

2. Wooden Furniture Industry

2-1 Framework of Development Program for the Wooden Furniture Industry

2-1-1 Basic Perspective

The key to the development of the Philippine wooden furniture industry as an export industry will depend on the achievement of the following two conditions: 1) the strengthening of export marketing activities; and 2) the improvement of the fundamental industrial performance to meet the needs of export market. (Refer to Figure IV-2-1.)

(1) Strengthening Export Marketing Activities

The strengthening of export marketing activities is required so that the present export capability can be utilized as effectively as possible, while at the same time increasing the understanding of export market needs by increasing opportunities for contact with export markets.

Export market needs include: 1) needs related to the requirement on products such as quality, design, and pricing; and 2) needs related to the business practices such as the observance of delivery schedules and the processing of claims. Some Philippine furniture manufacturers have already become involved in export business mainly to the markets of United States and Western Europe, but even these firms still fail to satisfy these needs.

The followings need to be taken in order to make suitable approaches to export markets: 1) strengthening of market research and information gathering activities; and 2) suitable approaches to export markets based on the market research.

(2) Improving the Performance of the Industry and Firms

The most effective means of improving the fundamental performance of the industry and firms are for firms to acquire the business know-how through tie-ups with firms in industrialized countries. In establishing such relationships, however, the local firm is necessary to have a technology and management capacity which is attractive to overseas buyers or firms. It is therefore necessary to meet as soon as possible the basic technology and management requirements for the export business.

The followings need to be taken in order to meet these basic requirements related to technology and management.

1. Understanding of the quality levels required by the market and improvement of *quality consciousness*
2. Acquisition of technological know-how for the improvement of product quality and the introduction of necessary and appropriate production machines and equipment
3. Understanding of the importance of production management centering around delivery control and cost management, and acquisition of the production management technology

(3) Development of Economic and Technological Infrastructure

Together with efforts made by firms and industry, the development of following economic and technological infrastructures is required to achieve the tasks stated in the above.

1. The improvement of assistance system for facility modernization and management efficiency improvement
2. The development of assistance system to grade-up design development capacity
3. The arrangement of training systems in the furniture industry sector
4. The promotion of standardization of raw materials, auxiliary materials, components and products

2-1-2 Targets of Development Program

(1) Setting Targets

1) Short and Medium-term Targets

Generally speaking, Philippine wooden furniture production technologies are not at a level capable of directly targeting the high-grade furniture market. Even those firms classified into group A1 are currently exporting semi-finished products. In the short and medium term it is necessary to: 1) secure access to markets by exporting semi-finished products to the high-grade market; and 2) acquire the capabilities to meet the quality, delivery control, and pricing required by export markets.

The targets in regard to technology development include: 1) the development of the products such as tables making use of the advantages of solid wood by introducing of finger-jointing technology and 2) the improvement of processing precision and quality uniformity by achieving a balance between machine processing and hand carving in the carving process.

2) Long-term Targets

The long-term targets are the export of finished products to high-grade markets under Philippine brands.

It will be by no means easy to achieve this level. It is possible only if technologies and know-how related to production, management, and marketing are acquired and developed during the short to medium-term.

(2) The Implementation of Projects in Response to Development Stages of the Industry

This development program assumes three stages for the development of the wooden furniture industry. (Refer to Fig. IV-2-2.)

1) First Stage of Development

Most firms do not yet have an adequate understanding of the product quality, management techniques, and technological points required in export markets. The first stage of development, therefore, involves improvement of the understanding of export business requirements through numerous opportunities for contact with export markets.

During this first stage of development it is necessary to provide assistance so that: 1) businesses which are currently exporting furniture, or those which plan to do so in the near future, are given the opportunity to make contact with overseas markets while adopting active and appropriate strategies; and 2) businesses are able to acquire the technologies, production management, and management techniques required of export businesses.

In addition, it is necessary that of the types of government assistance which will prove indispensable in the future for the development of the wooden furniture industry, work be started on projects that require the cooperation of numerous organizations in the preparatory stage, and also require a huge amount of investment as well as decision-making of many organizations.

2) Second Stage of Development

The second stage of development involves individual businesses taking practical steps for surmounting the tasks which have come to light during the first stage of development.

Large and medium-sized businesses are expected to actively embark on the improvement of facilities, the improvement of production management, and the acquisition of technical expertise whether on their own or through tie-ups with foreign businesses. Small firms and cottage industries, on the other hand, are hard to make these improvements entirely on their own, even if they understand the need for such improvements. Assistance will be needed in this connection in areas such as facilities, technology, and marketing.

From the standpoint of government assistance, various systems and measures are required in order to strengthen the industrial base. They include: 1) the establishment of a technology and management guidance system for small businesses and cottage industries intending to export; 2) the expansion of staff training schemes as a means of coping with the increase in demand for skilled labor resulting from an increase in business activities; 3) the expansion of finance systems for providing funds required for introducing and renewing machinery and equipment; and 4) provision of institutional set-up and policy measures related to grading-up of industrial infrastructure with that of necessary facilities which the individual firms otherwise would have difficulty in purchasing.

3) Third Stage of Development

The aim of the third stage of development is to establish a basis of an export industry and further raise the overall standard of the industry through the continuous implementation of the projects set in the first and second stages to establish an identity of Philippine wooden furniture in the international market.

2-1-3 Framework of Development Program

Measures in the following key areas are recommended be taken for the effective development of the wooden furniture industry.

1. Promotion of proper approaches to export market
2. Improvement of fundamental business performance capable of satisfying export market needs
3. Development of economic and technological infrastructures
4. Promotion of tie-ups with foreign advanced firms.

In addition to the above, 1) enhanced and more effective financing programs for the promotion of small and medium businesses; and 2) the strengthening of industry associations, are recommended.

2-2 Recommendation on Program

Table IV-2-1 shows details on the individual development projects regarding the project outlines, requirements, and recommendation on implementation. And Table IV-2-2 shows the correlation between individual projects and tasks and effective measures for industrial promotion.

When implementing the projects, attention should not solely be focused on each separate project. Rather, it is necessary for these projects to be linked with one another and implemented while taking adequate account of the role which each particular project should play as part of a comprehensive program. Next, it is necessary for the organizations responsible for each project to start work as soon as possible on establishing an organizational set-up for the implementation of the projects and to work actively in arrangement of the required financial resources so that preliminary preparations and adjustments may proceed smoothly. (Refer to Fig. IV-2-2)

2-2-1 Outlines of Projects

(1) Promotion of Proper Approaches to Export Markets

1) Organization of Activities for Exhibition of Products in Foreign Furniture Fairs

This is one of the priority projects recommended in the development program.

