s GNP During the 1973 Oil Crisis

<table>
<thead>
<tr>
<th>Year</th>
<th>GNP Real (at 1985 Prices) (¥100 million)</th>
</tr>
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<tbody>
<tr>
<td>1967</td>
<td>1,266,463</td>
</tr>
<tr>
<td>1968</td>
<td>1,428,570</td>
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<tr>
<td>1969</td>
<td>1,601,010</td>
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<tr>
<td>1970</td>
<td>1,730,287</td>
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<tr>
<td>1971</td>
<td>1,819,459</td>
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<tr>
<td>1972</td>
<td>1,983,252</td>
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<tr>
<td>1973</td>
<td>2,077,445</td>
</tr>
<tr>
<td>1974</td>
<td>2,072,992</td>
</tr>
<tr>
<td>1975</td>
<td>2,156,318</td>
</tr>
<tr>
<td>1976</td>
<td>2,243,215</td>
</tr>
<tr>
<td>1977</td>
<td>2,350,044</td>
</tr>
<tr>
<td>1978</td>
<td>2,470,612</td>
</tr>
<tr>
<td>1979</td>
<td>2,606,053</td>
</tr>
<tr>
<td>1980</td>
<td>2,688,179</td>
</tr>
</tbody>
</table>

Source: Economics Statistics Annual 1997, Research and Statistics Department, Bank of Japan

The way in which energy is used in Japan and the source of it changed drastically over the period since World War II. Before, the crisis, the use of energy increased at the dizzying rate of nearly 25% a year (Heenan, P., 1998). Consumption grew from 41 million tonnes of oil equivalent in 1950 to 340 million tonnes in 1973 (Heenan, P., 1998). During the 1973, MITI had established the Agency for Natural Resources and Energy to diversify the energy supplies and reduce the dependence on oil. Though the agency was established by MITI before the increase of oil prices, but soon it became the main vehicle for government in an effort to organize the national response to the oil shock, especially after the OECD had rejected Japan’s proposal for multilateral which can dwindle oil supplies among the organization members.
MITI also promotes energy efficiency, the introduction of new energy sources, and the development and the use of nuclear power. It will also work to guarantee safe energy through the development of energy-related and environmental technologies, and actively address global environmental problems. In other word, MITI will strengthen international efforts to address problems related to energy and the global environment by working to coordinate the efforts of developing countries and other nations.

3.5.1. MITI's Plans for 1978 following the Oil Crisis

MITI's plan for 1978 is the point to solutions for Japan's problems (Business Asia, 1977). MITI's plans do not stop at the first oil crisis. MITI's plans for business during the 1978 help support the economy in the event of another crisis in 1980s. The goal is to assure dependable oil supplies and diversify the sources and types of non-oil energy conserve consumption. The conservation of energy pursued through legislation and incentives. MITI proposed an Energy Conservation promotion Bill provide energy savings equipment to businesses (Business Asia, 1977). At the same time the ministry makes sure whether a substantial funds pumped into new research on energy conservation technology.

To diversify the types of energy that Japan uses, MITI encouraged the use of coal and liquefied natural gas. Oil stock piling also been pursued by MITI. MITI proposed to establish major oil storage facilities at Niigata and Nishiumi, with the site purchase and construction costs subsidized by the government

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(Business Asia, 1977). Efforts have been made in order to tie down secure supplies of other raw materials. These will include new incentives for Japanese investment in resource rich countries and the development and use of new mining technology, including sea-bed mining. Stockpiling of copper, lead, zinc, and aluminum are also being pursued (Business Asia, 1977).

3.6. MITI's Intervention in the Declining Industries

Any growing economy has its declining industries, and Japan is no exception. Prior to 1978 only ad hoc government measures were taken to facilitate adjustments in declining industries. However, the first oil crisis (1973-1975) adversely affected so many industries that a comprehensive legislation for assistance became necessary. MITI adopted additional policy measures to facilitate structural adjustment and capacity reduction in the declining industries (Hsu, R.C., 1994). Consequently, the 1978 Law of Temporary Measures for Stabilization of Specific Depressed Industries was enacted. This law authorizes MITI to formulate after consultation with advisory committees, a "Basic Stabilization Plan" for the specific industries (Hsu, R.C., 1994).

