11.2 Objectives and a framework of policy recommendations

A wide range of inputs is necessary to draw up the future policy of fostering SIs in Thailand, and many institutions and organization, public and private, are related to the policy making and its execution. The future policy of fostering SIs in Thailand depends upon how to set up the objectives of the promotion policy, and upon the objective a framework of the master plan will be formulated. In this section, the objectives of the policy and the framework of the master plan for fostering SIs are reconfirmed.

11.2.1 Objectives and rationale of supporting industries promotion

The Study defines the two main objectives of the fostering SIs (which refer to autoparts and electrical/electronic parts industries) in Thailand as follows:

(1) To improve the trade balance by import substitution through promoting the domestic production of parts.
(2) To build up a strong and balanced structure of industries of the country by fostering the supporting industries.

The main reasons for having set up these objectives will be confirmed below.

The first objective for promoting the substitution of imports by the domestic production of parts is derived from the fact that the automotive and electrical/electronic industries have accounted for a greater part of the total imports of the country as indicated in the table below.

(Unit: billion bahts)

Imports	1989 (%)	1993 (%)
1) Total imports	662.7 (100.0)	1,169.9 (100.0)
2) Imports for automotive industry	40.0 (6.0)	82.7 (7.1)
3) Imports for electrical/electronic industry	107.3 (16.2)	242.8 (20.8)
2)+3)	147.3 (22.2)	325.5 (27.9)

The above figures include imports of finished goods and parts.

The two industries accounted for 22.2% of the total imports in 1989, and 27.9% increasingly in 1993.

The second objective for strengthening the industrial structure is derived from the fact that the Thai parts industry has few secondary and more downstream subcontractors who will be mainly consisting of small and medium scale enterprises (SMEs). The Study revealed that the number of primary subcontractors who supply OEM parts directly the assemblers was 148 in the automotive industry and 175 in the electrical/electronic industry. The lineup of primary subcontractors is now being gradually formed.

In case of secondary and more downstream subcontractors who supply OEM parts to their upstreams, the analysis of directories supported by the questionnaire survey made in Thailand estimated that the number of secondary or lower subcontractors were limited to 124 in the automotive industry and 126 in the electrical/electronic industry. The total number of OEM parts suppliers in the both industries is estimated 573 enterprises. Considering industrial structures in industrialized countries, the two industries in Thailand would for the present require 1,000 to 2,000 secondary and more downstream subcontractors.

11.2.2 Elements necessary for supporting industries promotion

It is generally said that 6 elements, "technology", "market", "finance", "management", "policy", and "investment" are necessary to foster SIs. In the Study, the 6 elements will be examined on the basis of the local surveys.

(1) Policy and regislation
(2) Market development
(3) Technology upgrading
(4) Financial supports
(5) Upgrading of management
(6) Investment promotion

11.2.3 Government's and private sector's roles in supporting industries promotion

The objectives of fostering SIs as described above should be attained by free economic activities in the private sector by nature, based upon the principle of market economy. The economic development in a country can be generally realized by making investments in profitable sectors. In recent years, the Thai economy has been developing with a driving force of manufacturing industry. The key factor is an expanding demand in Thailand to an economic size for investment. For example, the domestic demand for automotives has been increasing and the electrical/electronic industry is being established as an major exporting sector in Thailand. Expanding markets have stimulated investment efforts.

The government must play a leading role in supporting the private sector's economic activities based upon the principle of market economy and building up a favorable environment for these activities, especially in terms of policies, legislation, tax system, finance, education and training, public supporting facilities and infrastructures. As another important role, the Government must exercise its full leadership in deciding the clear guidelines of sound industrialization for the future of the country and granting a great amount of the state budget appropriations to priority sectors.

In addition, private organizations must play important roles for promotion of supporting industries coordinating the manufacturing sector of supporting industries with the government. The first group of the private organizations is of FTI, trade associations and industrial clubs which have memberships of supporting industries. The main roles of the first group are to collect various requests and needs raised by supporting industries and reflect them on the government's policy and assistance programs. The second group consists of NGOs who support the manufacturing sector especially in the fields of education, training and technical assistance. The last group is of private financing companies and corporations who support them through credits guarantees and other financing tools. The government has to support those private organizations too in addition to the direct support to the manufacturing sector of supporting industries. Thus, the government can indirectly but efficiently support the manufacturing sector in addition to the direct supported to them.

From these standpoints, Figure 11.2-1 shows the relationships between 6 government-supported elements and private sector's activities. In principle, the government should not intervene in the private sector's economic activities as shown in the figure. Particularly, the Study set up the objectives of the policy for fostering SIs: (1) Imports substitution by promoting the domestic production of parts and (2) Strengthen the industrial structure by fostering SIs. These objectives should be guided by the government's efforts, but not by the private sector because the private sector should work for her profits. The cooperation between the government and the private sector is surely very important. It may result in a loss of economic vitality of the private sector if the government will control the market economy. The economy and the people of the country should enjoy the fruits which the government produces by attaining the above-mentioned objectives.

11.2.4 Basic standpoints in forming conclusions, recommendations, and the master plan

To make conclusions, recommendations and a master plan, the Study Team took the following basic standpoints:

(1) To place emphasis on the development of local SMEs among SIs, regarding their weakness in management, technology, marketing, financing and so on.
(2) To propose a comprehensive master plan with a broad outlook on supporting industries instead that for specific fields of the industries.
(3) To make the best use of the private sector's vitality, keeping in mind the small government-oriented policy of the Thai government.
(4) To give the first priority to the "feasibility" in making recommendations and a master plan
(5) To minimize the government's execution of compelling and intervention in the market economy, following the economy liberalization policy of the Thai government.

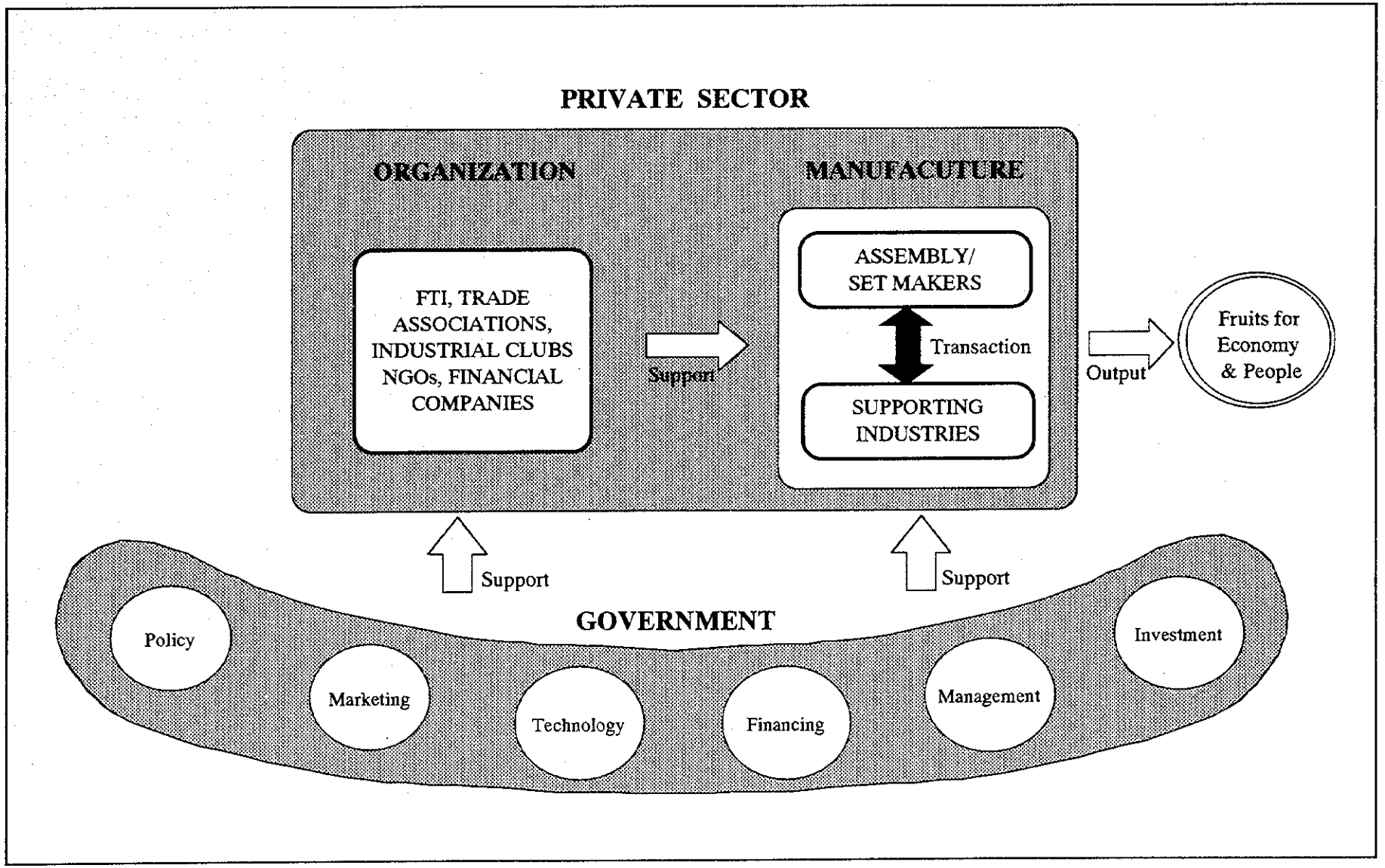


Figure 11.2-1 ROLES OF GOVERNMENT AND PRIVATE SECTOR FOR PROMOTION OF SUPPORTING INDUSTRIES

11.3 Conclusions and Recommendations

11.3.1 Policy & legislation

(1) Establishment of a legislative system

[Conclusion]

The Ministry of Industry (MOI) published a paper "Policy and Implementation Measures by Ministry of Industry". This paper describes an overall industrial development policy which the MOI made on the basis of the National Economic and Social Development Plan drawn up by the National Economic and Social Development Board (NESDB). It presents development guidelines as well as actions to enforce the policy. The MOI has worked out the general policy of the overall industry, but no specific policy for SIs or SMEs. Besides, there is not yet any nationally uniform definition of SMEs.

So far, the MOI has not made and enforced any specific subcontractor promotion policy or any policy for SIs with written papers. The first policy for fostering SIs were the BOI Unit for Industrial Linkage Development scheme (BUILD scheme) and the amended Investment Encouragement Standards policy for supporting the parts industry, which the Board of Investment (BOI) worked out in 1992. In 1994, the MOI and the BOI started to carry out the "National Supplier Development Program (NSDP)" which may be deemed as one of concrete subcontractor promotion policies. Thus, the Thai Government has just started to introduce a policy-making approach. Because lack of these policies for suscontractors and SIs, the administration for these sectors has now a limited effect in development of SIs.

The main reason is that the National Economic and Social Development Plan itself focuses on economic priorities, which are little related directly to policies for SMEs and SIs. Apart from the Plan, therefore, it is necessary to enact both the legislation and administrative foundation for fostering SIs mainly consisting of SMEs and subcontracting business.

[Recommendation]

To promote the SIs, it is important to establish a basic law and the related

legislative system and systematize the related policies. Promotion policy of SIs is divided into two aspects; SMEs and subcontracting business. Therefore, it is recommended that a "Basic Law for Small- and Medium-Scale Enterprise Development" and a "Law of Subcontracting Promotion" should be enacted as administrative foundations and standards as well.

Here, it is necessary to answer a question: Why should the two different laws be established? Generally, "Basic Law for SMEs Deveopment" are defined only by company size, while "Law of Subcontracting Promotion" are defined in term of business form. "Subcontracting" means a contract for a) supply of components, parts and accessories or b) services in producing or repairing machinery and equipment and tools for another company, and similar. In this case, the company which passes a subcontracting order is generally called "parent enterprise", while the ordered enterprise is "subcontractor".

Subcontrating businesses are made without regard to the size of companies. On the contrary, SMEs, sharing big part of SIs, don't care types of business but the size of enterprises. Those two parameters, the type of business and the scale of enterprises, are mixed in SIs (Refer to Figure 11.3-1). For these reasons, it is required for two different laws, that is the "Basic Law of SMEs Development", and "Law of Subcontracting Promotion" for promoting SIs.

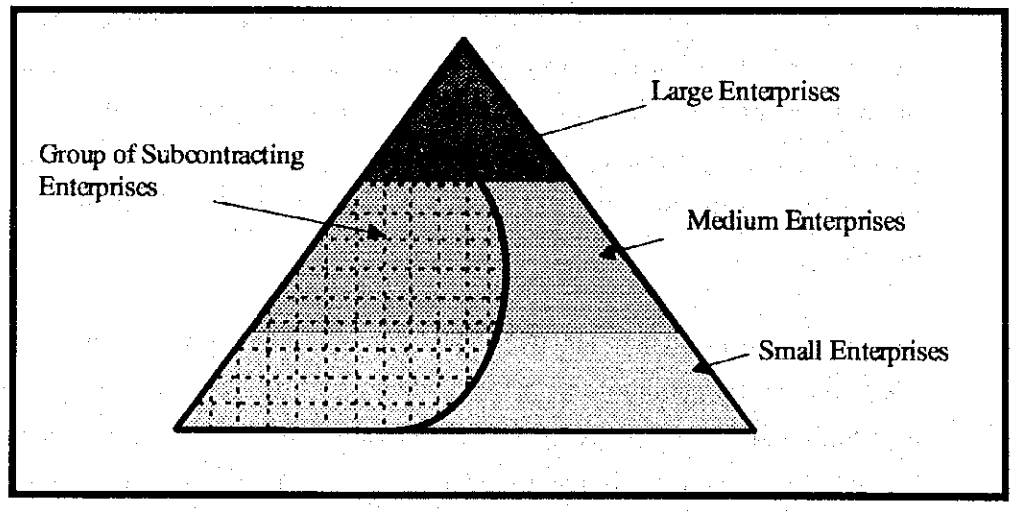


Figure 11.3-1 DOMAIN OF SUBCONTRACTING GROUP & SMEs

1.1 Basic law of Small and Medium Scale Enterprises Development

This law should be established for the following objectives:

- Clarify the goals of policies for fostering SMEs, and make them aware to the people.
- Protect and foster these enterprises under the law with higher efficiency.
- Build up a foundation for systemizing SMEs development.
- Clarify the necessity of mutual cooperation of agencies and institutions.