The objectives of exhibiting products in trade fairs are: 1) conducting a public relations campaign for wooden furniture which is a non-traditional export product; 2) conducting market surveys and research into the industrial structures of the countries in which the exhibitions are held; and 3) devising strategies for the effective exhibition of products.

The immediate task to be undertaken is to make the potential market aware of the existence of the Philippine wooden furniture industry. It is necessary to formulate a plan and strategy for exhibiting in trade fairs with the assistance of advisors and consultants from the host country. Sufficient advance studies on the characteristics of trade fairs and market trends within the host country are required in order to devise such a strategy.

The key to attaining the objectives of this project lies in successful linking and coordinating the activities of industry associations, government, and the relevant public organizations by setting up an "Export Marketing Working Committee".

2) Information Gathering and Research on Foreign Markets and Industries

This project has as its objective the enhancement of foreign information gathering and research activities and the building of a system which will be of practical use in product development and marketing.

The active utilization of the exhibition of products in overseas trade fairs, the dispatch of business missions, and continuous contact with foreign industry associations are effective means of providing opportunities for conducting surveys and research. The establishment of joint public-private sector research committees for investigating specific problems encountered in relation to target export markets and business difficulties as the need arises is also necessary. On top of this, the dissemination of information from overseas is also important. This involves gathering, organizing and storing information as well as enhancing existing services that provide information.

Under this project, it is necessary for the industry and public organizations involved to carry out their own particular functions and cooperate with one another to be effective in actual marketing activities.

(2) Improvement of Businesses Performance Capable of Satisfying Export Market Needs

Advisory Project for the Improvement of Wooden Furniture Technology and Management

The prime objectives of this project are:

1. To increase awareness of the quality level required by export markets
2. To promote the acquisition of production technology, production management, quality control, and cost management elements needed to achieve these levels

This project will involve the invitation of foreign furniture experts and the organization of an advisory team to improve management techniques. The advisory team will visit firms which are already exporting or which hope to do so in the future. They will make a factory diagnosis and give advice related to the improvement including that of the modernization of facilities. The team will also make several follow-up visits. The advisory team will also take the opportunity to provide guidance to the support team. This support team will be made up of staffs from Philippine technology and management guidance organizations and will play a key role in instruction in the future.

This project is a priority project which will have the greatest impact on the overall development program. Because the organization which is established for promotion of this project is to be the implementing body of other projects as well, it is necessary to make the best approach in setting-up the organization.

A national promotion committee and regional promotion committees will have to be established in order to carry out this project. It is recommended that, with the CFIP taking the leading role, the national promotion committee be made up of representatives from the BOI, BSMBD, CITC, NMYC, PTTC, and PDDCP. The regional promotion committees should mainly consist of the branches of the CFIP.

(3) Development of Economic and Technological Infrastructure and Institutional Set-up

These various improvement efforts will involve many problems whose solutions are beyond the scope of individual firms. The wooden furniture industry, in particular, contains numerous small and medium-size firms, and a certain extent of assistance in development of infrastructure and institutional set-up will be needed in order to quickly improve these fundamental business performance up to a level at which their products will be accepted on the international market.

Followings are the important projects strategically in view of present position and development thrust of wooden furniture industry in the Philippines.

1) Assistance for Facility Modernization

This project is intended to assist individual manufacturers in modernizing their facilities to allow the expansion of business operations. It will provide assistance with: 1) technical instruction; 2) finance; and 3) a reconditioning and maintenance services. In regard to the reconditioning and maintenance of machinery in particular, it will be necessary to establish a team to provide technological assistance in introduction of machinery because of the lack of peripheral technical service businesses. This team will

provide services such as: 1) the reconditioning of machinery; 2) initial instruction in operation; and 3) other consulting services. The team will charge for its services.

Many small and medium-size firms in the Philippines lack sufficient understanding of necessary facilities and equipment and have no concrete plans for the modernization of facilities. Consequently, this project should assume the implementation of the Advisory Project for the Improvement of Wooden Furniture Technology and Management.

2) Assistance for the Formation of Cooperatives in Specified Districts

The purpose of this project is to provide technological and management assistance in organizing small and medium-sized firms into the formation of cooperatives so that they will have an increased capacity to meet orders.

This project will include the examination on necessity and viability of common service facilities in the districts. Concerning the operation of the common service facilities, however, it is thought best that a corporate organization separate from the group be formed to allow use by outside firms as well.

It would be most efficient for the advisory team to be organized around the support team of the the Advisory Project for the Improvement of Wooden Furniture Technology and Management described above.

3) Improvement of Design Development Capabilities

In order for the Philippine furniture industry to develop its own export marketing in the future, it is essential that it improves the capability to develop original product designs rather than relying on buyers or copying other designs as it does at the present time. In order to do this it will be necessary to strengthen the staffing of PDDCP which is expected to be the center on product development. By also enhancing the activities of these organizations assistance will be given to encourage individual firms to make greater efforts aimed at improving their design development capabilities.

The principle theme of the project is as follows:

1. Strengthening of information gathering and research on design in the current export markets and advanced countries of furniture production.
2. Dissemination of designs and training of industrial designers.
3. Development of a system for the protection of designs and a corresponding monitoring body.

In implementing the project it is necessary to establish a design research committee made up of industry representatives and representatives from the PDDCP, PTTC, CITC, FPRDI, etc, so that the industry will be able to make sufficient use of the functions of the project. Due to the constraints imposed on the design development from manufacturing technology and the structure of furniture, industrial designers with expertise on the production of furniture are needed for the design and development of furniture.

4) Project for Arrangement of Training Systems in the Furniture Industry

The project comprises strengthening of the activities of the Furniture Industry Training Board and introduction of training systems in the provinces.

As for the former, the existing training programs should be coordinated. New training programs should be considered to fill gaps in some areas.

As for the latter, although arrangement of the training system has been done to some degree on a central level, including CITC and NMYC, there are no such systems in the provinces. The aim of this project is to resolve the problem of the severe shortage of skilled workers faced by businesses in the provinces.

This project will: 1) draw up guidelines for a training system for each district; and 2) examine the necessity for common service facilities in these districts.