Also, the Depressed Industries Law was extended in 1983 to provide financial incentives to declining industries to reduce capacity (Hsu, R.C., 1994). For declining industries, such as the textile and shipbuilding industries, administrative guidance has been used to encourage shift into new product lines.
3.6.1. MITI’s Plans for 1978 – An Effort to Protect the Declining Industries

MITI’s tactics focus on the textiles and open-hearth steel. MITI offered a package of production cutbacks, price adjustments, loan, and tax breaks to encourage such firms to discard their excess capacity and move into new lines of business. For relatively healthy business, MITI proposed new system of investment tax credits encourage more business spending. MITI also put a bid of key role in the administration of Japan’s new antimonopoly law.

In an effort to help the declining industries Japan’s industrial policies emphasize more on reduction of capacity through the implementation of cartel. The Diet passed the law to form cartels in which MITI has the authority on it. MITI came up with an agreement pertaining the cartels as firms are requested to reduce capacity in order to bring supply more closely in relation to the demand. This reduction of capacity helps to stabilize the prices and allows all producers to carry out necessary adjustments and continue to stay in the business.

3.7 Major Policies and Strategies Implemented by MITI

3.7.1 MITI’s Main Policy Tool

MITI’s main policy tool, the so-called “administrative guidance”, or Gyoosei Shidoo, is the discretionary method of inducement to industry that ranges from informal persuasion to the issuing of ordinances that have the force of law. MITI and the other ministries have used a wide range of powers to implement
industrial policy. Perhaps the most significant industrial policy tool at the
government’s command was “window guidance” (*madoguchi no shido*). MITI has
traditionally used finance and tax measures, subsidies, and access to government
information as tools to enforce its administrative guidance as part of its industrial
policy.

Administrative guidance is the fundamental part of government-business
relationship in Japanese economy. Businessmen used to feel uncomfortable with
the pressure given by MITI. However, they began to understand that in long term
this will benefit them. Firms vary in their position, but always regard that
administrative guidance could guide them and be part of the price the business
pays for the valuable services of an economic bureaucracy.

The “administrative guidance” is an effective tool and important for the following
reasons:20:

➢ As MITI deals with diversified and rapidly changing industries, its
administrative guidance is more flexible, timely, and effective that legislation
that cannot be quickly completed or changed.

➢ As the Japanese economy was heavily regulated before, during, and after
World War II, MITI has many instruments with which to guide besides laws
and ordinances. This makes its “carrot and stick” approach which during the
post World War II years included licensing, allocation of quotas, and control
over foreign exchange very effective.

Policy Formulation, p.40.
> As Japanese industries have always suffered from excessive competition, moderation and coordination by a reliable and authoritative third party has been necessary to promote growth and profit potential.

> MITI's historical role as a caretaker, coordinator, and leader has helped establish the close government business relations that are reinforced by MITI's formal network of Shingikai (councils), informal contacts, and exchange of personnel.\(^{21}\)

> MITI recruits and trains competent and reliable personnel. This has facilitated the effectiveness as well as the acceptance by industry of its guidance, coordination, and arbitration.

3.7.2. Actual Industrial Policies by MITI

At each stage of the Japanese economic development, strategic industries play a major role, particularly during the postwar period. At every step of the development of Japanese economy there will be at least one or two strategic industries. Through the strategic industries, Japan has the capable of exporting goods to the world market. For an example during the 1950s, textile industry drives the total Japanese exports to a much higher level. In spite of this, the ship building industry also became the most important exporting sector in the 1960s. The iron and steel industry became dominant in the development of the Japanese

\(^{21}\) The exchange of personnel between MITI and private enterprises is not necessarily a one-way process, like Amakudari (retirement of officials to industry), despite the lack of lateral entry. MITI accepts future business executives in temporary positions at the entry, section chief, and deputy director levels. Such exchanges are rewarded by immediate and long-term personal contacts, which contribute to the promotion of government business relations.
economy in the 1970s. During the 1980s, Japanese economy concentrated its export effort in two industries, such as automobiles and electronic appliances. These industries contributed to Japanese economy as a major strategic industry.

Until the middle of the 1980s, the core of the development of the Japanese economy was in the manufacturing sector, from which all of the Japanese strategic industries emerged. However, in the 1990s, the Japanese economy was not able to find a new strategic industry; it has been merely riding on the momentum from the past.