This law must contain the following items;

- Policy goals;
- Definition of small and medium scale enterprises;
- Basic policy guidelines (in the areas such as development of vocational abilities, modernization of facilities, improvement of technologies, organization, diagnoses and guidance, promotion of exportation, fair transactions, financial and tax systems); and
- Functions of administrative organs and associations of SMEs.

1.2 Law of Subcontracting Promotion

The objectives of this law are to provide measures for the efficient promotion of modernization of subcontracting small and medium scale enterprises and upgrading and strengthening the institutional organization for subcontracting business promotion. This law must contain the following items:

- Policy goals;
- Promotion measures for modernization of subcontracting SMEs
- Basic policy guidelines (in the areas such as promotion of subcontracting activities, mediations and arbitrations, promotion of exportation, spread of contracting, small-business measures, financial and tax systems)
- Functions of administrative organs and associations of SMEs, Institutional build-up.

The establishment of these laws will permit to make the clear definition of small- and medium-scale enterprises and subcontractors and to set up clear policy guidelines for fostering SMEs and promoting the activities of

subcontractors, according to which the organs related may make policies. For example, the Ministry of Finance and the Ministry of Science, Technology and Environment will be able to work out financial and technical support policies respectively under the same law so that the whole of policies for fostering SMEs will be systematized.

It is, however, able to include the gist of this law in the basic law of SMEs development, if the primary objective is to promote subcontracting small and medium scale enterprises for the present.

(2) Governmental organization and executing mechanism

[Conclusion]

In the Thai government, the Ministry of Industry (MOI) is the center organ which carries out industrial development with the cooperation of BOI and other agencies. Especially, the Department of Industry Promotion (DIP) attached to MOI must be the most deeply engaged in the administration of SIs and SMEs. However, the DIP's administration has to focus on the whole of industry as her role. In the country, there is not any agency specialized in the administration of SMEs which constitute the major part of SIs.

In Thailand where SMEs account for about 98% of all the enterprises, it is an imperative requirement to create a core agency responsible for ensuring the direction and development of smaller businesses in order to operate the above-suggested legislative system with efficiency. This core agency must play a leading role in 1) preparing favorable conditions for SMEs, 2) making a coordination between the administrative organs concerned, and 3) promoting an effective administration for SMEs, especially through its integrated control over the regional administrations of smaller businesses.

To install a new administrative organ as the core agency is hard in Thailand due to the administrative regulations or restrictions. To do so, it is probably the most practical solution to reorganize the existing department under MOI which is the most interested in the government's industrial policies including the administration of smaller businesses.

[Recommendation]

1.3 Restructuring of DIP for SMEs and SIs Promotion

1) Objectives

The integration of administration for SMEs and SIs to DIP will permit to ensure an effective administration for SMEs and SIs and form an integrated and systematized series of policies for these enterprises. In addition, this reform contributes to strengthening and clarification of activities of OIE.

2) The framework of the restructuring of DIP

The current Thai governmental bodies for fostering SMEs and SIs include, on the one hand, BOI, which plans and executes BUILD, and, on the other, a joint committee, composed primarily of the MOI and BOI, which plans and executes Supporting Industry Promotion and the National Supplier Development Program (NSDP). It is necessary to develop BUILD's further in promoting subcontractor contracts. To do that, MOI shall play a central role rather than BOI.

In the execution on NSDP, certain limitations are imposed by the "joint-committee" method. On the other hand, however, in the MOI there is no bureau exclusively devoted to fostering SIs and SMEs. This is the reason for the recommendation that DIP be reorganized into such a bureau.

The essential point of the reorganization or restructuring is that there will be a clear separation of roles between DIP and OIE: DIP will be in charge of molting SIs and SMEs in general, while OIE will be in charge of promoting industries sector by sector. Thus, as shown in Fig. 11.3-2, DIP's Textile Industry Division, its Handicraft Division, and the Planning Division related to these will be transferred to OIE. The Cottage Industry Division will remain at DIP, but will be changed to the Small- and Medium-Scale Industry Division. The Industrial Service Division will be changed to the Subcontract Promotion Division and will absorb BUILD. Moreover, a Research Division and a Finance Division will be newly established.

(Note 1) It is believed that the above reorganization of DIP can be adequately carried out without an increase in government personnel. It can probably be achieved through improving efficiency and through the restructuring now being planned for the total MOI.

(Note 2) The name DIP should be changed to one that appropriately expresses the nature of the organization's activities. However, there would be no need to hurry with this change if it requires time for administrative procedure.

(Note 3) Execution of this report's recommendations and of NSDP should not wait for the DIP reorganization proposed above. The execution should be expedited, even with the joint committee method, and that the transfer of operations to the reorganized New DIP should be promptly and smoothly made.

3) Major functions of the reorganized DIP

a) Draw up and carry out SMEs and SIs policies.
b) Make surveys and prepare statistics on SMEs and SIs.
c) Make coordination between policies and between administrative functions for SMEs and SIs.

4) Organization of the reorganized DIP

The Department should be organized by divisions responsible for the following functions:

Research Division:	Collects information, makes investigations and analyzes findings.
Policy–making Division:	Examines, analyzes and draws up acts, policies and a tax system,
Promotion Division:	Makes coordination between industries, give guidances to enterprises, and organizes seminars and training courses.
Subcontracting Enterprise Division:	Promotes the activities of subcontractors and encourages fair transactions.
Finance Division:	Gives guidances to enterprises on financial measures and an institutional financing system.
Regional SMIs Division:	Takes measures for regional SMEs and foster small enterprises.

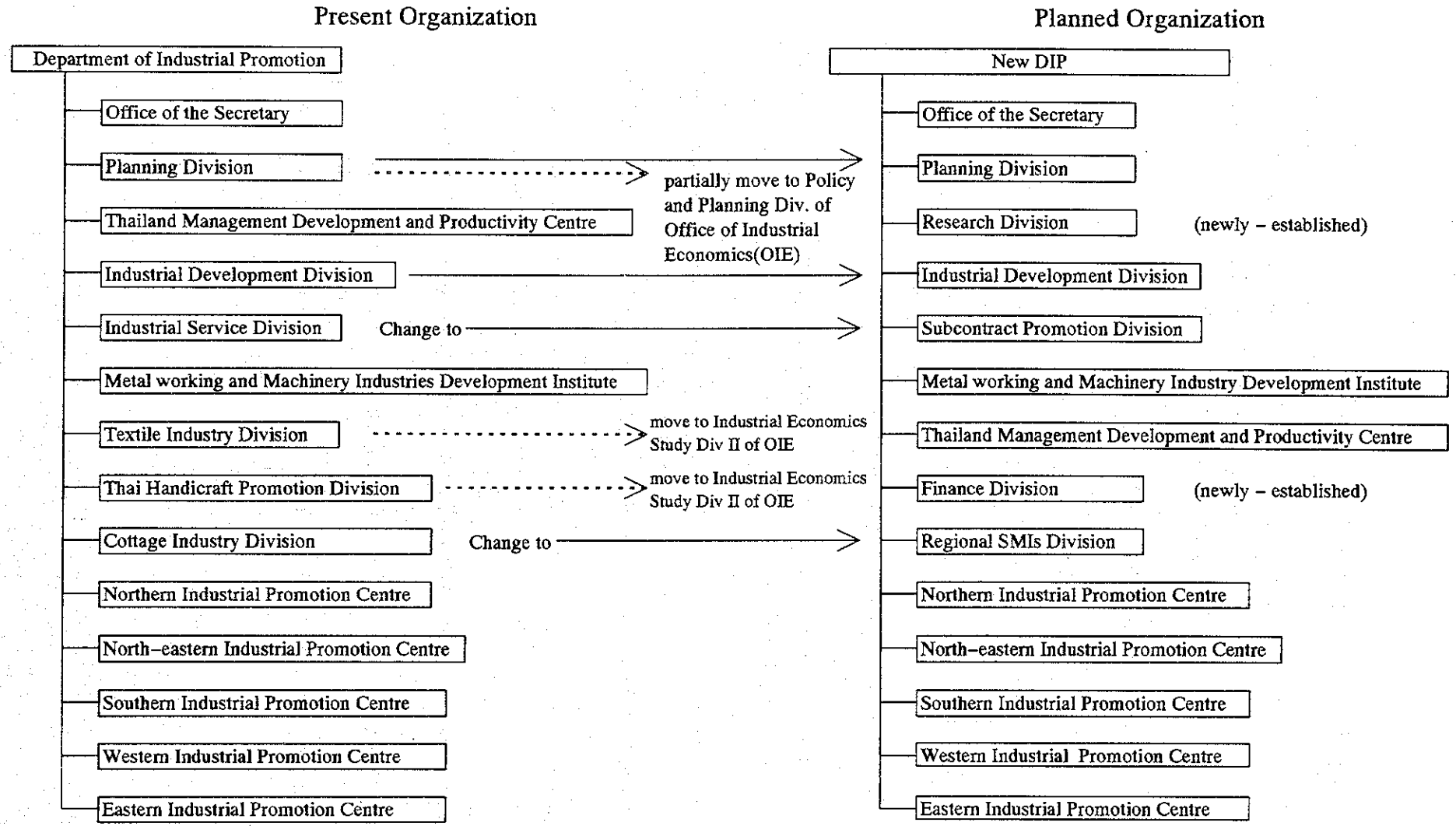


Figure 11.3-2 PLANNED ORGANIZATION CHART OF CURRENT DIP AND NEW DIP

(3) Preparation of industrial statistics

[Conclusion]

Industrial statistics (especially, related to production statistics) are not adequately prepared. The National Statistical Office, the MOI's Department of Industrial Works and the Bank of Thailand (BOT) have individually prepared their own industrial statistics, which were not based upon the same definitions of statistical items nor mutually complementary. For example, some statistics on the number of companies by industry are based upon different definitions of "industry". Thus, industrial statistics are not well prepared in Thailand, though they are a basic information indispensable for any government to draw up an industrial development plan. It is a matter of great urgency for Thailand to have a complete system of industrial statistics in order to further its industrial development in the future.

[Recommendation]

1.4 Preparation of Industrial Statistics

It is now very difficult to integrate all the research and study institutions that prepare industrial statistics. From the viewpoint of budget, it is also impossible for the National Statistical Office (NSO) to replace the existing Direct-Mail method by the Interview Survey method in data collection processes. Therefore, the first step to take toward the complete preparation of industrial statistics is to unify the definitions of statistical items as used in various institutions. It is also necessary to use those definitions that are as compatible with the international ones as possible.

At first, it is imperative to build up a total system of industrial statistics. The subsequent procedure may comprise defining details according to the total system, constructing a computer calculation system, allotting a data collection work to the institutions interested, and collecting statistical data. To build up such a total system, it is probably important to obtain advice from experts in developed countries. The Team made no detailed investigation and analysis on the preparation of industrial statistics which is beyond the scope of these surveys. However, the preparation of industrial statistics is one of the important elements

necessary to ensure the development of SIs. Therefore, the "recommendations" for this element were added herein.

11.3.2 Market development supports

Here, market development supports mean supporting activities for the companies which want to get new access to OEM parts markets or to increase their customers. In the other terms, these supports mean the promotion of subcontracting business.

If subcontracting businesses are not so much expanded as expected, two main reasons may be pointed out:

1) The ordering or ordered party has little information on the other, if there is no actual business relation between the two parties. Since the parties have no mutual communication between them, they cannot understand each other's needs and seeds nor take a chance to launch in a subcontract business. – (In this case, an "intermediation" is necessary.)

2) Even if the two parties take a chance to start business negotiations, the ordered party cannot meet the ordering party's needs in terms of quality, costs and delivery, so that the two parties cannot enter into subcontract. (In this case, an "assistance" is necessary.)

To solve such problems as seen in the case 1), the BOI formed a BUILD scheme in 1992 and has since acted as intermediary between the ordering and ordered parties by using its database containing information on the two parties.

The case 2) involves many elements or problems related to the main theme of the Study. Therefore, some measures to support subcontracting business in this case will be discussed in the subsequent section for each element. This section discusses intermediary measures to be taken by the government for promoting the subcontracting business.

(1) Subcontracting intermediation (Strengthening the BUILD's "sales activities")

[Conclusion]

In June 1992, the BOI started to implement the BUILD scheme in order to promote subcontracting business and strengthen SMEs and SIs. The BOI has almost completed the first stage of making a database on ordering and ordered parties. At the end of 1993, the BOI registered 1,200 companies in its BUILD database, and had 4 successful cases of its intermediation for subcontract business. It is now at the second stage to promote subcontracting businesses on a full scale.

It is premature to assess the results of the BUILD scheme since it just started 2 years ago. This scheme has the following problems at present.

1) SMEs (ordered companies) fail to provide the BUILD database with a full information on themselves, necessary for the BOI to act as a intermediary between ordering and ordered parties, when they are registered in the database.

2) The quality of products (or parts) supplied by subcontractors does not meet the requirements or standards which parent companies (ordering parties) set up.

3) Ordering parties foster subcontractors to their desired levels without any public incentive. These support activities are almost volunteer beyond the principle of capitalistic economy.

4) Subcontracting business is promoted without any cooperation of many institutions interested.

In many other developing countries, databases have been also prepared to store any information necessary to promote subcontracting business. Also in many cases, however, the staff of several members simply files data in a computer. Such databases have a limited effect on their subcontracting business promotion activities. To make the best use of such a database, therefore, it is necessary for a sales group to visit many companies interested in subcontracting.