The provision of land and the buildings of the training centers is assumed to be arranged by the CFIP branch offices. The machines and equipment introduced include not only brand-new machinery but also used machinery where considered appropriate. The CITC will provide assistance with the reconditioning of used machinery. The functions of the centers will include: 1) training; 2) the lending of machinery with instruction in operation to the firms in the district; and 3) processing service and the operation of the center is assumed to be self-supporting. It is considered appropriate that the centers be run by the CFIP or by a joint organization of public-private sector. The instructors will be trained by the CITC. Instructors on special topics including quality control will be systematically dispatched from a pool of instructors to be formed by the CITC, NMYC and other related organizations.

5) Promotion of Standardization for Production Processes, Materials and Components

Many of the materials purchased from outside sources by the wooden furniture industry have a significant impact on the quality of the finished product. The establishment of industrial standards and the strengthening of testing laboratory system should be carried out for the promotion of standardization so that, in regard to adhesives, plywood, and dowels, etc, the standard and specifications of materials are exactly described for purchasers.

The BPS should organize standard dissemination committee separately from the TCs, in cooperation with the CFIP, PWPA, PTTC, FPRDI, and DENR, and draw up and implement appropriate projects.

(4) Promotion of Tie-ups with Foreign Firms

1) Long-term Continuous Dispatch of Trainees Overseas

This project will take two forms: 1) the dispatch of trainees on public basis through foreign training assistance organizations; and 2) the dispatch of trainees either directly or through an appropriate organization for this purpose to foreign private companies.

A system should be established whereby government dispatches will be implemented continuously under a cooperative framework consisting of government bodies and industry associations, and whereby, these trainees, upon their return to the Philippines, will contribute to the development of the Philippine furniture industry by serving as instructors or advisors. It would be most realistic for private-level dispatches to be conducted only in the future after business and technical tie-ups and joint ventures have been assumed with foreign corporations.

2) Promotion of Tie-ups with Foreign Firms

This project consists of the following :

1. Provision of lists of companies desiring tie-ups, and the compilation of related information on these companies
2. Assistance in the preparation of company brochures, product pamphlets, and price lists for these companies
3. Holding of regular meetings with foreign industry associations
4. Gathering and compilation of information concerning foreign companies interested in tie-ups
5. Dispatching missions overseas and receiving foreign missions for the promotion of tie-ups
6. Establishment of a mediating system for the promotion of tie-ups

Because the accumulation and up-dating of data takes time with respect to the item of the collection and compilation of information on companies (items 1 and 4 above) and these data are indispensable for mediating activities (6 above), it would be advisable for work on items 1, 2 and 4 above to be set about work at the earliest possible time.

2-2-2 Implementation Schedule and Priorities

1) Short-term Projects

a) Projects which should be implemented immediately

1. Organization of Activities for Exhibition in Foreign Furniture Fairs
2. Information gathering and research on foreign markets and industries
3. Advisory Project for the Improvement of Wooden Furniture Technology and Management

b) Projects for which preparations should be started immediately

1. Facility Modernization Assistance Program
2. Arrangement of Training Systems in the Furniture Industry
3. Promotion of Standardization for Processes, Materials, and Components
4. Long-term and Continuous Dispatch of Trainees Overseas

2) Medium and Long-term Projects

1. Assistance for the Formation of Cooperatives in Specified Districts
2. Improvement of Design Development Capabilities
3. Promotion of Tie-ups with Foreign Advanced Firms

3) Priority Projects

All of the programs mentioned above are considered essential in playing an important role in the development stages of the wooden furniture industry. However, assuming a case in which funding and organizational constraints allowed the implementation of only a few projects, the scope would have to be limited to those projects in fields requiring immediate government assistance from the standpoint of development strategy. The remaining projects would have to rely on independent efforts by the private sector in accordance with industry development.

In such a case, it is suggested that the following two projects be implemented immediately to prepare a momentum for succeeding development.

1. Advisory Project for the Improvement of Wooden Furniture Technology and Management

Through the implementation of this project, companies will acquire technology, production management, and management-related expertise required for increasing their awareness of the needs of export markets and for the production of products which meet these needs.

In addition, the regional promotion committees which are the main force behind the promotion of this project will study development plans for their respective districts and draw up plans for the establishment of common service facilities, the formulation and operation of regional training systems, and the formation of cooperatives. A base for guidance in the areas of technology, management and marketing is also formulated through the organization of support team.

2. Organization of Activities for Exhibition in Foreign Furniture Fairs

The main objective of this project is the creation and acquisition of business opportunities which will have a considerable impact on the future activities of individual businesses in the areas of production and management.

Also, linkage between this project and the project for gathering information and research on overseas markets and industries will prove an even more effective means of attaining the main objective of this project. In increase in understandings of the needs of export markets and of export business techniques, and in reflecting them in marketing activities, these two projects are inextricably bound with one another.

2-2-3 Implementing System

Implementation will require numerous steps, and some of the individual projects are inter-related or requires the implementation of another project as a precondition. Consequently, the establishment of implementing bodies having appropriate management and coordination functions is critical to successful implementation, and within this implementation framework it is necessary that the assigned individual organizations carry out their respective responsibilities in accordance with the overall implementation plan. The following two organizations are suggested as implementing bodies having functions for overall promotion and coordination:

1. General administrative bureau

This office would be responsible for monitoring the progress of individual programs, calling up and coordinating related organizations as necessary, and making any necessary modifications in the programs. This organization should consist primarily of staff from the BOI and CFIP.

2. Advisory committee

This committee will be responsible for providing advice and assistance to the activities of the general administrative bureau described above. It is to consist of representatives from the BOI, BSMBD, BPS, BETP, CITEM, DTI Planning Group/Regional Group, CITC, PDDCP, and CFIP. Each representative should arrange so that the organizations being represented on the committee act on the basis of the agreements reached by the committee.

The CFIP is to create a Furniture Industry Training Board together with related government organizations for the coordinated assessment of the need for, and effective implementation of, the various different types of training programs. This is in line with the concept of the advisory committees above established for the execution of this development program. The most advisable course is development into the above-mentioned advisory committee through the industry's applying this same approach not only for training, but the coordination of all the programs for the development of the subsectors.