Basically there were three stages in the development of the actual industrial policies that was adopted by MITI.

A. Stage I: Industrial Policy during the Reconstruction Period (1945-1955)

The reconstruction period in Japan is during the ending period of the war. During this time, focus was given more on rebuilding the steel and coal industries. This stage can be evaluated as a successful preparation for the future of heavy and chemical industrialization. This is the stage when Japanese economy was recovering from the war. Due to the war, Japan suffered from shortages of productive capacity, and as a result the foreign reserves now needed to import raw materials and consumer goods. In conjunction with this, MITI introduced few policies during this stage, such as the tax provisions, Fiscal Investments and Loans Program (FILP) or "Zaisei Toyushi Keikaku" (Ito; T., 1997).
The Loans Program was implemented mainly for the purpose of labor-saving machines and modern plants. FILP is the single most important financial instrument for Japan’s economic development since 1953. Both the official of MOF and the Industrial Capital Section of MITI’s Enterprise Bureau constructed the investment budget annually. When FILP was formed, the Development Bank authorized to borrow from its funds, and then to make loans to industrial customers who had been approved by MITI. Also, at this stage the “rationalization” (Gorika) plans became the center of policy\textsuperscript{22}.

Policies at this point were conducted within the framework of a market economy with tax incentives and financing by the Japan Development Bank aimed at key industries\textsuperscript{23}. The steel industry benefited from the rationalization plans and became an important export industry (refer chapter 4). The coal industry became unable to survive without subsidies. In general, industrial policies succeeded for industries with scale economies, such as steel, and failed for industries without scale economies, such as coal.

During the 1950s and early 1960s, MITI had various effective “tools” to ensure the implementation of its policies in order to nurture the growth of the targeted industries (Grant, W., 1995). Among these was control over Foreign Exchange where, MITI has the power to cut off the access to foreign exchange of any firm that it felt was wasting valuable resources (Johnson, C., 1982). Broadly speaking, a company who wish to do business abroad had to play ball with MITI

\textsuperscript{22} In Japan “rationalization” means a cost-cutting effort, with a strong connotation of automation (labor-saving technology) and relocation or layoff of workers. Hence, in the 1960s many labor unions fought for “anti-rationalization.”

\textsuperscript{23} The steel, coal mining, shipbuilding, electric power industries, and so on.
in order to get the requisite foreign currency to operate businesses. Also, throughout this 1950s, Japan’s policy-making regime was characterized as “bureaucratic-led corporatism” where MOF and MITI worked closely together to formulate and implement industrial polices with the industrialists and Liberal Democratic Party (LDP). Although the policy making team of bureaucrats, politicians, and industrialists varies from one policy to the next, MITI, and MOF, and the Economic Planning Agency (EPA) were always involved.

B. Stage II: Industrial Policy during the high Growth and Liberalization (1955-1973)

During the 1960s, Japan was integrated into the international economic system. In order for Japan to be in the international economic system, Japan had to meet certain membership requirements related to the General Agreement on Tariffs and Trade (GATT), International Monetary Fund (IMF) and Organization for Economic Cooperation and Development (OECD) (Ito, T., 1997). In other word, Japan need to liberalize, or at least show a schedule for liberalizing, its import quotas, tariffs, and capital controls. Therefore, the objective of industrial policy at this stage changed where the industrial structure need to be more strengthened within a time frame. In conjunction with this, MITI has organized and merged big companies into even bigger ones, and coordinated the fixed capital investment to avoid overcapacities. MITI also coordinated small and medium size companies and established a comprehensive energy policy. MITI

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24 Japan became a member of the OECD in 1964 and an Article 8 member of the IMF in April 1964.
maintained that small and medium sized companies cannot survive in the foreign competition if left alone.

As a result, in the 1960s, MITI's main focus was on fostering heavy and chemical industries (Komiya, R. & Okuno, M. & Suzumura, K., 1988). In other word, MITI embarked upon a program to reconstruct Japan by emphasizing the development of heavy industry, such as petrochemicals, steel, and shipbuilding. For strategic industries such as the automobile industry and the computer related fields, the protective trade measure was taken in order to strengthen the international competitiveness.