[Recommendation]

It is recommended that the BUILD scheme should be more strongly carried out as an "intermediary tool for subcontracting business". Particularly, it is necessary for this scheme to lay stress on sales activities to industries, now that the BUILD database is prepared.

2.1 Expansion of BUILD's Activities

The proposed sales activities should include the following:

1) Organization of information exchange meetings for buyers and suppliers.

   An information exchange meeting should be periodically organized for both buyers and suppliers. In the meeting, buyers can present the desired parts in names, quality standards, prices, quantities and delivery terms to suppliers. They can also explain necessary documents for parts to be purchased, including a quality test certificate issued.

2) Individual intermediation

   Apart form information exchange meetings, the BUILD sales group should visit individual buyers and suppliers to find many good matches of buyer and supplier for subcontracting business. Through its visit to the companies, excellent suppliers are introduced to excellent buyers.

3) Follow-up

   The BUILD sales group should not intervene in, but follow up individual business negotiations. To follow up them, the group receives reports in a certain form from the two parties interested. These reports must contain the reasons of successful or unsuccessful subcontracts. These data are stored in the BUILD database to be used as references for the future sales activities.

4) Organization of exhibitions and intermediation for mutual visits to companies

The BUILD sales group should organize periodical "parts" exhibitions, and act as intermediary between buyers and suppliers so that buyers and suppliers can visit and observe each others' factories to confirm suppliers' technological levels and buyers' quality requirements respectively.

5) Provisions of incentives and awareness

In the next section, a recommendation will be proposed on new incentive systems for subcontracting promotion. The BUILD sales group should take every opportunity to explain the incentive systems to buyers and suppliers in order to promote subcontracting business.

6) Execution agencies

Now, BOI completed the first-stage database. It was announced that the MOI working group under NSDP would join the BUILD especially in the field of the sales activities. The Team recommends, however, that the entire BUILD scheme be transferred to the new DIP in MOI after its restructuring.

(Note) As of November, 1994, BUILD was suspended in activities by lack of the budget.

(2) Subcontracting assistance

[Conclusion]

According to the questionnaire survey on Thai SIs, many enterprises pointed out a low level of production technology and a shortage of skilled labor force as their most serious problems. They were desirous of technology transfers from foreign companies. A foreign-based company that was a buyer of parts, as an example, has assisted a local parts supplier for one year at the buyer's cost, but could not purchase any desired parts from the supplier. The buyer commented that it was impossible for the company to give a more technical assistance to the parts supplier at its own cost.

To promote subcontracting business, it is necessary to provide not only BOI's intermediary services as described in the previous section, but also a public subcontracting assistance to those companies which want to make subcontracts.

[Recommendation]

It is recommended that the Government should draw up and carry out a full-scale subcontracting assistance program for those pairs of buyer and supplier who want to enter in subcontracts.

2.2 Subcontracting Assistance Program

1) Objectives

The main objective of this program is to give a public assistance to those pairs of parts buyer and supplier who want to enter in subcontracts.

2) Executing agency

For the time being, this program should be carried out by a joint work by DIP under the Ministry of Industry and the Board of Investment (BOI), under "National Supplier Development Program". In the future, it is desirable to transfer the responsibility to the new DIP as recommended above. Besides, cooperation of FTI is necessary as a coordinator of the

private sector side.

3) Beneficiaries

The beneficiaries should be those pairs of buyer and suppliers who are approved and registered for the Subcontracting Assistance Program. Those pairs of buyers and suppliers who will enter in or have entered in subcontracts should be qualified for application. They must submit documents on their own "Supplier Improvement Project" for application to the executing agency and obtain the approval of thereof. It should be also conditioned that beneficiary suppliers must be SMEs with 70% to 80% or more Thai ownership. Beneficiary buyers are not limited to ownership, but pass a qualification screening in company size (with a certain lower limit in size) and other terms.

4) Approval of Supplier Improvement Project

If an existing or potential supplier has less ability to manufacture quality parts, the pair of supplier and buyer should submit their "Supplier Improvement Project" with a cost estimate required for the improvement to the execution agnecy. The "Supplier Improvement Project" should be for 3 years and contains the following items:

- List of machinery and equipment to be purchased;
- Requirements for technical guidance (hiring of consultants);
- Requirements for employment and education of personnel;
- necessary R & D; and
- Time table for implementation of the Project.

The "Supplier Improvement Project" should be prepared under a mutual consent of the parties interested, though the buyer gives a guidance to the supplier in principle under the Project. The Project should be submitted in the form of an agreement to the executing agency, which examines it for approval or rejection.

5) Contents of assistance

Upon the approval of "Supplier Improvement Project", every pair of beneficiaries (buyer and supplier) can receive public incentives as follows:

- Soft loans such as SIFC's should be given to the suppliers by priority for the purchase of fixed assets such as machinery and equipment. Financial institutions should grant loans without screening and credit guarantee must be unconditionally given.
- The expenses of new employment, education or R & D incurred by suppliers should be totally or partly exempted or reimbursed from the corporation income taxes due or paid. This means "double exemption" of income taxes,
- The buyer's expenses of technical assistance (consultant hiring from overseas, etc.) should be also totally or partly exempted from the corporation income taxes due. This is also "double exemption" of income taxes. If consultants are employed from abroad by the buyer, incentives should be granted to the buyer in terms of visa, working permit and foreigner employment limit.

6) Limitations and obligations

The amount of granted loan or tax incentives should be within the total expenses that is declared in the "Supplier Improvement Project" submitted to and approved by the execution agency. The term of assistance should be within 3 years without regard to the results of subcontracting. If the Project is recognized as successful, the pairs concerned should be able to make a new application for assistance by submitting a new "Supplier Improvement Project".

A buyer should be able to make plural pairs with suppliers, while a supplier must make only one pair with a buyer at the same time. At the execution agency's request, any pair should accept its observation and inspection and submit the required documents to it at any time.

7) Expected effects

The Subcontracting Assistant Program, if realized, will enable parts makers with Thai ownership to get easy access to OEM markets and improve their technology level. Thus, it may be expected that the Program will have significant effects on the development of SIs in the Thai industrial structure.

Note: Buyers should not be limited to finished-product assemblers, but include primary, secondary or more-downstream suppliers and parts exporters. To foster secondary and tertiary subcontractors, buyers should be lager enterprises which manufacture internationally competitive products and have a sincere intention of promoting subcontracting business.

11.3.3 Technology Improvement Measures

(1) Technology transfer and assistance

[Conclusion]

The Team visited 56 parts manufacturers including 15 joint venture companies in Thailand and evaluated their levels of technology, which have been ranked on a 5-grade scale as follows:

Rank	Range	Qualitative Level	No. of enterprises (No. of JVs)
A	4.5~5.0	OEM International brand, International market	13 (8)
B	3.8~4.4	OEM International brand, Local market	14 (4)
C	3.0~3.7	OEM Local brand, Local market	22 (3)
D	2.9以下	REM Local market	7 (0)
Total			56 (15)

The average grade of the 56 suppliers is 3.7, which is divided into the following categories:

(A-1) Production and process equipment (hardware)	4.1
(A-2) Production technology (software)	3.7
(B-1) Quality control equipment (hardware)	3.8
(B-2) Quality control organization and practice (software)	3.4
Overall Average	3.7

This report aims to raise the overall average of the parts industry's technology level to 4.0, which is among the highest level in ASEAN countries. Upgrading to the 4.0 level in the overall average also produces a sizable number of companies in rank A. The above breakdown indicates that the Thai parts industry has

weakness in "software" areas. Delivery and quality, which buyers show the most dissatisfaction with Thai suppliers, are originated in these weak software. Thus, to raise technology levels of SIs in Thailand, strategic focus should be placed on improvement of production software resources.

Compared to hardware, production software needs to be introduced through technology transfer and assistance. Throughout this report, technology transfer is defined as follows:

1) "Technology" which should be transferred to the Thai parts industry with priority is software resources in the areas of production and quality control directly related to daily factory operation. Software also means basic theories essential in design and their application technologies.

2) The "sender" of the technology transfer includes governments, companies, and individuals of industrialized countries.

3) The "receiver" includes governments, companies and industrials of developing countries who commits efforts by themselves to improve technologies. In other words, technology transfer is not taken as one "must be transferred by the sender" without the receiver's efforts for self-supporting.

(Note) The essence of production activity is to produce high value added products by using resources in an efficient and effective manner. Here, "efficiency" is one of the key word to evaluate any industry. The parts industry in Thailand is considered to be "inefficient" as judged from the high defective rates and lower quality levels. Its efficiency cannot be improved only by introducing hi-tech equipment, computers, and R&D capability. Instead, it should focus on acquiring the basic industrial technology that will lead to full-fledged growth in the near future.

[Recommendation]

According to the result of the questionnaire survey on domestic suppliers, approximately 50% of respondents cited workshops as the preferred way of

technology transfer. On the other hand, only 28% considered seminars useful. The result coincides with the interview survey by the Teams who visited a number of enterprises. Small percentage of owners and managers of SMEs showed interest in seminars teaching general theory. They want to learn and introduce production techniques that can be more applicable to their daily operations. Clearly, enterprises want more practical training and customized technical assistance, instead of general lecture in the form of seminars. Requirements of Thai industries in technology transfer have moved from the age of seminars to that of workshops combined with technical assistance in their factories. For this reason, an integrated technology extension service program is recommended.

3.1 Technology Extension Service Program

1) Objective

To transfer softwares required for production and quality control to SIs in Thailand through an integrated program of class-room type lecture for basic theory, workshops, and extension services. The primary objective is to help industrial mangers, engineers and skilled workers to learn production techniques and practices based on scientific theory and principle.

2) Target subsectors

As the first stage, casting, presswork, plastics processing, and mold- and die-making are selected as target subsectors.

3) Eligibility

The program will be participated by enterprises belonging to any of the above four subsectors, particularly SMEs. From each of three subsectors, 10 - 15 enterprises will be selected and organized into one group which is eligible for the program.

4) Major activities

Three to four consultants specialized in relevant areas (including experts

invited from overseas) will form a group to serve as "mentors" for a selected group of enterprises. They will provide series of lectures and workshops to teach basic theory and knowledge, and will visit each member enterprise regularly to give guidance and advice according to particular needs and conditions at each factory. Extension service will constitute the core of the above activities, through which interrelationships between theory and practice will be taught.

5) Execution agency

A government organization which has facilities for lecture and workshop, such as DIP, will hire consultants and organize member companies. The organization's staff will also participate in extension service for communication and coordination. FTI and related industrial associations shall assist the program in coordination with private sectors.

6) Frequency of extension service

First, the consultants will identify problems, followed by advice through the theoretical thinking and reasoning process. Next, the consultant, will check the result of improvement efforts upon the advice made in the previous visit. Frequency of visit will be once or twice per month per company.

7) Duration of services

One program cycle will last 2 – 3 years for each group consisting of 10 – 15 enterprises. To achieve the purpose of implanting basic industrial technology in the parts industry, the program should be continued for at least 3 cycles covering 6 years

8) Number of beneficiaries

Assuming that 15 enterprises in each of the 4 subsectors participate in the program, each cycle will cover 60 enterprises, thus totaling 180 enterprises over 3 cycles. Three consultants will be assigned to each subsector, and a total of 12 experts will be hired to take care of 4 subsectors. Assuming that each consultant will serve a 2–year term, a total of 36 consultants will be

needed for the 6-year program.

9) Project financing

The program should be financed by multiple sources, including government assistance, corporate sponsorship, foreign aids, and service fees from participating enterprises. If participants can enjoy the services at free of charge, the effective goes down.

10) Expected benefits and advantages

The program offers higher effects for self-supporting of enterprises and economic advantages than conventional methods including assignment of a consultant to a factory for a specified period of time or 2 years. They include:

- Regular visit will encourage and motivate each enterprise to make improvements through self-help efforts.
- A group of consultants specialized in different fields will be able to meet diverse demand of participating enterprises.
- The grouping of 10 – 15 enterprises will reduce the cost for program participation.

(2) Education and Training of Engineers and Technicians

[Conclusion]

The result of the questionnaire survey for Thai SIs shows that 51.8% of respondents mentions job hopping as the most serious labor problem, and 50.5% of them faces difficulty in employing people with higher education. These two answer stand out, followed by the lack of discipline and morale of workers (38.3%) and the difficulty and limitation in in-house education (31.3%).

The difficulty in securing engineers and technicians is cited by 46.5% Japanese suppliers who responded the questionnaire survey conducted by the Team in Japan. They see it as one of unfavorable factors in evaluating the investment climate in Thailand. The similar concern has been raised by owners and managers of domestic enterprises visited by the Team. Some have been disappointed by experience in which they have wasted in-house education and overseas training for employees as a result of job hopping. More important, the shortage of engineers and technicians in Thailand has been well known inside and outside the country, together with widespread job hopping which adversely affects sound corporate management and growth.

These serious problems cannot be solved in a short term. The shortage of competent engineers and technicians will prevail over nearly the next decade, despite intensive efforts of the Thai government. Job hopping is caused largely by short supply of manpower and is a general practice deeply rooted in the country's culture so that this problem cannot be the subject of the Study.

Improvement measures, therefore, have to be devised upon the acceptance of these unfavorable conditions. The study team has applied the following principles when considering possible improvement measures:

1) Job hopping has to be accepted as a fact. Therefore, enterprises have to provide in-house education and training that will help improve the overall level of technology in the country as a whole by creating a pool of engineers and technicians who will proliferate technology and knowledge. In other words, it is supposed that the present short supply situation of manpower will be balanced after a certain period of time.

2) Job hopping is widely seen among different industries, e.g., a skilled machinist may move to service business. Since this means loss of human resources which take considerable time and money to develop, efforts should be taken to induce job hopping within the same industry.