Fig. IV-2-1. Problems for the Wooden Furniture Industry and the Development Plan

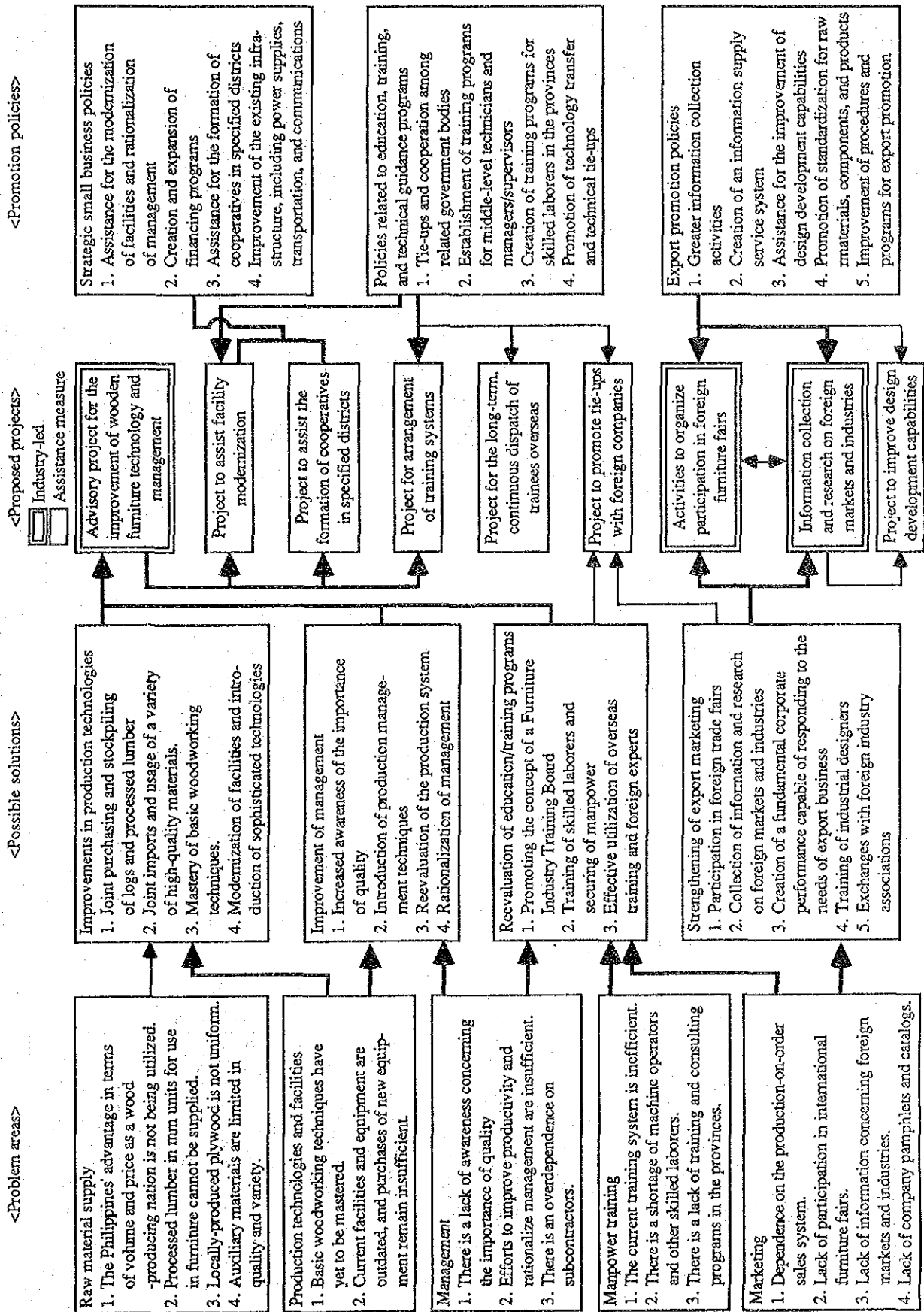


Fig. IV-2-2: Wooden Furniture Sub-sector: Development Stages and Expected Effects of Development Projects