Although MITI had developed industrial policies at this stage, the relative power of both MOF and MITI declined as Tokyo had to discard some of its more obvious trade controls over foreign exchange, capital, and investment in return for joining the OECD, as industries became more wealthy and established, and as LDP politicians began acquiring expertise in particular policy areas (Nester, W.R., 1991)

C. Stage III: Industrial Policy during the period of Diversification (1973 to Present)

The focus of MITI in this stage was mainly in promoting knowledge-intensive industries. In this era, the Japanese economy faced major problems due to the oil crisis. As such, short-term adjustment to the disequilibrium engendered by the oil crisis was much more important. Industrial policy during this time was more favorable to the declining industries and high-technology industries. In this
stage MITI helps to transfer resources from depressed industries to promising ones.

Broadly speaking, Japan's industrial policy has developed and changed over time especially in the nineteenth century when the bureaucrats groups are the one who presided over Japan's modernization process and "catching up" with the West. The Japanese government played a vital role in the economic development compared to countries like the United States and Britain, where only "laissez faire" type of economic policy and ideologies were dominant (Grant, W., 1995).

This was the stage during the late 1970s, and 1980s, where industrial policy at this point had led Japan into a conflict with other countries (Ito, T., 1997). The first trade conflict happened in 1971 during a textile agreement negotiation between United States and Japan (Ito, T., 1997). Followed by this in 1980s, trade conflicts became more frequent and intense (Ito, T., 1997). Thus, MITI's policy at this stage is more on a prevention method on trade conflicts and to control the damage from the conflicts.

The need of energy sources is also a crucial factor during this stage. In the 1980s, energy security was made a priority and MITI placed greater emphasis on technology with a view toward establishing creative knowledge-intensive industries.

This is the low growth era and subject to protect the affected industries. This led to excessive production capacity and fell into a structural recession where the reconstruction seemed extremely difficult. The Law on Extraordinary Measures for the Stabilization of Specific Industry established in 1978 had an
intention to assist these structural recession industries in shaping up old facilities and scrapping excessive facilities. As the Law became a time limited, the Law on Extraordinary Measures for the Structural Improvement of Specific Industry was legislated in 1983 instead, which was continuously to progress the adjustment support polices for these industries.

During this stage, there is a drastic transformation of industrial policies in order to make the domestic industries capable in facing the international competition, and also to fulfill the objectives rather than just the growth. The government's new objectives now are to control pollution, and the implementation of the anti-trust policies. Japanese industrial policy at this stage had moved to the market mechanism and deregulation. Though there is a transformation of policies, especially in the domestic sectors, the industries within the international competition often complain on government's drastic intervention.

3.7.3. Trade Policy

Of all the Japanese government agencies, MITI has the primary responsibility for trade policy formulation. In the context of trade policy, MITI in collaboration with other bureaus always ensures a broad perspective on domestic

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26 Ibid.
27 Between 1971 and 1973 a series of court cases known as the “big four pollution cases” – all of which were decided against industry – raised Japan’s environmental consciousness and shifted Japanese public opinion away from the pursuit of economic growth at any social cost (Komiya & Okuno & Suzumura, 1988)
and international economic policies with a careful attention to individual industries. For example MITI has coordinated trade policy, with the Economic Planning Agency, the Bank of Japan, and the ministries of agriculture, construction, forestry and fisheries, health and welfare, posts and telecommunications, and transportation. In a recent development MITI also cooperated with the Agency for Industrial Science and Technology (AIST) where both the agencies plan to combine all offices responsible for managing research projects and open to the international participation into a single administrative entity that would be organized into eight divisions such as follows:

1. New Materials
2. Bio-Technology
3. Electronics, Information processing, and Communication
4. Machine technology
5. Aerospace
6. Medical and Welfare
7. Human, Life, and Society
8. Natural Resources

Through the Japan’s Anti-Monopoly Law, MITI has given the authority to supervise cartels that operate through the Industry Association. These cartels are limited in duration and must serve specific purposes such as:

- Long-term rationalization of production;
- Orderly reduction of excess capacity;
- Promotion of vertical integration;
- Short-term production allocation
- Export price floors during trade crises.

Japanese government went into trade liberalization during the 1960s; just before Japan entered into the IMF (1964). The development of trade friction with United States over textiles, color television, and iron and steel led Japan to further proceed with trade liberalization at a faster pace, especially during the late 1960s and early 1970s. The items affected by trade liberalization were buses and trucks (1961); color television (1964); passenger cars (1965); color film (1971); high quality electronic calculators and cash registers (1973); integrated circuits (1974); electronic computers and related equipment (1975) (Itoh, M. & Kiyono, K., 1988).  