3) Companies which have a career development program to promote competent workers regardless of educational background have a relatively small percentage of job-hopping. Companies who offer higher salary and other fringe benefits also have a lower frequency of job-hopping.

4) Some companies deal with the shortage of engineers with high educational background by employing and assigning graduates from diploma schools to engineer's jobs.

[Recommendation]

Under the above recognition, expansion of the Occupational Skill Standards system is recommended. This is a major area where the government can take initiatives and is expected to serve as an instrument to increase much-needed engineers and skilled workers, while preventing them from moving to other industries or trades.

(Note) Improvement of vocational training institutes is discussed in another section of "Technical Institutions."

3.2 Expansion of Trade Skill Standards System

1) Objective

To grant certification to engineers and technicians in fields of SIs through the national certification system, and guarantee their career and salary

according to their professional levels. This will help prevent them from moving to other fields of industries so that technologies will be kept in individuals even not in enterprises, and make a sufficient pool of engineers and technicians.

2) New fields of certification to be added

The following skills are not covered by the current occupational skill standards system, despite their importance in fostering SIs:

- Casting
- Metal presswork
- Plastics Processing
- Mold- and die-making

(Note) Machining, gas welding, assembly of electrical equipment, and automotive coating are included in the current certification system which covers 31 trades. In these subsectors, however, repairing skills seem to be emphasized.

3) Execution agency

The current organization – Occupational skill Standards Division, Department of skill Development (DSD), Ministry of Labor and Social Welfare – should be responsible for the expanded system.

4) Testing facilities

One of reasons for the above four skills not included in the current certification system is the need for costly equipment for testing of skills, and the shortage of qualified examiners. One solution is to contract some of certification tests to other organizations including private enterprises. Candidates include government organizations which have adequate equipment and instructors (such as MIDI), training centers jointly operated by industries and universities, such as ATTC and CTTC, and private enterprises including large parts makers. In particular, active participation of private enterprises in diverse fields may lead to develop modern skills to meet current and future needs.

5) Securing of salary and career path for certified technicians

There are some ways to secure salary and career path for certified technicians. It should be noted that salary and fringe benefits should be left to discretion of private enterprises, and the government should promote employment of certified persons in the following ways:

- To establish a higher minimum wage guideline according to the level and type of certification, and encourage industries to adopt them as generally accepted standards.
- To instruct industries to hire certified persons for jobs requiring safety management.
- To grant a special educational status or qualification to certified persons as the ranking of certifications for the purpose of encouraging higher promotion.

6) Expected numbers of certified technicians

At present, 2,000 people receive the examination of the Trade Skill Standards System a year. Out of them, a 50% passes for Grade 2 and Grade 3 certifications. There currently are 31 trades in the system so that around 65 of new certified technicians were borne a trade a year. The ratio of successful candidates for the above mentioned 4 trades is supposed to be lower than the past experience for the 31 trades because these trades for parts manufacturing require higher skills for pass.

Moreover, testing facilities and qualified examiners may not be sufficient for the new 4 trades at the beginning stage. Therefore, it is just estimated here that 25 technicians will be certified for Grade 2 and Grade 3 per trade per annum, so that 100 certified technicians are expected to be borne per year for the 4 trades.

(3) Strengthening of technical service centers related to production activity

[Conclusion]

Public technical service centers most needed by private enterprises in connection with their daily production activity are in the fields of inspection, testing, calibration, and assistance in R&D. These services require highly costly equipment and qualified personnel, which are not affordable by private enterprises except for large ones, and have to be rendered in some or most part by public organizations.

In fact, technical service centers directly related to production activity are publicly owned in most countries, partly because service must be provided at an affordable rate, and partly because certificates and test reports require a certain level of authority and credibility. However, those organizations do not work well in most of developing countries. For instance, a facility in Indonesia does not meet needs of private enterprises because staff do not work for long hours because of government employee's status. Moreover, these organizations are often left behind in budget allocation and cannot purchase spare parts, so that some equipment is in unserviceable conditions. In the Philippines, an industrial association opposes a plan to incorporate a technical service center into the government organization, as they are afraid of following the Indonesian case. In Malaysia, most of staff at a technical service center have moved to private enterprises, and there is few instructor to conduct educational programs.

In Thailand, some signs of human resource drainage from technical service centers are seen, particularly MIDI with relatively long history. A major reason for this is an increasing gap in salary between government and private corporate employees. This is a typical phenomenon that inevitably occurs in the industrial development process. Naturally, treatment of government employees should be dealt with fairly over all the government officials. Preferential treatment of staff of technical service centers cannot be justified. So is government budget allocation which tends not give priority to procurement of repair parts and testing materials.

An idea is to charge higher service fees to users in order to meet the above financial requirements. However, such revenues are, in most countries, once

collected by the government, mixed with other miscellaneous revenues and then reallocated under the national budget system. Thus, such revenues cannot be exclusively used within a center as its own income for any purpose. Increase in service fees does not contribute incentives for staff of centers.

Nevertheless, as discussed in previous sections, promotion of SIs is one of national priorities in Thailand, and technical service centers must play a critical role in fostering them to a competitive industry. They are expected to step up service and support for private industries, particularly SMEs by ensuring the effective use of existing public facilities and equipment. For this purpose, the study team recognize that public technical service centers should ask for cooperation and assistance of the private sector as far as possible, at least in the area of operation and management of the centers. The Team therefore proposes the following program to activate public technical service centers.

[Recommendation]

3.3 Public Technical Service Center Activation Program

1) Objective

To activate public technical service centers by entrusting their operation and management to the private sector, and to develop them into organizations which can provide adequate and quick service to meet diverse needs of industries.

2) Market study and selection of centers for private management

The proposed program should be first agreed by the government and the private sector at JPPCC (Joint Public and Private Sector Consultation Committee) or through other medium. Then FTI or other associations will lead a market study to find what kind of services private enterprises want from public technical service centers, including complaints, in both hardware and software aspects. Based on the result of the study, technical service centers to be entrusted to private management will be selected through JPPCC or other organ, followed by improvement measures. DIP and TISI under the Ministry of Industry shall play a leading role in

execution of the program.

3) Establishment of the foundation to operate technical service centers

A foundation to operate technical service centers will be established on the basis of funds contributed by sponsoring companies as well as government subsidy. The foundation should be a non-profit organization.

4) Entrustment

While facilities, machinery and equipment owned by public centers will remain as the government property, their operation will be entrusted to the foundation under a formal contract between the government and the foundation (NGO).

5) Increase in service fees and expansion of services

Service fees will be increased, while service quality will be improved by offering quick service and extending service hours.

(Note) An increasing number of companies are asking non-government testing centers which charge more fees but provide quick service.

In addition, The foundation will conduct assistance in R&D, prototype production, and manufacture and market own products (provided that they are not competing with other companies) upon the request of private enterprises. Expansion of services will include visiting, consultation and other services for convenience of users.

6) Staffing and treatment

The foundation will recruit new employees widely from various fields of industries as employees of the foundation. The current employees of the public centers can join the foundation expiring status of government officials. The foundation will set salary and other working conditions at its own discretion, which should preferably be set at the level of treatment offered by the private sector.

7) Revenues and expenditures, and audit

The foundation will be authorized to control and manage revenues and expenditures of the foundation, including annual funds and service fees, which are subject to auditing by the government, possibly a special committee organized by the government and FTI or other associations. Note that the foundation should have a maximum degree of autonomy with minimum government intervention.

8) Expected benefits

Operation of technical service centers by the private organization is expected to help utilize existing facilities and equipment in a highly productive way and to provide quick and better service, which will contribute to the saving in capital of SIs to purchase such facilities and equipment by themselves, as well as improved quality and shortened delivery time.

(4) Promotion of Building of Training Schools

The problems in developing and fostering vocational abilities (for educating unskilled- and skilled-workers) in Thailand can be summarized as follows.

a) A low level of scholastic achievement of workers (especially in science and mathematics).
b) A lack of opportunities to learn basic and practical technologies.
c) Insufficient educational facilities and equipment in training schools for learning modern technology.
d) A lack of lecturers and instructors.
e) A lack of funds for educational institutions.
f) A lack of textbooks in Thai.

The other problems than a) above are due largely to a shortage of funds. It is also a fact that, due to short history in technical education in Thailand, it will not be possible to build a firm technical training foundation in a short term. One way to overcome this problem is to promote building of training schools by the initiative of private companies, including foreign affiliates. When private companies establish a training school, they naturally want the school to first and foremost be useful for their own production activities. The various restrictions that come into play when a private company tries to build an own training school.

For example, though investments in building educational institutions and training schools are eligible for the BOI incentive scheme, the institutions and schools are limited to certain fields like technology, engineering and science. Also, the incentives provided are merely 8-year exemption of corporate tax and 50% reduction of import duties in Zone 1 and Zone 2. These incentives are the same as those for profit-oriented business. Moreover, if the company is a foreign affiliate, there are restrictions on the number of foreigners that the school can accept, and there is also the burden of having to get approval from government institutions.

For private companies, developing vocational abilities of their employees is a major concern. From the companies that the team visited and surveyed recently, it was clear that they, and especially the foreign affiliates, have a

strong desire to invest in education. In order to encourage them to establish a genuine educational institution or training school – something that requires a huge sum of capital – more privileges should be given to those companies who will build training schools.

[Recommendation]

3.4 Joint Industry–University Training Schools

1) Objective

For private companies that want to conduct vocational training for their company's employees and that have facilities of a certain level, instructors, and systematic training program will be given the status of educational foundations, with the attendant privileges, on the condition that the centers are operated jointly with a university or some other Thai educational institution. In this way, it will be possible to give practical vocational training not only to the company's employees but also to a broad range of outside workers (both formally and informally).

2) Projects Eligible for Incentives

A private company (or some companies, such as in an industrial association) who establishes an educational institution or a training school jointly with a Thai public educational institution, bears a certain amount of the total project cost or of the annual operating expenses, should be given the following incentives.

3) Incentives

Joint industry–university training schools can enjoy the following incentives in addition to normal privileges attendant upon the Thai educational foundations.

a) Import duties on machinery and materials for training use will be exempted.
b) The permissible number of foreign teachers will be increased.
c) The school will be exempted from value-added tax.
d) Income taxes on foreign teachers' salaries will be exempted.
e) Application procedures for establishing the school will be simplified.
f) Measures will be taken to reduce the corporate tax of the companies sharing the project's cost.

4) Cooperation of Industrial Estates

In the cases of ATTC and CTTC, industrial estates will be provided either the land or the land and the buildings. If one vocational school is planned in one industrial estate, the cooperation of industrial estates will be indispensable.

5) Expected Benefits

It will be possible to make up for the shortage of skilled workers in a manner that is economical for the national budget. However, the joint industry-university arrangements should be advantageous to both sides of the partnership.

11.3.4 Financial assistance

According to the results of the questionnaire survey to Thai SIs, about 50% of all the answerer companies needed funds. Of which, about 80% of the companies wanted to purchase machinery and equipment, and about 55% working capital. This inquiry revealed the following problems in borrowing funds from banks such as "complicated procedures of borrowing funds", "difficulity to borrow the full amount of required funds" and "shortage of collateral" in higher ranking. The smaller in size, the more in complaints on the above. In case of SMEs, the amount of required funds was under 20 million bahts for 58% of all the answerers and 20 to 39 million bahts for 24%. Thus, 82% required funds up to 39 million bahts.

On the other hand, the financial institutions which had adopted an institutional financing facilities for SMEs pointed out the following issues on the Team's interview:

- Many of SMEs could not make concrete explanations on the potentiality and superiority of their envisaged products in the market for which they wanted to borrow funds.
- Many of SMEs made ambiguous and little reliable explanations on own counter funds available to supplement the loan.
- Collaterals (such as land, buildings and machines) available for borrowing loans were insufficient. As a result, the size of loan was obliged to be small.
- Especially, family-owned companies did not like to disclose the financial statements so that it was impossible to know borrowings from other financial sources.
- Good managers were lacking.

Both SMEs and financial institutions seems to point out common issues mentioned in almost all countries. Those problems mentioned above are to be taken as an inherent nature always involved in SMEs financing when credit facilities for SMEs are planned.

Since this report discusses the development of SIs, financial assistance is especially involved with SMEs with fragile management base. Therefore, this section discusses financial assistance systems for SMEs in SIs.

(1) Financial assistance system for SMEs

[Conclusion]

In Thailand, there are almost all types of financial and credit guarantee systems for smaller businesses as far as institutions concerned. Financial institutions such as IFCT, SIFC, GBS, IPC and TTC offer loans for these businesses. The credit guarantee institution SICGC also provides services for smaller businesses. However, there is not any credit insurance company that covers risks on credit guarantee companies. The above mentioned financial and credit guarantee systems and institutions with a short history, are not yet so developed as to meet the needs of smaller businesses sufficiently.

For example, the SIFC's credit ceiling is 10 million bahts, rather low from the standpoint of fostering SIs which include medium-scale enterprises. The low credit ceilings in Thai financial institutions stand to reason, considering the names of these institutions which are all on "small scale". However, it is important to foster not only "small-scale" companies, but also "core" enterprises having an international competitiveness. Most of these "core" enterprises are on a "medium scale" and have a larger demand for funds than the smaller.

In addition, a few financial institution have a few or no branch office(s) in Thailand. Many has only a head office in Bangkok but no local branch office. Besides, they have such a small amount of funds available for offering loans that they cannot fully meet financial demand in the private sector. The main reasons for the shortage of funds are that the financial market, still underdeveloped, cannot pump up adequate funds from private sources, and that the financial institutions dealing with institutional financing carry on no deposit business by nature. Some financial institutions procure funds through a foreign financial assistance system at all exchange risks.

Furthermore, private financial institutions deal with credit business for smaller enterprises as a part of their activities, but they do such business in a reluctant way, because this business has a high risk, requires onerous procedures such as credit screening, and brings forth a small spread.