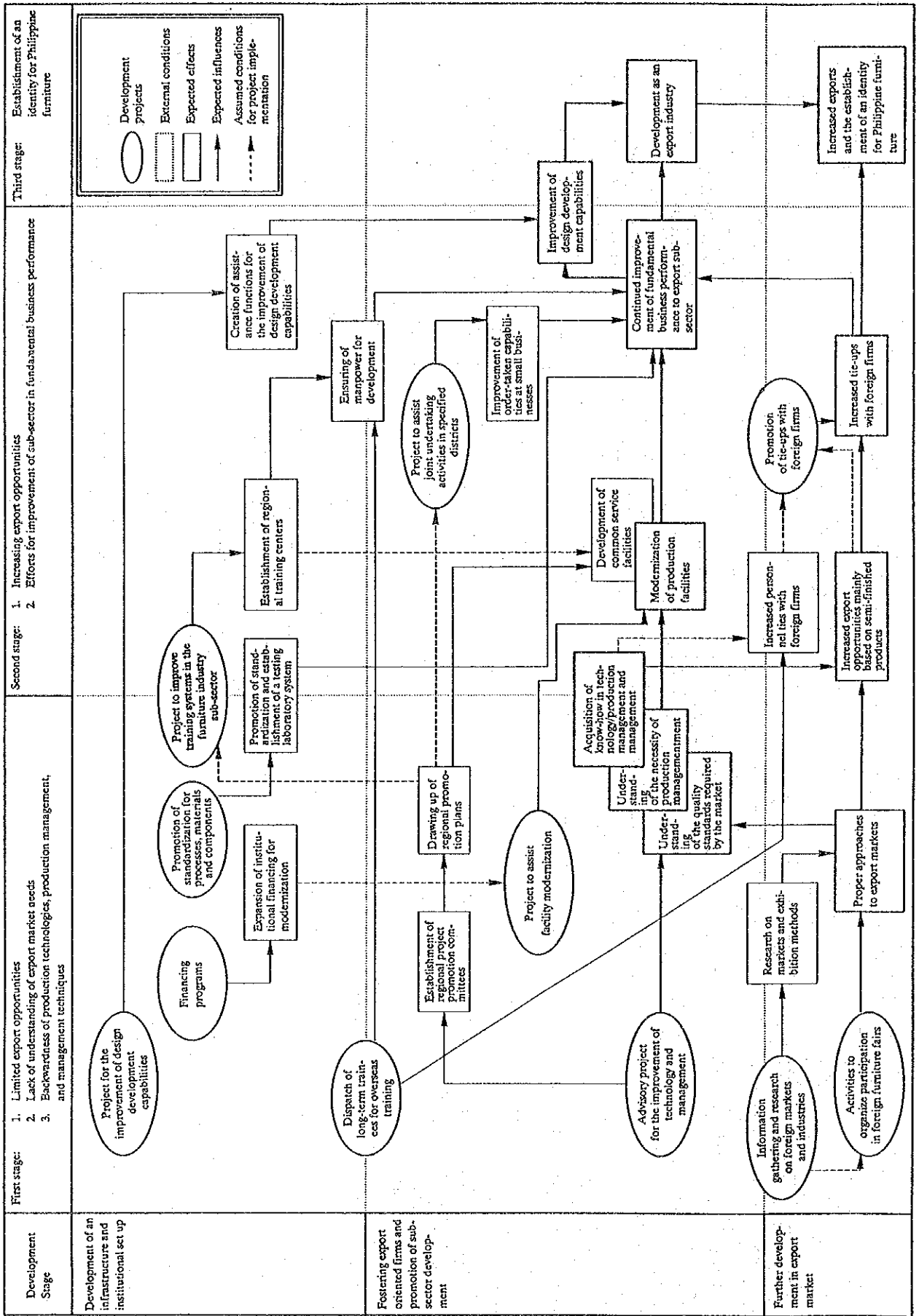


Table IV-2-1: Outline of Development Programs for the Wooden Furniture Industry

Program & project	Project outline	Required conditions	Recommendation on implementation
<p>I. Promotion of proper approaches to the export market</p>	<p>1. Organization of activities for exhibition in foreign furniture fairs</p> <p>Taking participation opportunity to exhibitions, study proper approach to export markets, develop required activities on the base of participation strategy.</p> <ol style="list-style-type: none"> 1. Invitation of experts in the targeted furniture markets as consultants. 2. Dispatch of researchers/missions accordingly with the participation. 3. Interchange of personnel, and exchange of information with industrial associations overseas 	<ol style="list-style-type: none"> 1. Invitation of experts in targeted furniture markets as consultants. 2. Establishment of an organization for follow-up and post-trade fair activities. 	<p>1. Promotion body: CITEM/CFIP</p> <p>2. Implementation system: Organizing an export marketing working committee by CITEM & CFIP, in cooperation with FTIC & BETP</p> <p>3. Schedule: Immediate implementation is recommended.</p>
<p>2. Information gathering and research on foreign markets and industries</p>	<p>Enhancement of information gathering and research on foreign markets and establishment of a system effective for product development and export marketing.</p> <ol style="list-style-type: none"> 1. Utilizing the information gathering capabilities of existing organizations, collect information on foreign markets and industries. 2. Surveys and studies by industry associations. 3. Accumulation and classification of information and its furnishing service. 4. Reflection of the results of these efforts on the services by the related public organizations 	<ol style="list-style-type: none"> 1. Continuous activities of information gathering and researches. 2. Formation of study organization jointly by public and private sector 	<p>1. Promotion body: BETP</p> <p>2. Implementation system: The office for the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs and its working committee.</p> <p>3. Schedule: Implementation in accordance with the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs is recommended.</p>
<p>II. Improvement of business performance capable of satisfying export market needs</p>	<p>Advisory Project for the Improvement of Wooden Furniture Technology and Management</p> <p>To increase awareness of the quality standards required by export markets and to promote acquisition of the production technology, production management, quality control, and cost management know-how needed to achieve these standards.</p> <ol style="list-style-type: none"> 1. The formation of technology and management advisory teams made up of foreign furniture experts, and furnishing traveling guidance by the team to individual firms. 2. The formation of a local support team and the transfer of technology to the team. 	<ol style="list-style-type: none"> 1. Formation of a national promotion committee and regional promotion committees. 2. Formation of an appropriate advisory team and support team. 	<p>1. Promotion body: BOI/CFIP</p> <p>2. Implementation system:</p> <ol style="list-style-type: none"> 1) Organization of a national promotion committee under CFIP leadership. 2) Organization of regional promotion committees under CFIP branch offices. <p>3. Schedule: Immediate implementation is recommended.</p>

Program & project	Project outline	Required conditions	Recommendation on implementation
3. Advice on the establishment of regional development plans.			
III. Development of economic and technical infrastructure and institutional set-up			
1. Assistance for facility modernization	<p>Assistance for the modernization of facilities and equipment, both individual and joint-use.</p> <ol style="list-style-type: none"> 1. Preferential treatment in institutional financing for the purchase of facilities and equipment. 2. Study on possibility to create a loan guarantee and mutual aid programs. 3. Formation of technical support teams for the introduction of facilities and equipment. 	<ol style="list-style-type: none"> 1. Organization of a technical support team for the introduction of machinery. 2. Preparation of lists of new and used equipment eligible for preferential treatment in institutional financing and its application for the procurement. 3. Implementation of the Advisory Project for Improvement of Wooden Furniture Technology and Management. 	<ol style="list-style-type: none"> 1. Promotion body: BOI/CFIP 2. Implementation system: Implementation by BOI and CFIP with the cooperation of BSMBD and CITC, or the national promotion committee of the Advisory Project for Improvement of Wooden Furniture Technology and Management. 3. Schedule: Preparations are recommended to set about in accordance with organization of the national promotion committee.
2. Assistance for the formation of cooperatives in specified districts	<p>Assistance for formation of cooperatives to improve the order-taking capacity of small businesses and cottage industries.</p> <ol style="list-style-type: none"> 1. Designation of target districts and establishment of regional promotion committees. 2. Organization of advisory teams all over the country, assistance in drawing up cooperative plans and furnishing of technology and management guidance by the teams. 	<ol style="list-style-type: none"> 1. Implementation of the Advisory Project for Improvement of Wooden Furniture Technology and Management. 2. Establishment of incentives for firms participating in the cooperatives. 3. Organization of an appropriate advisory teams for formation and operation of the joint undertakings. 	<ol style="list-style-type: none"> 1. Promotion body: BSMBD/CFIP 2. Implementation system: An office by BSMBD/CFIP. The regional promotion committees for the Advisory Project for Improvement of Wooden Furniture Technology and Management. 3. Schedule: To be implemented in accordance with the progress of the Advisory Project for Improvement of Wooden Furniture Technology and Management.
3. Improvement of design development capabilities	<p>From a long-term perspective, the training of talented designers and with this, strengthening of PDDCP's function in assisting design development capacity improvement of individual firms.</p> <ol style="list-style-type: none"> 1. The long-term dispatch of talented personnel overseas for training. 2. The establishment of the design study committee and the implementation of organized information gathering activities. 3. The implementation of activities to promote design development. 	<ol style="list-style-type: none"> 1. Establishment of an organization jointly by industry and government for the promotion of active industry participation and utilization of PDDCP. 2. The uncovering and training of talented designers. 3. Active implementation of various programs for dissemination. 	<ol style="list-style-type: none"> 1. Promotion body: PDDCP 2. Implementation system: PDDCP. A design study committee. 3. Schedule: Activities of the design study committee should be begun immediately in order to uncover designer candidates for overseas training.
4. Arrangement of training systems in the furniture industry	<p>The development of regional training systems and implementation of trainings based on regional wooden furniture industry development.</p>	<p>Formation of regional development plans in the specified districts through implementation of the Advisory Project for Improvement of the Furniture Industry.</p>	<ol style="list-style-type: none"> 1. Promotion body: DTI regional offices/regional promotion committees. 2. Implementation system: CFIP and third-