Until the early 1980s, MITI had been the central actor in international trade negotiations (Mikanagi, Y., 1996). This is because industries under MITI’s jurisdiction, such as steel and automobile, successfully expanded their exports,

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29 Industry Association are concerned with policy toward individual sectors. This association maintains a working relationship with MITI’s industry bureaus and divisions.
which in turn caused trade friction with other countries. For instance, MITI led trade negotiations on textiles in 1970 to 1971, steel in 1977, and automobiles in 1980 to 1981 (Mikanagi, Y., 1996). In addition to the fact that MITI frequently became the most important international trade negotiator, the increased scholarly attention to MITI’s industrial policy created a belief that MITI was the only important trade policy ministry in Japan (Mikanagi, Y., 1996).

However, it took considerable time for these items to be liberalize, especially when MITI started to promote these industries. For instance, the government intention in promoting the automobile industry was translated into protection policy in 1952 and MITI came up with “People’s Car Promotion Guidelines” in 1955.

3.7.3(a) Export Policies

Export promotion has been an important factor in Japanese government policy. MITI realized that Japan need to import in order to increase the growth. Therefore, Japan needs to generate exports to pay for those imports. However, after the war, Japan faced difficulties in paying off the imports and this led to trade deficits. In order to overcome the trade deficits, MITI recognized that export promotion is a vital policy that should be implemented.

The export promotion has two folds. The first is to develop world-class industries that can substitute for imports and then compete in international markets. The second fold is to provide incentives for firms to export. During the
end of 1950s, the Export-Import Bank of Japan (EIBJ) was first established. The purpose of this bank is to supply long-term funds to finance the export plants (Komiya, R. & Okuno, M. & Suzumura, K., 1988).

Though MITI had implemented the export promotion policies, Japan had to drop its major export incentive, as it had to comply with IMF procedures during 1964. Also the export promotion policies diminished, where trade deficits end during the mid 1960s. All export tax incentives were eliminated in the 1970s\(^{31}\). Apart from MITI, Japan External Trade Organization (JETRO) also lose its actual function of assisting smaller firms with overseas marketing to import promotion in other activities. During the 1980s, Japan still uses industrial policy to promote the growth. However, export promotion measures were no longer part of industrial policy.

### 3.7.3(b) Import Policies

Japan started its postwar period with heavy import barriers, where all products were subject to government quotas. Many products have to go through a high tariff. MITI had the authority over the allocation of foreign exchange that companies needed to pay for any import. For instance, MITI had the right to cut the access of foreign exchange to any firm that did not utilize properly the valuable resources. These policies were important especially during the down turn

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of Japanese industry, which have trade deficits. However, by the late 1950s, the IMF and GATT strongly pushed Japan to be flexible in the payment systems. Therefore, during the 1960s, the government implemented “a policy of tariff rates, freeing transactions in foreign exchange, and admitting foreign capital into Japanese industries”32. This phenomenon continues through the 1980s.

3.7.4. Technology Policy

Technological progress has been called the engine of growth. Towards the end of the 1970s, MITI’s role in policy implementation moved to development in technology policy. Japanese technology parity with the west ended Japan’s ability to rely on Americans and Europeans when Japan joined the GATT and OECD. MITI’s task now is to make winners. Therefore, MITI’s attention turned to promoting high technology industries, especially in semiconductor and computer industries.

To assist in developing new technologies, the government provided subsidies in the form of low-interest loans through the Japan Development Bank (JDB). The government also granted subsidies through funds administered across most ministries though the Science and Technology Agency and MITI had the most important role in dispensing these funds. Of government funds specifically used to promote science and technology, 52% were administered by Science and Technology Agency, followed by MITI, which carried 18% administration

(Vestal, J.E., 1993). Despite the smaller budget, MITI had more flexibility in granting subsidies to projects and companies.

Table 3.2 summarizes MITI's large-scale research projects in the 1970s. Large-scale projects were specially created to develop new technologies. The government created this system in order to reduce the burden of providing the funds needed to develop the technology, which was not affordable to the private sector. This system was also developed in order to compete with Western technology. Among the projects that were conducted by MITI, the most well known was the Large Scale Integrated Circuit (LSI).