From these discussions, it is possible to draw the conclusion that the credit

business for smaller companies, which involves high risks and costs, should not be left only to private financial institutions' initiatives, but carried on by the government under the policy of fostering SMEs or SIs.

[Recommendation]

In Thailand, the financial assistance system for smaller enterprises is still prematured. This system should continue to be maintained in spite of many problems. As a matter of course, financial institutions, even governmental ones, tend to provide loan services to their selected excellent companies on preferential basis. This behavior should not be blamed, because it is simply in conformity with the principle of market economy which drives less competitive players out of the arena.

(Note) The above does not mean that the weak in economy shall be disregarded in the course of industrialization. A social welfare remedy or other ways should be used to help the management and labor of the weeded-out companies.

4.1 Improvement of SMEs Financing Scheme

The following is recommendation for the financial assistance system for SMEs in SIs:

1) Credit ceilings as well as the scale limit of companies eligible for receiving loans should be raised up, considering internationally competitive companies, which are expected to form the core of SIs.

2) The institutional financing system for SMEs should be more attractive with the combined conditions of low interest, long-term loans and grace period.

3) A nationwide network of financing agents should be built up in cooperation with commercial, city and local banks.

4) The financing business for smaller enterprises involves high risks and costs with a small spread. The government should bear such risks and costs, if it entrusts the financing business to private financial institutions.

5) The government should limit to a certain extent to carry on the financing business for smaller enterprises by public institutions, but mainly by using the nationwide network of private financing agents. In this case, the government should grant a subsidy by supplementing the rates of interest or spread for the financing agents. The government should consider other supports such as shouldering part of credit guarantee fees for the financing agents.

6) Establishment of a credit insurance company should be carefully examined to cover risks on credit guarantee companies. Note that the credit insurance companies will much contribute to activation of SMEs financing but on the other hand, the financial burden to the government will become big because all the bad debts will flow into the insurance company from institutional financing systems for SMEs.

(2) Machinery and equipment leasing program for SMEs

[Conclusion]

According to an interview survey made on leasing companies, an increasing number of companies has recently used machinery and equipment on lease. This type of lease is favorable for SMEs with fragile financial base, partly because it needs no collateral, and partly because it involves no debt, only return the equipment and machinery at the end of lease period. However, leasing companies reported that a considerable number of users had failed to pay rental fees.

According to the results of the questionnaire survey for Thai supporting inustries, more than 40% of all the answerer–companies reported that their equipment was unsatisfactory, and about 40% of them complained that machines are too expensive to purchase. Nearly 45% of them had an intention of purchasing used machines, and smaller companies showed this intention more strongly. In the same inquiry, 60% of all the answerers had an interest in a machinery and equipment leasing system. The percentage rose up to 65% as far as smaller enterprises are concerned.

Considering these circumstances, it is concluded that it is necessary to find out a machinery and equipment leasing program more favorable for SMEs.

[Recommendation]

4.2 Assistance of SMEs in Machinery Leasing

1) Objective

The government or other authorities should give supports such as a grant for supplementing the rates of interest and a guarantee for paying rental fees to the SMEs which use machinery and equipment on lease.

2) Beneficiaries

The beneficiaries of this leasing system should be SMEs in SIs.

3) Machinery and equipment leased

Machinery and equipment provided by this leasing system should be such modern machinery and equipment for production and quality control that may make contributions to improving the technological level in Thailand. The names of machinery and equipment eligible for the leasing system may be previously nominated by the government.

4) Leasing organizations and public incentives

Private leasing companies should provide leasing services under this leasing program as a part of their regular business. Under this leasing program, the government should approve a short-term depreciation such as an accelerated depreciation for the machinery and equipment which the leasing companies purchase and lease to SMEs. The government also should grant these leasing companies any guarantee for rental fees not paid.

5) Privileges for beneficiaries

In some cases, the total amount of rental fees for a machine may be higher than the purchase price. Therefore, the government should supplement the rates of interests involved in the leasing fee so that SMEs can reduce their cost.

Note: To cover rental fee not paid, lease-cooperatives of 20 to 30 members may be formed by SMEs which will use this leasing program to take a joint responsibility for paying rental fees. It is recommended that the formation of these cooperatives should be considered in details, when this leasing program is introduced in Thailand. The Fiscal Policy Office of the Ministry of Finance shall take an initiative for implementation of the program.

11.3.5 Modernization and education of management

[Conclusion]

A company's growth is greatly affected by its management skills. A manufacturing company in particular, must repeatedly invest in equipment and machinery to keep up with rapid technical progress. Therefore, in management based on cost analysis in the long term is very important.

Many of business managers in developing countries do not recognize the fundamental difference between the way of managing a manufacturing company and that of managing a commercial enterprise. Thus, management or entrepreneurs in the manufacturing field often handle industrial capital like that in commerce: they will turn over and recover their invested capital in a short period and do not reinvest the profit for further growth. This tendency increases as the scale of companies decreases.

In plant visits in the Study, the experts of the Team, mainly visited OEM parts manufacturers. Therefore, their level of management was relatively high; there were not many problems. However, among the managers of REM manufacturers with Thai ownership, there are many who need to change their way of thinking to improve their management skills.

In the questionnaire survey that was conducted on Thai companies, almost 70% of the managers said they would want to attend any educational programs for learning enterpreneurship. Their desire to learn modern methods of management was strong. The problem is, What specifically should they be taught? For example, general-education activities, such as a seminar on TQC, would, by themselves, not be enough. What is necessary, instead, is practical education that can immediately be put to use in improving management and increasing profit.

[Recommendation]

A program for educating entrepreneurs, is proposed in this section giving several suggestions as to its educational content.

Note: In what follows, no special reference is made to the education of

entrepreneurs who want to start a business, since King Mongkut's Institute of Technology North Bangkok (KMITNB), with assistance from Germany and the cooperation of Technonet Asia, is already promoting such education through the Technopreneur Development Project.

5.1 Entrepreneur Re-education Program

1) Objective

The objective of the program will be to teach entrepreneurs the fundamentals of management. The educational content of the program must be practical and applied directly to business operations.

2) Target Recipients

The target recipients of the program will be owners, entreprenuers and managers of a wide range of SMEs engaged in manufacturing business, including managers of OEM parts manufacturers in supporting industry.

3) Executing agency

It is not necessary to limit agencies that will conduct the program. Universities, government institutions and NGOs that are currently conducting educational training would all be acceptable as an executing agency. However, it will be necessary to unify the content of the curriculum. The implementation agency of the government is to be DIP.

4) Incentives and Obligation

It should be open to any recipients. Nevertheless people who want to become beneficiaries of the institutional financing and lease support programs as suggested in this report should be obligated to take this program.

5) Content of Curriculum

A course will be designed for participants to complete by some 60 hours

using night times and weekends.

Five examples of the study subjects are given below. For each it would be necessary to prepare unified teaching materials and train the teachers in advance.

- Managerial principles in manufacturing business
- Labor management and personnel management
- Costing methods
- Method of feasibility study for investment
- Quality control and its cost

Since this program is for educating managers, general theory like that taught at universities should be minimized. Instead, it will concentrate on inculcating the basic thinking and costing methods needed by managers of manufacturing companies. The program teaches from the vantage point of how much manufacturing costs will decrease and profit increase if management is modernized. In view of national benefits it will enable natural resources to be used more efficiently for the wealth of the country as a whole. Several of the problems common to manufacturing companies especially to SMEs in developing countries will be now presented, so as to elucidate the program's aims and the standpoint required for preparing the teaching materials.

Shifting from commercial-capital mind to an industrial-capital mind

Many manufacturers turn over and recover their invested capital in a short period and do not reinvest the profit in equipment and machinery. This is known as a commercial-capital minded management. By this mind, within a few years machinery and equipment rapidly wear out and lose their competitiveness. Thus, several examples will be used to teach whether, in the long term, greater profit can be achieved from this commercial-capital minded management or from the industrial one.

Negligence and misunderstanding of quality control

There is a bigoted way of thinking for quality control: even if a company

puts money into quality control and improves quality, sales price will be kept at the same, resulting in losses. The program will inculcate that "quality control lies not for improving quality but reducing the defect rate." Then, based on cost calculations, it will teach how much profit will increase if the defect rate is lowered. Moreover, it will teach a method for calculating how much can be invested in the quality control for the purpose of lowering the defect rate. It is taught, for example, that "one off-grade product among ten products offsets profits obtained from the other nine products" showing cost calculation.

Giving priority to meeting delivery deadlines

Generally speaking, a product's competitiveness is based on three factors: quality, cost, and delivery (QCD). These three factors are closely related. And usually, quality improvement will be taken up first. (as mentioned above, quality improvement does not mean refining quality but rather eliminating defects.) Some people think that it will cost much to improve quality. Therefore, the program will propose that priority should be given to meeting delivery deadlines instead of quality improvement. Meeting delivery deadlines requires neither money nor extra personnel. It also inevitably leads to increased profit. To keep or shorten delivery, they will naturally recognize the importance of quality control: without quality control, products can't be delivered on time. Thus, teaching is more effective if it starts from delivery control that increases profit without entailing a cost.

Method of feasibility study for investment

For manufacturing a certain item, is it better to buy machinery or use manual labor? Or, what kind of combination of machinery and manual labor is appropriate? If machinery is to be bought, which would be better, automatic or semi-automatic? The program will teach how to make appropriate decisions on these cases from the standpoint of long-term profit.

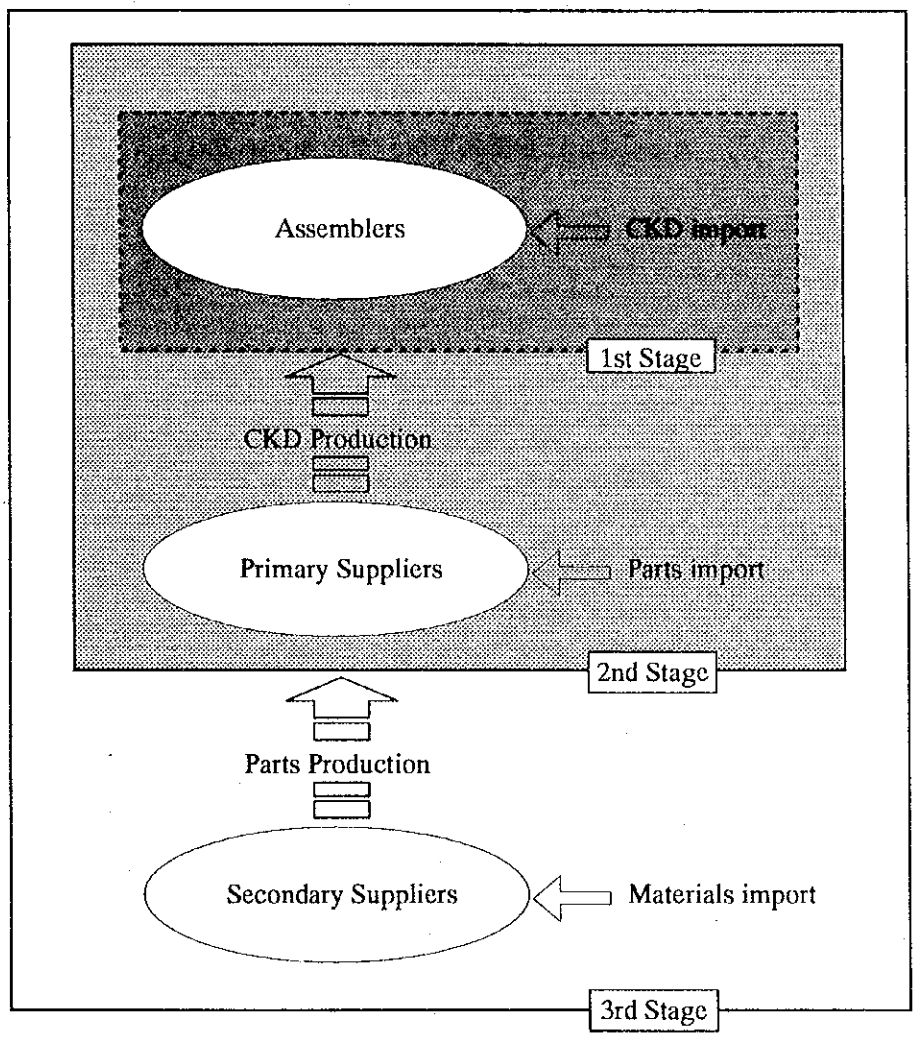
Methods of calculating cost and profit

The program, based on cost calculation and profit calculation will teach

how to make a decision, in such things as: how many machines can be bought if personnel expenses are cut by the amount of one person's salary; or that, if labor productivity is increased, profit will rise even if production volume decreases. In countries which have low cost labor, effects by personnel cost reduction is unexpectedlly large. Moreover, there are many managers who do not understand the concept of "depreciation" of machinery and facilities. The program will therefore inculcate an awareness, based on calculations, of how much depreciation burdens can be lightened through the business of small profits with mass production.

11.3.6 Investment promotion

The primary aim in promoting investment in supporting industry is to get companies to penetrate the parts manufacturing field so as to strengthen the structure of industry as a whole. The reasoning behind this aim will be explained based on the following diagram.



In the first stage, assemblers import parts in the form of CKD or SKD and assemble finished products. In the second stage, primary suppliers import parts, make CKD or SKD and supply them to the assemblers. In the third stage, secondary suppliers import materials, make parts and supply them to the primary suppliers. Subsequently, the structure will expand backwards, namely to tertiary and more downstream suppliers. As supporting industry grows bigger, the amount of imports decreases and domestic value added

increases. The Thai automotive industry and electrical/electronic industry can be seen as being in second stage in the diagram. In the future they will enter the third stage creating more SMEs.

To increase the number of companies penetrating the parts manufacturing field is an indispensable element for development of SIs. Three methods will be considered to this end.

1) to attract foreign investment.
2) to incubate entrepreneurs.
3) to assist penetration from other subsectors.