Program & project	Project outline	Required conditions	Recommendation on implementation
<p>ment plans.</p> <p>1. The establishment and operation of training centers.</p> <p>2. Instructor training and dispatch systems.</p>	<p>ment of Wooden Furniture Technology and Management, and establishment of the need for and objectives of training in the plan.</p>	<p>3. Schedule: Implementation should be based on the results of studies made by the regional promotion committees of the Advisory Project for Improvement of Wooden Furniture Technology and Management.</p> <p>4. Estimated funds required: Approx. \$158 million (US\$1,217,000)</p>	<p>sector organizations centering CFIP.</p> <p>3. Schedule: Implementation should be based on the results of studies made by the regional promotion committees of the Advisory Project for Improvement of Wooden Furniture Technology and Management.</p> <p>4. Estimated funds required: Approx. \$158 million (US\$1,217,000)</p>
<p>5. Promotion of standardization for manufacturing processes, materials, and components</p>	<p>The development and dissemination of standards for lumber, plywood, adhesives, paints, and metal fittings, etc.</p>	<p>1. Active cooperation from industry.</p> <p>2. Assistance for the project of BPS to establish the testing laboratory system.</p>	<p>1. Promotion body: BPS.</p> <p>2. Implementation system: Organization of a committee (separate from the Technical Committees) to promote disseminate the standards among the industry.</p> <p>3. Schedule: Immediate implementation is recommended.</p>
<p>IV. Promotion of tie-ups with foreign firms</p> <p>1. Long-term, continuous dispatch of trainees overseas</p>	<p>The long-term, continuous dispatch of trainees to training institutes and private firms in the industrialized nations for the training of skilled laborers, foremen and supervisors and forming a basis for the promotion of tie-ups.</p>	<p>1. Active participation by industry to ensure continued implementation of the project and the smooth acceptance of trainees upon their return.</p> <p>2. Establishment of minimum training objectives in cooperation with companies providing the training.</p>	<p>1. Promotion body: BOI.</p> <p>2. Implementation system: Establishment of a promotion committee by the CFIP.</p> <p>3. Schedule: The promotion committee should be established immediately, set about the dispatch for public training programs. Dispatches to individual companies should be made step by step accordingly with progress of preparation at the receiving nations/firms and through contacts with the receiving local governments in the furniture producing districts.</p>
<p>2. Promotion of tie-ups with foreign firms</p>	<p>The promotion of tie-ups with foreign advanced firms in the hope of transfer of technology, management and marketing. Establishment of a foundation and a matching system.</p>	<p>Implementation of the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs.</p>	<p>1. Promotion body: BOI.</p> <p>2. Implementation system: Organization of a promotion committee by the office of the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs and the BOI.</p> <p>3. Schedule: Implementation succeeding to the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs.</p>

Table IV-2-2: Objectives and Development Programs for the Wooden Furniture Industry

Tasks for Industrial Promotion	Effective measures	Development projects										
		Organization of activities for participation in foreign furniture fair	Information and research activities on foreign markets and industries	Advisory project for the improvement of wooden furniture technology and management	Facility modernization assistance project	Project to assist in the formation of cooperatives in specified districts	Project to improve design capabilities	Project for the improvement of training systems in the furniture industry sub-sector	Promotion of the standardization of production processes, materials and components	Long-term continuous dispatch of trainees overseas	Promotion of tie-ups with foreign firms	
		A**	A	A**	B	C	C	B	B	B	C	
(1) Improvement of the consciousness of quality and the cost/delivery schedule management	1. Recognition of the necessity and points to be improved	X	X	X								X
	2. Individual guidance to firms	X		X								
(2) Acquisition/introduction of advanced production technologies	1. Recognition of the necessity and points to be improved		X	X						X		X
	2. Individual guidance to firms	X		X								X
	3. Promotion of tie-ups with foreign firms					X						X
	4. Strengthening of guidance systems			X		X						X
2. Introduction of production management technologies	1. Recognition of the necessity and points to be improved	X	X	X								X
	2. Individual guidance to firms			X								
	3. Promotion of tie-ups with foreign firms	X					X					X
	4. Strengthening of guidance systems			X			X					
(3) Modernization of facilities	1. Preparation/application of appropriate institutional financing				X							
	2. Establishment of technical assistance systems for introducing appropriate second-hand facilities			X	X							X
	3. Assistance in introducing common facilities			X	X							X
	4. Assistance in forming/developing cooperatives			X	X							X
(4) Improvement of procurement of raw and auxiliary materials	1. Establishment of supply systems of furniture-use plywood										X	
	2. Reduction of import duties on auxiliary materials											
	3. Standardization and establishment of testing systems										X	
(5) Improvement of training systems in the furniture industry sub-sector				X	X							
						X						
(6) Strengthening of export marketing activities	1. Systematization of activities for participating in foreign trade fairs	X										
	2. Guidance by furniture experts of the export markets	X										
	3. Assistance to firms' sales promotion activities	X	X									X
	4. Strengthening of information gathering and research activities	X	X									
(7) Improvement of product development capabilities	1. Training of staff necessary for strengthening design development capabilities									X		
	2. Strengthening of information gathering and research activities	X	X								X	
	3. Strengthening of acceptance of design by the industry										X	
	4. Development of design protection systems										X	

Note: "Schedule" symbols: A = Should be implemented immediately, B = Preparations should be begun immediately, C = Medium- to long-term project, ** = Key project

3. Computer Software and Services

3-1 Framework of Development Program for the Computer Software Development Industry

3-1-1 Basic Perspective

In general, a software development sector develops in tandem with that country's computerization. Therefore, the development targets for the software development sector often are studied as part of that country's computerization plans. In the case of the Philippines, however, the country has not made sufficient progress in computerization itself and, rather, computer software development has gone ahead with the aim of meeting export demand.