In the computer industries, MITI did not adopt any industrial policy on personal computers (PC) that started in the early 1980s. The Japanese PC industry was put into competitive environment, although MITI did not advertise as such. Probably, MITI was too busy with the LSI industry to extend protection to the emerging PC industry. MITI may have considered LSIs as an indispensable element in almost all industrial activities, whereas the PC industry as a branch application of LSIs. Also, MITI may have adopted no industrial policy for the PC industry since PC was considered to be a miniature of mainframes, which were the core of computers products.
### TABLE 3.2: Principal MITI-Sponsored R&D Projects in the 1970s

<table>
<thead>
<tr>
<th>Project Breakdown</th>
<th>Period</th>
<th>Total funding (yen bn.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Large Scale Projects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattern information processing systems</td>
<td>1971-81</td>
<td>22.1</td>
</tr>
<tr>
<td>High Temperature reduction process for manufacturing steel</td>
<td>1973-81</td>
<td>14.0</td>
</tr>
<tr>
<td>Electric car development</td>
<td>1971-7</td>
<td>5.7</td>
</tr>
<tr>
<td>Motor vehicle traffic control technology</td>
<td>1973-9</td>
<td>7.4</td>
</tr>
<tr>
<td>Manufacture of olefin from heavy oil</td>
<td>1975-83</td>
<td>14.2</td>
</tr>
<tr>
<td>JET engines for aircraft</td>
<td>1971-82</td>
<td>19.7</td>
</tr>
<tr>
<td>Resources recycling systems</td>
<td>1972-87</td>
<td>13.0</td>
</tr>
<tr>
<td>Desalination technology</td>
<td>1969-77</td>
<td>7.0</td>
</tr>
<tr>
<td>Deep-water oil extraction technology</td>
<td>1970-4</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>II. Energy Development</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar power</td>
<td>1974-</td>
<td>8.4</td>
</tr>
<tr>
<td>Thermal energy</td>
<td>1974-</td>
<td>8.4</td>
</tr>
<tr>
<td>Coal liquification/gasification</td>
<td>1974-</td>
<td>4.1</td>
</tr>
<tr>
<td>Hydrogen manufacture, storage transportation technology</td>
<td>1974-</td>
<td>3.2</td>
</tr>
<tr>
<td><strong>III. Labour-saving/Energy-Saving Technology</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat-recycling technology</td>
<td>1976-81</td>
<td>2.1</td>
</tr>
<tr>
<td>Magnetohydrodynamic generation (stage II)</td>
<td>1976-83</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total MITI expenditure related to R&amp;D</strong></td>
<td>1970-80</td>
<td>676.0</td>
</tr>
<tr>
<td>MITI expenditure as % of total government outlays on R&amp;D</td>
<td>1970-80</td>
<td>9.0%</td>
</tr>
</tbody>
</table>

* Energy projects have been ongoing since 1974. Outlay totals are for the period 1974-80.

1. In addition to funds to promote the development of technologies, this includes grants to government laboratories and other related outlays. Outlays directly concerned with promoting the development of technologies are less than 30% of MITI’s R&D budget.


The Japanese government plans to construct the foundation for the world's highest level of E-Government by FY2003 as one of its “Millennium Projects”. In accordance with this project, MITI assigns the highest level of policy priority to the IT security. The E-Government is expected to become a model organization in an information society. Also the set of IT security that was included in the E-

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33 E-Government refers to all government related transactions, such as registration, application, and procurement procedures, electronically possible over the Internet.

http://www.meti.go.jp/english/information/data/eSecure.html
Government is expected to become a risk-management model for the private sector. This model will then improve the security of Japan's overall networks, and coordination with similar projects in other countries, which will lead to international contributions.

MITI's Action Plan for a secure E-Government is based on the "Action Plan for Building Foundations of Information Systems Protection from Hackers, and Other Cyber-threats, which was adopted by the Interagency Director General's Meeting on IT Security on January 21, 2000. In terms of MITI's policy priorities and directions there are four categories that involves MITI's role. These are as follow:

- Development of forms of IT security technology;
- Security evaluation for IT products and systems;
- Evaluation of encryption techniques;
- Establishment of an IT security management framework;

MITI will carry out these programs throughout the year 2003 and prepare fundamental security elements needed for the construction of a secure E-Government. The results of these programs will be incorporated with broader inter-ministry work.