(1) Promotion of Foreign Investment in Area of Supporting Industries

[Conclusion]

Thailand, through such governmental efforts as BOI, has succeeded in attracting the foreign investment. Until now, however, most of these companies attracted have mainly been larger scale corporations. As Prime Minister emphasized at a seminar held in Tokyo in September, 1994, one of the cuewal publicies is to to attract foreign investment in SIs, in which SMEs preponderate.

The points to be considered when attracting foreign parts suppliers or SMEs to Thailand, as learnt through the questionnaire survey conducted in Japan, are mentioned below. Although the questionnaire was given to Japanese companies, the results of the questionnaire survey would probably also apply to the Asian NIES – Taiwan, Korea, Hong Kong, Singapore, or in the United States or Europe.

The top five worries that the surveyed Japanese parts suppliers or SMEs had about investing in Thailand are listed below. The percentages shown should be read, for example, "50.7% of Japanese SMEs were worried about 'managing local employees.'"

1)	Managing local employees	50.7%
2)	Lack of personnel despatch from Japan	43.0%
3)	Lack of investment capital	32.6%
4)	Ignorance about local legal and accounting procedures	29.7%
5)	Uncertainty of potential buyers of products	23.4%

Moreover, in response to a question about the method of acquiring the industrial land and buildings for a production base, 44% of SMEs of Japan with 300 employees or less said that they would want to rent floor space in an apartment-type factory. In addition, 79% of the companies said that, when investing in Thailand, they would want to bring in some "used machinery." Moreover, 75% of the companies said they would want to own more than 50% of the stock so as to have the right to control business.

[Recommendation]

As a method for attracting foreign supporting industry (mostly SMEs) to Thailand – a method that can answer most of the above worries and desires – the method of encouraging and supporting investment by groups of companies will be recommended below.

6.1 Grouped Investors Attraction Program

1) Objective

SMEs in any countries generally lack knowledge and experiences about foreign investment, and have a variety of worries and weakness in the prospect of making a foreign investment. Bringing those potential investors together into a group(s) would alleviate their worries and weakness in making foreign investment. It would also have numerous advantages for the country receiving the investment; for example, it would lessen works of taking care of each company individually.

2) Composition of Company Groups

It would be preferable if groups were composed of some companies in a same region or family companies, rather than forming groups from competitors in the same industry. This would make it easier to unify intentions within the group. In other words, the groups should be composed of companies that already have some kind of connection with each other.

3) Factory Location

All of the companies in a group will be located in the same industrial estate. Another possibility would be to encourage them to locate into the same factory apartment.

4) Common Service Facilities

Common service facilities will be established in the industrial estate, or in a room of the factory apartment, that houses the group. The facilities will

carry out accounting operations and legal procedures for the group members, and also provide them with advice about labor management. A common use canteen might also be possible, and an interpreter(s) should be employed. All expenses for the common facilities will be shared by the beneficiaries (the grouped companies).

5) Incenives for Group Investors

In addition to the current investment incentives, various advantages shall be provided to the group investors: for example, advantages related to customs duties on imported used machinery. (Used machinery is currently taxed, on the same value as new machinery.) Consideration will also be given to enabling the foreign investors to practically control management even having 49% stock share. A way is to involve a Thai investment company or a finance corporation in sharing small part of stocks as a neutral share holder.

6) Executing Agency

Board of Investment (BOI) and DIP of the Ministry of Industry

7) Expected Benefits from This Program

When it comes to conducting a pre-investment survey (F/S), SMEs often have nobody local to assist them, and are unfamiliar with how to look for a partner. Individually, companies may lack financial resources and personnel, but if they pool their resources as a group, various benefits, tangible and intangible, can be expected by both the potential investors and the receipant country. A company of SMEs making a foreign investment by itself is generally more susceptible to failure than a larger company. Group investment may be effective in decreasing unsuccessl investment cases.

(2) Assistance for Incubation of Entrepreneurs

[Conclusion]

Modernization and strengthening of the parts industries will be sustained by the efforts of new and dynamic entrepreneurs equipped with expertise in modern technologies. Many of these entrepreneurs dared to venture out on their own business after acquiring their expertise through many years of work at a large manufacturing company.

The questionnaire survey in Thailand revealed that, except for the managers dispatched from foreign companies, the largest proportion of the managers' background, 36.1%, were people who had become independent through a spin-out from their previous job. The second largest group, 32.8%, were people who had been promoted from the ranks. Third, 31.1%, were people who had succeeded to the family business. The questionnaire also asked about the field of expertise of the managers, including those in foreign companies. The No. 1 answer, given by 38.6%, was "technical"; second (30.5%) was "administrative/accounting,"; and third (24.0%) was "sales." Thus, a "technical" manager in a spin-out has the most frequency.

In 1993, King Mongkut's Institute of Technology North Bangkok (KMITNB), with assistance from Germany and the cooperation of Technonet Asia, inaugurated the Technopreneur Development Project. This project has established managerial training courses for people with technical expertise, whom it teaches to be entrepreneurs.

In addition to this type of training, financial support is indispensable to construct a factory and begin operations. People who want to spin out from a large company and start their own enterprise generally have technical expertise. In many cases, the company which they used to work for would also be willing to buy products from their new enterprises. However, they don't have enough capital, and they don't have collateral for loans. Thus, financial support is indispensable to operate these new enterprises.

[Recommendation]

Here, an Entrepreneur Incubation Program that will assist entrepreneurs financially is recommended.

6.2 Entrepreneur Incubation Program

1) Objective

The objective of the program is to lease a factory to entrepreneurs who shared his own business in SIs until they are able to stand on their own feet.

2) Beneficiaries

As a rule, the beneficiaries will be limited to people who have technical background for a certain period in parts industries and also have completed the courses in the Technopreneur Development Project.

3) Factory Land and Factory Buildings

The government will provide the land and factory buildings, or industrial estates will rent them at a low rate. The entrepreneurs will use them at free of charge or for a nominal rent. The period of occupancy of the land and buildings will be 3 years. After that, the entrepreneurs will become independent buying their own land and buildings.

4) Machinery

Machinery will be leased for 8–10 years and installed in the above–mentioned factories. Public funds are preferable for the financial source for e proposed leasing program to provide entrepreneurs with a low interest leasing. Another way is to assist private leasing companies in supplement of part of commercial–based interest rate. In addition, only machinery that are modern to a certain extent will be leased. After 3 years, the machinery will be moved to the entrepreneur's new factory, where he will continue to use it. When the lease period expires, ownership of the machinery will pass to the entrepreneur. (This method is called "hired purchase method".)

5) Number of Beneficiaries

If land and buildings for 20 factories are provided, it will be possible to develop 80 entrepreneurs or in 7 years.

6) Method of Raising Capital for the Program

If the government directly conducts the program, the funds could be sourced from a mixture of public funds, foreign financial assistance, investment companies, etc. If foreign financial assistance can be obtained, the government could borrow the capital that would then be used for acquiring machinery and equipment for the leases. This is a modified two-step loan system.

7) Benefits expected from This Program

For the entrepreneur, the biggest advantage is that he won't have to arrange his own capital to buy land, buildings, and machinery. Since he won't need to borrow money, he won't need collateral, either. To start operations, all he'll need is to arrange to meet the expenses for personnel, utilities and raw materials. If he decides to give up along the way, moreover, he can just cancel the lease; there will be no remaining debt. Finally, if, during the 3 years, he accumulates enough capital to purchase land and buildings, he will be able to become independent.

8) Executing agency

DIP under the Ministry of Industry

(3) Assistance for Diversification to OEM Parts Industry

[Conclusion]

In the questionnaire conducted on Thai supporting industry, 44% of the auto parts companies and 38% of the electric/electronic parts companies said they wanted to start or expand their subcontracting operations. Small companies have a higher frequency of 55% in their intention to start or expand subcontracting business. However, due to reasons – "lack of information about buyers," "many customers have already established their own subcontracting networks," "insufficient production capacity to cope with large orders," "lack of selling capability" – they have not entered the OEM parts field.

With regard to entering the OEM parts field from other fields, some plastics-processing companies that are now producing household goods want to advance into the auto parts market. Other companies now manufacturing auto parts want to manufacture electric/electronic parts as well. Moreover, there are probably motorcycle parts manufacturers who want to enter the auto parts field.

However, there are problems standing in the way. For example, there is a difference in technical level (OEM parts are high-quality) and a difference in production capacity (OEM parts are produced in large volume); and solving these problems would require the introduction of technology. An additional problem is lack of access to customers.

Another possibility is to get companies now producing only repair parts (REM) to enter the OEM parts field. However, a higher level of quality is demanded for OEM parts, which means that the REM companies would probably have to invest in upgrading their technology. Another problem is that most companies that manufacture REM parts alone are not very interested in entering the OEM parts field. The reason is that the current market for REM parts is a seller's market, so that these companies are now turning a considerable profit. Also, managers of these companies generally are commercial-capital minded people, they try to accelerate their capital's turnover rate and increase profit in a short period of time. Continually upgrading technology is not a major concern to them.

[Recommendation]

6.3 Assistance for New Comers' Penetration

To get companies from other fields to enter the OEM parts field, financial assistance would be of less importance, since the companies were already set up and are running. More attention would have to be given to introducing new technology and promoting subcontracting contracts. Recommendation for each of these matters have been made imprevious sections. One method of introducing new technology would be to promote technical tie-ups. In the survey of Japanese parts manufacturers, 93 companies said they would be willing to transfer (sell) technology to a Thai company. Achieving such transfers would require matching these companies with Thai companies that want to enter the OEM parts field.

Of course, these enterprises are to be eligible for the programs recommended in the report such as Subcontracting Assistance Program, Technology Extention Services, Assistance for SMEs in Machinery Leasing, etc. DIP and BOI will jointly promote the program.

(4) 500 Firms Creating Project

Various methods for increasing domestic and foreign investment in the parts industry have been described in sections (1), (2) and (3) above. These methods can be incorporated into a single project called the 500 Firms Creation Project. The project's goal will be to increase the number of OEM parts manufacturers – primary suppliers, secondary suppliers and below – by 500 companies by the end of 2001, so that, in addition to the approximately existing 500 to 600 suppliers of the automotive industry and electrical/electronic industry, there will be a total of 1,000 or more by the target year. For reference, the breakdown of each program in the project are estimated below.

	1995–2001
1) Grouped Investors Attraction Program	300
2) Entrepreneur Incubations Program	80
3) Assistance for New Comers' Penetration	120
	500

11.4 Master Plan for the Development of Supporting Industries in Thailand

11.4.1 Elements of master plan

Section 11.2 clarified the objectives and framework of a Master Plan. With regard to the individual support elements of the framework, Section 11.3 described conclusions drawn from the findings of in Study as well as recommendations made for the future development of supporting industries. Among all the elements of the Master Plan, a term "Program" was used for new attempts in Thailand, but not for strengthening or improvement of existing programs. In this section, however, the term "Program" will be also used for the latter for convenience's sake. Table 11.4-1 summarizes all the elements of the draft Master Plan for which conclusions and recommendations were made in Section 11.3.

To foster Thai supporting industries, it is necessary to draw up a variety of programs. A program for attaining a certain objective involves several elements. A package of financial and technical supports is necessary, for example, to promote subcontracting business. Therefore, the relationships between programs are indicated in Table 11.4-2.

Figure 11.4-1 illustrates a relationship between programs by objective to clarify the positioning of programs in the Master Plan. The objectives of the Master Plan as shown in the figure are listed as follows:

1) Investment:
   Enlarge the base of the parts industry by promoting investments.
2) Subcontracting:
   Link suppliers and buyers in the parts industry.
3) Technology:
   Find out a better technology transfer method in the parts industry.
4) Manpower:
   Give education and training to employees in factories.
5) Management:
   Re-educate the management to improve the industrial level.
6) Industrial infrastructure:
   Consolidate the industrial infrastructure to support the attainment of the above-listed objectives.

11.4.2 Scheduling and priorities in the master plan

Figure 11.4-2 shows the scheduling of the 7-year Master Plan. The term of 7 years was adopted for the reasons: (1) The term of 5 years is too short to fully implement the Master Plan, and the term of 10 years involves a high uncertainty in carrying out the Plan. Thus, the term of 7 years was adopted as the median between 5 and 10 years; (2) It is desirable that the Master Plan is to have considerable effects as expected at the same time when the 8th 5-Year Plan (1997 - 2001) is completed. It is premised that all the programs would continue to be implemented after their effects had been reviewed and improved at the expiration of the 7-year term.

Priorities in all the elements will be described below, referring to Figure 11.4-2. According to the schedule, all the programs must start to be carried out or studied and prepared in 1995, except several programs (1.4, 2.2, 4.2, 6.2 and 6.3) that start in 1996 (marked with "○" at the starting point) under the new department and laws; namely "Department of Small-and Medium-Scale Industries" (1.3), the "Small and Medium Enterprise Act" (1.1) and the "Subcontracting Promotion Act" (1.2).

(Note) As mentioned before, if it will take more than one year for establishment of the new department in MOI and the proposed laws, those programs starting by the mark with ○ shall start immediately within the framework of National Supplier Development Program (NSDP) by a joint work of MOI and BOI. In such case, those programs shall start since the beginning of 1995 with a mark of as their starting points.

The programs which have been partly implemented at present but are to be strengthened, expanded, improved or modified are marked with dotted lines in the "1994" and subsequent columns. These programs may be immediately resumed at the beginning of 1995, after necessary reviews and preparations. The program "Preparation of Industrial Statistics" (1.4) under way is scheduled to be resumed by building up a complete total system at first, preferably after the "Department of Small and Medium Industries" has been created.

New programs, marked with "●" at the begining of 1995, are scheduled to start at the beginning of 1995 including researches and preparations made for them.

All the programs in the Master Plan may produce effects by linking with each others so that they cannot be ranked in priority. As a reference, however, Table 11.4-3 indicates three ranks of programs in priority, considering the time series, and urgency.