The computer software development sectors of Japan and the U.S. are, on the other hand, suffering from severe shortages of engineers. This shortage is expected to further worsen in the years ahead, forcing companies to farm out as much work as possible overseas or improve their hardware environments and software development environments so as to deal with the shortage.

In view of this situation, the Philippines must establish a development program which focuses on this overseas demand. The program is examined based on the following two points of view.

(1) Creation of Opportunities for Accessing Export Market

Software development companies in the U.S., Canada, Japan are strongly interested in farming out software work to the Asian region, but the Philippines is just one of the many countries in the Asian region. On the other hand, the companies which already have business relations with the Philippines have already recognized the advantages of the Philippines with its high educational level, English speaking ability, and inexpensive labor force. Nevertheless, overseas software development companies which have tried to set up contacts up until now feel, from their experience, it fairly difficult to find suitable channels in the Philippines. Further, software development companies in the Philippines feel it difficult to find suitable clients as well.

In this way, the objective situation is thus: the industrialized countries are suffering from shortages of manpower and are facing growing software demand, so the conditions for software development exports by the Philippines are falling into line, but there is extremely insufficient access to the export markets. It is important that this problem be quickly resolved. If the business opportunities among individual companies increase as a result, awareness by companies of the needs of the export markets will also grow and the effect of greater incentive in improving technology could be expected.

(2) Importance of Opportunities for Development of Advanced Software Domestically

For the software development companies of the Philippines to win high marks in the export markets and increase the scope of orders they receive, they must by all means try to improve their development capabilities. Improvement of capabilities in development technology would be made possible for the first time by participation in much sophisticated development work. As already mentioned, however, the Philippines is still insufficiently computerized and has not yet reached the stage where it provides, on its own, sufficient opportunities for technical development. Considering this point, it would be extremely effective if the government would create such opportunities by launching large scale development projects, which would contribute to raising the level of software

development companies.

Implementation of this project would also have the effect of promoting the computerization of the country as a whole, which could then be expected to lead to increased software development opportunities. This synergistic effect of promotion of computerization and increase of software development opportunities makes a balanced method of development. The creation of opportunity by the government is important. If it is difficult to create such development opportunities, then consideration may be given to establishment of a facility offering training in advanced development technology. In the future, such a facility would have to offer training and be able to contribute to the promotion of the computerization of the country as well.

In addition, it is necessary to develop manpower and establish the requisite infrastructure, including the computer hardware. Figure IV-3-1 shows this.

Note that the targets to be achieved at the individual company level are shown in Fig. IV-3-2 and the relationship between the issues in industrial promotion and the various projects is shown in Table IV-3-1.

3-1-2 Targets of Development Program

(1) Short-term Targets

- 1) Positioning the industry as one of the key export industries and raising the share of the Philippines in the U.S., Canadian, and Australian markets to an extent where the presence of the Philippines in the market is fully recognized. Further, laying a stepping stone for entry into the Japanese market in the future.
- 2) Targeting the improvement of software development technology, in the short term, to raise the level of development of applications software. That is to raise the technical level of the industry as a whole so as to enable the Philippines to handle the parts of development work now being handled by the companies placing the orders.
- 3) Establishing an educational system to supply computer software engineers of a high level of expertise so as to be able to handle any future expansion of demand.

(2) Medium and Long-term Targets

- 1) Establishment of a strong position in the markets in U.S., Canada, and Australia. Aggressive entry into the Japanese market.
- 2) Further improvement of software development technology and achievement of a level of expertise enabling orders for development of applications software to be obtained independently. Further, for the long term, working to improve technical capabilities so as to enable entry into systems integration.

3-1-3 Framework of Development Program

As mentioned above, measures in the following key areas are important for the effective promotion of the computer software development industry as an export industry:

- (1) Increase of opportunities for access to export market
 - 1) Strengthening of access to overseas software development industry
 - 2) Measures to cope with Japanese language barrier so as to promote receipt of orders from Japanese market
- (2) Opportunities for development of advanced software to improve technical capabilities
- (3) Improvement of infrastructure
- (4) Training of engineers

3-2 Recommendation on Program

3-2-1 Outline of Projects

The recommendations as to the outline, requirements, and implementation of the projects are presented in the Table IV-3-2.

(1) Increase of Opportunities for Access to Export Markets

1) Strengthening of access to software development industries overseas

The software development companies of the Philippines are still only engaged in a limited range of overseas marketing activities. In the case of foreign affiliated software development companies, the parent companies handle the marketing activities and cannot be said to be engaging in activities to introduce Filipino companies to the overseas markets. In particular, the independent development companies, which it is hoped will serve as the centers of development of the software development industry of the Philippines in the future, are still in many cases passive when it comes to overseas marketing activities.

Therefore, in the short term, it would be effective to try to make maximum use of the current export capabilities through receiving missions of software development companies from export destinations and through such activities establishing a system enabling systematic and sustained overseas marketing activities, which have up until now been carried out piece meal. The following activities would be effective to achieve this goal:

1. Creation of opportunities for contact with individual Filipino companies by receiving missions of software development companies from export destinations to the Philippines
2. Establishment of system for overseas marketing activities by Filipino side during this process
 - a. Establishment by government and private sector of organization for sustained and systematic overseas marketing activities
 - b. Preparations and support to individual companies to enable them to handle tieups with and inquiries on orders from overseas companies

This type of activity should be widely promoted targeting the U.S., Canada, Australia, Japan.