In spite of E-Government, MITI's involvement in information technology does not end, where MITI applies industrial policy in the operation of the Real

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World Computing (RWC) Project\textsuperscript{16}. This is a 10-year project that started in 1992. The basic policy that MITI employs in order to manage this project can be illustrated through the chart in Appendix 3.3.

In terms of research and development activities, MITI's industrial policy is to create a competition in which the one who first provides new value to the society is the winner. Contributing to the development of the world through such competition and providing an appropriate environment for the competition is MITI's mission. As long as a project operated by MITI's subsidiaries, it must be in accordance with MITI's industrial policy. In other words, projects funded by MITI should participate via competition to provide new value to the society. Research and development activities by the ministry can be said to be mission-oriented.

An independent advisory group was set up to evaluate and advise on the promotion of the RWC Project. Immediately after MITI obtained an approval for the second half of the Project in March 1996, MITI started the workshops and established working groups to proceed with the basic guidelines for narrowing research subjects and instituting a better system for the project.

The outline of the project can be seen in Appendix 3.4. The left part of this chart shows the structure for the project’s first five years. During the first half of the project, very basic and exploratory research activities were carried out in many fields in order to achieve flexible information processing.

\textsuperscript{16} Fujimoto, K., 1997, Special Session, "Overview of the Project for Fundamental Information Technology of the Next Generation", \url{http://www.rwcp.or.jp/rwc-news/04e/fujimoto.html}
On the second half of the project the main focus is the way the research was conducted in each area where each activity should be conducted independently. In the field of technology, the project’s arrangement will automatically lead to successful results when each research activity is conducted with its own purpose in an appropriate manner. Fundamental information technology will be established when the purposes or missions of the individual activities are satisfied.

The way the project was carried out is illustrated in the chart shown in Appendix 3.5. The left part is the system of the project’s first half and the right side is the system for the second half. The Evaluation and Promotion Committee exist in the first half of the Project. The Electro technical laboratory took the responsibility for leading-edge research and MITI consigned research activities to the Real World Computing Partnership.

For the next half, the two sub-projects are clearly defined and five years will be allowed for individual research activities. During this period, the promotion Committee will decide on the method for conducting research and the Evaluation Committee will evaluate each research activity every year.

As shown in the chart in Appendix 3.6, subcommittees will be established under the Promotion Committee, where they will be the Real World Intelligence Subcommittee and the Parallel and Distributed Computing Subcommittee. All these committees and sub committees will be established under MITI.

Each research result will be implemented by creating an RWC Promotion Center in the Electro technical Laboratory. The Promotion Center also belongs to
MITI. The Promotion Center will make research plans as the leading organization of the Real World Intelligence sub-project.

In the field of Parallel and Distributed Computing, the RWCP will assume a key role in the implementation of its research results. Under MITI, the Evaluation Committee and Promotion Committee will be established. The Evaluation Committee will annually evaluate every research activity at the end of the project year during the second half, and provide their conclusions to the Promotion Committee. The promotion Committee has two subcommittees, the Real World Intelligence Subcommittee and the parallel and distributed Computing Subcommittee.

The supporting bodies for the two subcommittees will be the research organizations in both fields, the RWCP Tsukuba Research Center (TRC)\textsuperscript{37} will work as the hub for Parallel and Distributed Computing activities and the promotion Center at the Electro Technical Laboratory will serve as the center of Real World Intelligence initiatives.

The relationship between the RWCP laboratories and the Promotion Center can be further explained in the chart shown in Appendix 3.6. The Promotion Center is MITI's own research. In the field of Real World Intelligence, RWCP laboratories, that is, Members laboratories, will consult with the Promotion Center in order to make research plans. RWCP will, therefore, be a key character and keep in touch with the Promotion Center so helping conduct their research according to fixed plans.

\textsuperscript{37} TRC was established within the RWCP
MITI's priority in the field of Parallel and Distributed Computing can be explained in the diagram shown in Appendix 3.7. This is a conceptual diagram describing what has been the driving force for the development of computer architecture. Based on the involvement of MITI in the Real World Computing Partnership Projects, it indicates that the project has been arranged wisely and systematically. In other word, MITI has conducted the project by implementing the industrial policy to further advance the technology level in Japan.