11.4.3 Potential benefits by implementation of the master plan

The potential outcomes of each program by the implementing Master Plan are shown in the rightmost column of Figure 11.4-2. The data in the column are estimated values, which may be considered as targets. The potential effects of each program will be described below.

(1) Policy & Legislation

The programs will clarify a responsible organ for fostering Thai SMEs as a majority of SIs, and also the applicable laws for the fostering of SIs and SMEs. A committee type approach will have limitations in the implementation of the Master Plan.

(2) Market Development

It can be expected that 20 to 30 new subcontracting businesses will be created annually, at least 150 in total for 7 years, with supports of the extended BUILD scheme. For this program period, some companies may enter in subcontracts independently or without any public support. If, in total, 500 new subcontracts are made for 7 years, 500 new subcontractors will be added to the 500 to 600 existing subcontracts totaling 1,000 or more in the automotive and electrical/electronic industries.

(3) Technology Upgrading

It is estimated that 180 companies will be able to receive a technical extension services for 6 years after 1-year preparations under the "Technology Extension Service Program" (3.1). In this case, it is assumed that 15 companies in each of 4 industries (casting, presswork, plastic molding and mold- and die-making) would be able to receive the technical extension

services for 2 years.

At present, about 2,000 workers in 31 trades take the national skill standards licensing examination (3.1) and about 50% of them are successful. Based upon these data, it is conservatively estimated that 480 workers in the new 4 trades will be able to pass the skill licensing examination (3.2) and obtain Grade 2 and 3 licenses for 7 years.

It cannot be predicted in number whether or not the "Public Technical Center Activation Program" (3.3) will permit to transfer the operation of public centers to NGOs. There are now 2 Joint Industry-University schools (3.4) in Thailand. It is assumed that a new school may be annually installed under this program.

(4) Financial Support

Expansion to regions of the network of loan agents of credit facilities provided for SMEs is mainly a matter of discussion between the government and private sectors such as commercial banks and local banks. Therefore, the loan agent network should be completed within 2 years, because it is not necessary to install any new bank. The program "Machinery Leasing Assistance for SMEs" (4.2) assumes that 100 enterprises per year would receive the governmental assistance like guarantee for payment of leasing fee and supplement of interest rate for leasing.

(5) Upgrading of Management

The "Entrepreneur Re-education Program" (5.1) forecasts that it is possible to re-educate 480 managers, especially in Thai-owned companies, for 7 years. The number of managers is likely to increase, if the participation in this program is a condition for receiving a financial assistance for SMEs. In this case, it is assumed that 20 managers would participate in each of 4 courses per year.

The "Continuation of Technoprenuer Development Project" (5.2) is now carried out with an annual program and 3 courses per year. This project is scheduled to be carried out for 7 years.

(6) Investment Promotion

This program plans to increase the number of companies from the existing 500～600 to 1,000 or more for 7 years creating 500 projects in supporting industries for automotive and electrical/electronic sectors.

	No. of new companies
Foreign investment	300
Entrepreneur incubation	80
Investment by other sectors	120
Total	500

Table 11.4-1 SUMMARY OF PROPOSED PROGRAM

Proposed Programs	Objectives	Supporting Measures	Operational Institutions
1. Policy & Legislation			
1.1 Basic law of SMEs development	Unification of SME's policies.	Establishment of basic law.	Parliament, DIP
1.2 Law of subcontracting promotion	Subcontracting promotion and protection of subcontractors.	Establishment of basic law.	Parliament, DIP
1.3 Restructuring of DIP for SMEs & SIs promotion	Centralization and reinforcement of SME's policies implementation.	Establishment of basic law and department for SMEs.	Parliament, DIP
1.4 Preparation of industrial statistics	Basic data preparation for industrial development planning.	Build up data base system.	DIW & concerned
2. Market Development			
2.1 Expansion of BUILD activities	Subcontracting intermediation.	Information supply, trade fair, visiting parent enterprises regularly, etc.	BOI, DIP (NSDP)
2.2 Subcontracting assistance program	Subcontracting business promotion	Mediation of financial services, exemption of company tax.	BOI, DIP (NSDP), FTI
3. Technology Upgrading			
3.1 Technology extension service program	Improvement of soft wares in production & quality control skill.	Traveling clinic service.	DIP, FTI
3.2 Expansion of Occupational Skill Standards system	Upgrading of occupational skill and development of human resources.	Expansion to parts industries, favorable salary system and consignment testing system.	DSD
3.3 Public technical center activation program	Improvement of public services for industrial testing, R&D, etc.	Consigned management of institutions to NGO.	DIP, TISI, FTI, etc
3.4 Joint industry-university training schools	Fostering of skilled workers working in factories.	Providing of investment privileges.	University, Priivate sectors, Industrial estates
4. Financial Supports			
4.1 Improvement of SMEs' financing schemes	Expansion of financial service network for regional SMEs.	Promoting of loan agents network.	SIFC, IFCT, etc
4.2 Assistance for SMEs' in machinery leasing	Financial support for SMEs by a leasing system.	Interest subsidizing system, payment guarantee for leasing.	Leasing companies, Fiscal Policy Office
5. Upgrading of Management			
5.1 Entrepreneur re-education program	Improvement of management skill in manufacturing.	Teaching management by cost analysis method.	DIP
5.2 Continuation of Technoprenuer Development Project	Entrepreneurship education for new comers.	Continuation of KMITNB Program (TDP).	KMITNB, DIP
6. Investment Promotion			
6.1 Grouped investors attraction program	Investment attraction of foreign SMEs.	Assistance & incentives for grouped SMEs investors.	BOI, DIP
6.2 Entrepreneur incubation program	Extension of the foundation of parts industry by Thai capital.	Supporting for establishing new company with leasing system	DIP
6.3 Assistance for new comers' penetration	Extension of foundation of Thai parts industry.	Promoting technical collaboration with foreign companies.	BOI, DIP (NSDP)

Table 11.4–2 INTERRELATION BETWEEN PROPOSED PROGRAMS AND AREAS OF ASSISTANCE

(Remark) XX : The area mainly concerned to the program X : Areas related to or involved in the program	1. Policy & Legislation	2. Market Development	3. Technology Upgrading	4. Financial Support	5. Upgrading of Management	6. Investment Promotion
1. Policy & Legislation						
1.1 Basic law of SMEs development	XX					
1.2 Law of subcontracting promotion	XX	X				
1.3 Restructuring of DIP for SME's & SIs promotion	XX	X	X	X	X	
1.4 Preparation of industrial statistics	XX					
2. Market Development						
2.1 Expansion of BUILD's activities		XX				
2.2 Subcontracting assistance program		XX	X	X	X	
3. Technology Upgrading						
3.1 Technology extension service program			XX	X	X	
3.2 Expansion of Trade Skill Standards system			XX			
3.3 Public technical center activation program	X		XX			
3.4 Joint industry–university training schools			XX			
4. Financial Supports						
4.1 Improvement of SMEs financing schemes				XX		
4.2 Assistance for SMEs in machinery leasing				XX		
5. Upgrading of Management						
5.1 Entrepreneur re–education program				X	XX	X
5.2 Continuation of Technoprenuer Development Project					XX	X
6. Investment Promotion						
6.1 Grouped investors attraction program						XX
6.2 Entrepreneur incubation program			X	X		XX
6.3 Assistance for new comers' penetration		X	X	X		XX

Table 11.4-3 PRIORITY FOR EXECUTION OF THE PROPOSED MASTER PLAN

Program	Priority		
	1st	2nd	3rd
1. Policy & Legislation			
1.1 Basic law of SMEs development			
1.2 Law of subcontracting promotion			
1.3 Restructuring of DIP for SMEs & SIs promotion			
1.4 Preparation of industrial statistics			
2. Market Development			
2.1 Expansion of BUILD's activities			
2.2 Subcontracting assistance program			
3. Technology Upgrading			
3.1 Technology extension service program			
3.2 Expansion of Trade Skill Standards system			
3.3 Public technical center activation program			
3.4 Joint industry-university training schools			
4. Financial Supports			
4.1 Improvement of SMEs financing schemes			
4.2 Assistance for SMEs in machinery leasing			
5. Upgrading of Management			
5.1 Entrepreneur re-education program			
5.2 Continuation of Technoprenuer Development Project			
6. Investment Promotion			
6.1 Grouped investors attraction program			
6.2 Entrepreneur incubation program			
6.3 Assistance for new comers' penetration			

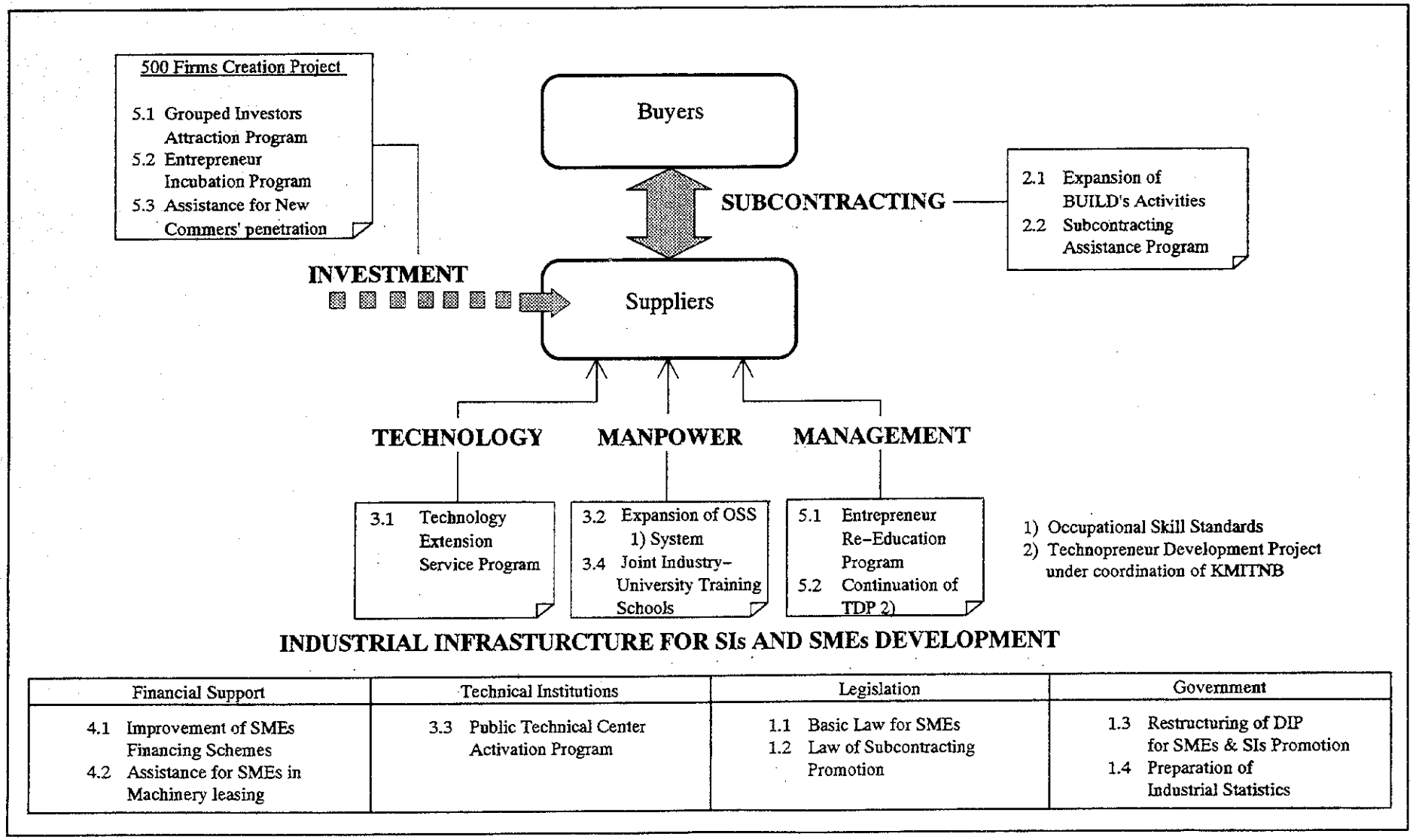


Figure 11.4-1 MASTER PLAN FOR DEVELOPMENT OF SUPPORTING INDUSTRIES

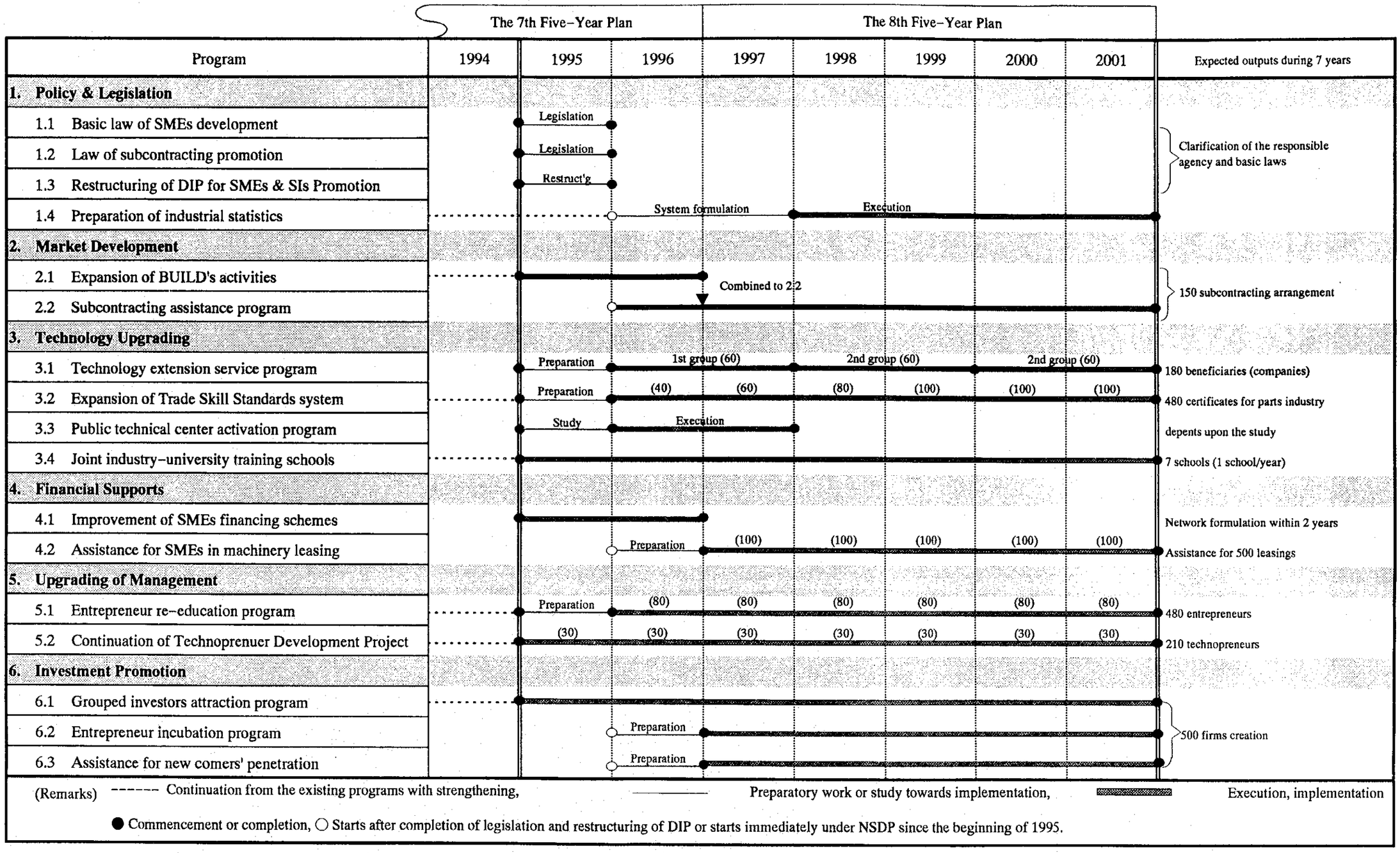


Figure 11.4-2 TIME TABLE FOR IMPLEMENTATION OF THE PROPOSED MASTER PLAN: 7-YEAR PLAN

11.5 Policies Recommendations for Improvement of Competitiveness

11.5.1 Customs duty and clearance systems

Complaints about the government most heard by the Team in the interview survey for enterprises in Thailand were related to custom duties and clearance. The most serious complaint of custom duties concerns inconsistent and unbalanced tariff rate system, while that of custom clearance comes from a lack of transparency in custom clearance procedure and practice. These complaints are lodged by most of enterprises interviewed, equally among foreign-affiliated and local enterprises, and both import and export companies. Undoubtedly, these problems have negative impacts on international competitiveness of Thai industries and adversely affect attraction of foreign investment to Thailand as well as export promotion from Thailand. More important, these problems are widely known among many countries and foreign potential investors and are considered to be one of weaknesses of Thailand, which offset some other advantages offered by the country. The Thai government recognizes these problems and is considering and announcing various improvement measures. Yet, complaints continue.

(1) Import tariff rate system

In the FY1994 budget, import duties account for 17.5% of the government revenues. This is reflected in the country's import tariff rates that is highest among ASEAN countries, with the average tariff rate of 31.0% of Thailand compared to 18.0% as the average for five ASEAN countries. Now, the government is in the process of reducing the tariff rates. Regionally, ASEAN countries have decided to reduce tariff rates under the Common Effect Preferential Tax (CEPT) system, in AFTA (ASEAN Free Trade Area). Ministerial Conference in 1994 agree to speed up the overall tariff reduction schedule from 15 years (to be completed in 2008) to 10 years (to be completed in 2003). Aside from the CEPT-AFTA scheme, the Thai government already announced to lower the import tariff rates having 6 levels ranging from 0% to 30% within the next 5 years, and the scheme is now under way. For instance, industrial products whose which maximum tariff rate is 20% are subject to the following categories:

Raw materials: 0%, 1%, 5%
Intermediates: 10%
Finished goods: 20%

In fact, Thailand is leading other ASEAN countries to lower its tariff rates along the above guideline.

Apart from this medium- and long-term policy, complaints from the private sector focus on more immediate problems including 1) inconsistent and inbalanced import tariff rates among items and 2) higher tariff rates for raw materials and intermediates than those for components manufactured by using the former. As a result, domestic CKD products lose cost competitiveness by this reason.

In a sense, the above complaints of 1) and 2) can be boiled down to companies' selfish desire to lower tariff rates for their own raw materials purchased, not from the overall economic viewpoint. But, complaint suggests a major problem involved in the government's 5-year plan to simplify tariff rates into the 6 levels. It is difficult to set different tax rates by categories of raw materials, intermediates, and finished goods. Any raw materials and intermediates are finished goods for their producers, and any finished goods are raw materials or intermediates for companies who use them. This relationship continues from mineral resources to end user's products, forming a chain of raw materials-intermidiates-finished goods. Although, the Thai government continues its efforts to classify all the items into these three categories, this method may lack rationality

As far as manufacturing sector is concerned, it will be more reasonable to uniformly lower tariff rates of all manufactured goods. In fact, this follows the intent of the CEPT-AFTA scheme. In the process, the more reasonable categories in taxation may be introduced for the 5-year tariff reduction plan, such as "mineral resources," "primary processed products," and "secondary processed and all other industrial products."

(2) Customs clearance system

Complaints about the customs clearance system, both for exports and imports, concentrate in two issues; one is excessively long time required for clearance procedures, and the other is the lack of transparency in clearance service. Together with the customs duty system, these problems are viewed as

institutional and man-made shortcomings of the country. Clearly, the unmodernized clearance system impairs the ability of Thai industries to compete internationally. Major complaints from the private sector are listed as follows. All of them are related to the lack of clarity and transparency in the current system, as well as its backwardness.

1) Excess valuation of imported products due to imposition of import duties based on "deemed value"
2) Delay in drawback of import taxes to exporters by the system of keeping all documents at customs
3) Delay in export and import procedures due to whole inspection of customs officers
4) Delay in export and import procedures due to the use of the customs (signature) card required at the time of application
5) Presence of unnecessary practice, tea money, to customs officers

The Customs Department under the Ministry of Finance recognizes these problems and have announced various corrective measures. These problems seem to represent more backwardness of the country compared to neighboring countries, such as Singapore, Malaysia, and Hong Kong. Unless drastic deregulation is initiated to modernize the customs clearance system, it will continue to have negative impacts on international competitiveness of the country

11.5.2 Problems in export promotion

As judged from statistical data analysis, international competitiveness of the Thai manufacturing sector is summarized as follows:

1) In terms of industrial concentration, the country's automotive parts industry, is largest among other ASEAN countries, while its electrical/electronic industry is ranked at an intermediate level between the group of Singapore and Malaysia and the group of Indonesia and the Philippines.
2) In the area of raw and shape materials, Thailand boasts the highest concentration of enterprises in the region, except for Singapore's die-making industry.
3) Measured by total cost of production factors, Thailand is ranked between

Malaysia and Indonesia.

4) Japanese companies operating in the country grade local suppliers below Malaysian competitors and above Indonesian suppliers, while pointing out various problems.
5) Analysis of trade statistics indicates that competitiveness of Thailand is ranked below Singapore and Malaysia and above Indonesia. At the same time, competitiveness in automotive parts as well as electrical/electronics components seems to be on the rise.

Competitiveness of ASEAN industries, their development stages (which in turn affect competitiveness), trade and investment policies of governments, foreign exchange rates, and investment by Japanese companies have been changing rapidly. On the other hand, statistics and research reports showing the above data and information, no matter how quickly published, always lag behind realities. As a result, any desk work will be not enough to evaluate their export potential. Field surveys covering price-related factors (both supply and demand sides) as well as non-price factors are essential. Furthermore, marketing research on competing products, is important to estimate demand accurately. The list is inexhaustible and variable according to individual projects. In any case, it suggests the nature and scope of efforts involved in identifying potential markets for certain products.

In short, growth of exports by supporting industries in Thailand requires the following preconditions to be fulfilled:

1) To maintain competitive foreign exchange rates;
2) To attract foreign parts manufacturers;
3) Reduction of tariff rates for imported raw materials;
4) Deregulation and the streamlining of export and import procedures (particularly, customs clearance and drawback procedures);
5) Productivity improvement, cost reduction and the improvement of production techniques and skills in local industries;
6) Product development by OEMs;
7) Quality improvement by REMs;
8) Export promotion activities for supporting industries; and
9) Guidance and advice to small and medium scale enterprises in the areas of marketing and export procedure.

11.5.3 Problems in investment promotion

The worldwide development and investment environment surrounding Thailand has been changing at an accelerated rate throughout the 1980s and 1990s. In particular, the vigorous foreign investment in Asia starting in the mid-1980s, have further expanded by participation of new players, China and Vietnam. These moves are characterized by the following 4 points:

(1) Move toward the opening of the economy and financial liberalization including foreign currency is seen throughout the region.
(2) Geographical expansion is not limited to inter-country expansion. Rather, countries are increasingly taking more effective policies to induce foreign investment to lagged regions for balanced and accelerated economic development.
(3) Promising or key industries are increasingly identified in target subsectors for strategic development.
(4) More and more countries and governments want to fulfill the above policy objectives through the strengthening of cooperative relations between the public and private sectors.

On the other hand, foreign investors are increasingly pursuing strategy to identify the best business opportunity and select a host country and a desirable form of investment by comparing these fundamental changes in various countries.

The more selective attitude of foreign investors is spurred by the emergence of countries to attract foreign investment vigorously, which expands a range of choice.

Foreign investors are liable to evaluate new factors including development environment in a particular host country, its business environment in terms of productivity, major cost factors including human resources, and future market potential.

As the starting point, the result of the questionnaire survey for foreign (Japanese) investors indicates that Thailand is perceived as a country with a long history to invite foreign investment, being endowed with favorable images, and offering business environment with medium- and long-term growth potential supported by huge hinterland.

Now, in order to further attract foreign investment, the following efforts are

required to improve the country's investment climate, in addition to step-up of the ongoing efforts:

1) Provision of market and other information to foreign investors;
2) Policy decision accompanied by concrete schedule;
3) Continued efforts to match domestic and foreign companies, with development of data bases;
4) Fostering of business opportunities in a wider range of industries;
5) Exchange and interaction within each industry, and fostering and expansion of trade associations;
6) Exchange of technical information as well as technical education and training as a place for collection and dissemination of broad-based information;
7) Development of related infrastructure, including the nurturing of the environment that helps meet requirements for the country to play the role as a bridge, driver or platform for development in neighboring countries.
8) Continued communication with foreign investors, and broad-based support system from investment approval to follow-up.

11.5.4. Localization of the materials industry and the international competitiveness of the parts industry

Thin plate sheets and plastics shre a large portion of the materials used in the automotive and electrical/electronic industries. It is generally believed that, to increase the international cost competitiveness, it is necessary to expand a domestic production from finished goods manufacturing, via intermediate materials and parts industries to raw materials.

Thus, in Thailand, with regard to thin steel sheets, coil centers were completed and began producing hot-rolled steel sheets in 1994, and a project(s) for producing cold-rolled steel sheets has come into view. Projects for even more upstream iron and steel factories are also being discussed. In upstream plastics as well, a petrochemical complex based on natural gas (NP1) has almost been completed; construction has begun on a second petrochemical complex based on naphtha (NP2); and a project for even more upstream a crude oil refinery has been broached.

In this report the Study Team have just reported this situation as a fact. No special recommendations were made for the processed materials industry or the raw materials industry. The reasons for this are as follows.

1) Projects in the materials industry, especially iron and steel factories and petrochemical complexes, are independent projects that require a gigantic investment; and, as such, they should be national projects. It is difficult to make specific recommendations for them from the viewpoint of the promotion of supporting industries. The biggest demand for steel materials comes from outside the parts industry – from the construction and building industries. In plastics as well, the demand from outside supporting industry – for the pipes and films used in construction, agriculture, and household sundries, etc. – is great.

2) Detailed feasibility studies for high realizable projects in the materials industry have most likely already been done, and recommendations made accordingly. The Team does not have basis and informations to make different recommendations on such feasibility studies and is not in the position regarding the objectives of the Study.

3) For steel sheets and plastics used in the automotive and electric/electronic industries, requirements for quality (processability, physical properties and so on) are far more severe than those for the materials used in construction materials and household sundries. Therefore, if, in promoting the domestic manufacture of materials, the parts industry is forced to use materials whose quality is lower, its international competitiveness will end up being harmed.

The thinking of the Team on the relationship between the parts industry and promoting the domestic manufacture of materials will now be presented. The negative effects caused in other countries by forcing the parts industry to use domestic manufacture of materials are seen as object lessons and points to heed.

1) Projects in the materials industry involve gigantic investments. The materials produced at new plants constructed in developing countries usually have less international competitiveness than internationally traded products. As a result, the domestic materials industry ends up being protected by high tariffs and preferential privileges. Accordingly, parts

industries must use the domestic materials with high price and low quality and then unavoidably end up losing their international competitiveness of parts industry.

2) It is necessary to be aware that the materials used for parts industries and those for construction and sundries are two different things. Parts industries should not be forced to use domestically produced materials in order to maintain the international competitiveness of the parts industry, the import of the materials used in that industry should not be restricted; it should be left instead to the market economy.

3) Regarding the materials used in the parts industry, imported materials (internationally traded products) generally have the highest quality and the most international competitiveness. In this survey, except for the tariff rates and the prices protected by them, the Team hardly heard anything unfavorable from the Thai parts industry about imported raw materials.