2) Establishment of marketing company for Japanese market as a measure to overcome the language barrier

In promoting orders from the Japanese market, first of all consideration may be given to orders for work in fields not requiring the Japanese language, for example, CAD/CAM, numerical control systems, OS conversion, and utility software. Also possibility would be orders for software development work from Japanese affiliates situated in the U.S. and other English speaking countries. To exploit the Japanese market in earnest, however, it is essential to take measures to overcome the language barrier.

That is, when receiving orders from the Japanese market, conversion from the Japanese language to English language is necessary at some stage in the specifications. The Japanese language ability required for research and analysis and for basic system design is extremely sophisticated and it would be almost impossible to reach this level of

ability with just short term Japanese language training. Translation of documents written in Japan into English, however, would be possible with just a certain level of Japanese language training. On the other hand, the Japanese side has limited manpower which could provide instruction in English to the Philippines. Having this limited manpower made common use of by numerous companies in the Japanese and Filipino software development industries so as to reduce the current obstacles must be considered over the long term.

Therefore, in the future, a marketing company with such a function should be set up as a joint venture and made to serve as a bridge between Japan and the Philippines. At the same time, Filipino staff able to handle this work should be trained and the range of development work handled by the Filipino side gradually expanded.

(2) Provision of Opportunities for Advanced Software Development for Improvement of Development Technology

Leaving aside special cases of orders from affiliates, overseas orders for software development already come with a considerable amount of specifications at the stage where they are given to Filipino software development companies. This means that considerable systems analysis and design are performed by the original orderer. As already stated, however, the industrialized countries are suffering from increasingly severe shortages of software development engineers such as SEs and SAs of a high technical level able to handle the work now being performed by the original orderers.

Regarding the types of software development services, demand will probably increase for work such as development of network services and systems integration, which require a higher level of technical expertise than the development of applications software now being ordered.

It is important to raise the level of technology to enable these needs of the market to be met. In particular, the independent large sized software development companies (Group C1), which will probably become the centers of software development ordered to the Philippines in the future, and independent small and medium sized software development companies (Group C2), which must shoulder the role of supporting such services as subcontractors, must strengthen themselves so that they can fully handle development of software used in mainframe and minicomputer level environments.

To improve technical capabilities, it would be most effective to actually participate in software development of a high technical level. This may be seen in the experience of many industrialized countries. In the case where there is insufficient opportunity for software development domestically, as in the Philippines, it is necessary to establish such large scale projects themselves and create such opportunities. That is, it is necessary to conceive of projects for development of large sized systems which might be useful in the Philippines and develop technical expertise through the participation of private sector software companies in such projects. From the projects now being envisioned among computer related people in the Philippines, mention may be made, for example, of 1) establishment of a computer system for official documents of government organizations and 2) connection of large sized computers of the NCC and UP and sharing of systems.

There are many other projects as well and effort is required in the study of these jointly by the public and private sectors, the selection of suitable projects, and the implementation of the same. These projects in many cases would be very difficult to realize as they require massive funding. On the other hand, regarding the software development work accompanying aid projects from other countries, it is necessary not to rely on overseas software development companies, but to give as much development opportunities to domestic companies as possible.

Considering the difficulties involved in implementation, the "establishment of a computer software development and technology institute" is recommended as an alternative project. This project has as its object the training of engineers with advanced software development technology in the Philippines, where there is insufficient computerization, and contributing to the establishment of a proper hardware environment, which is now sorely lacking. Further, Japanese language courses and training in Japanese business practices could be added as means for facilitating access to the Japanese market.

(3) Training of Engineers

The future development of the software industry requires the systematic and sustained training of engineers at universities, computer schools and other institutions and the upgrading of staff at software development firms.

To upgrade the technical capabilities of staff already working in the area of software development, actual participation in sophisticated development projects to build up experience would be best, as already mentioned. Further, introduction of an accreditation system to provide the incentive for self improvement would also be effective in the sense of setting goals for improvement of technical expertise. Further, this could be used as a means for publicizing to the outside the human assets of the software development companies of the Philippines. To achieve these objectives, the following are proposed:

- 1) Improvement of technical capabilities through implementation of large scale projects (mentioned earlier)
- 2) Establishment and operation of organization for the continued dispatch of trainees overseas for long periods
- 3) Establishment of computer software development and technology institute (mentioned earlier)
- 4) Establishment of EDP testing system

(4) Improvement of Infrastructure

The main infrastructure required for software development work include hardware environment, telecommunications environment and power supply.

Among these, the hardware environment could be improved by establishing individual companies, sharing certain facilities or lending out existing facilities for use, and other methods. The project for connection of large sized computers by the NCC and UP and sharing of systems would also be effective for this purpose.

Stabilization of the power supply is important for improvement of productivity in the software development industry and for observance of delivery schedules. Right now, what companies can do to deal with the problem is to install emergency power supplies. If necessary, assistance for this kind of investment should be considered.

Regarding the telecommunications environment, recently PT&T has laid a packet switching network, enabling communications between computers by the X.25 system. The completion of the network has meant considerable improvement.

(5) Data Entry Sector

The data entry sector is one whose great advantage weapon is its low cost labor force. In addition, in the case of the Philippines, there is the further attraction, for the

clients, that the workers are familiar with English and keyboards. There is still insufficient marketing activity to inform the potential markets of these features of the Philippines.

The Philippines is not the only country with these advantages in data entry. In the case of the U.S., the most important market for the Philippines, there are already competitors with similar conditions such as Jamaica and India. It is not considered that labor costs will soar in these countries in the near future. Further, those countries continue to make effort to strengthen their competitiveness. Therefore competition will be increasingly fierce in the future. In such a case, in addition to cost competitiveness, improved telecommunications facilities would be an important factor in strengthening competitiveness. The existence of the telecommunication facilities necessary for transferring the work would, it is considered, be extremely effective in drawing the attention of companies to the Philippines. It is necessary to establish the infrastructure for this. Note that in the data entry industry, it is considered that there will be rapid progress made in the use of OCRs, voice recognition entry, and other forms of mechanization and the demand for human entry will not grow that much. Therefore, massive public investment should not be made to provide the support to the data entry industry alone.

Regarding data entry for the Japanese market, there is a language barrier. To increase orders for data entry work from the Japanese market, a plan to have the operators learn Japanese is questionable in terms of costs due to the difficulty in mastering Japanese. Further, the biggest sources of data entry work, the banks and securities companies, do not like to release data outside due to the need to maintain confidentiality. From this viewpoint, it is considered very hard to develop the Japanese data entry market as a new market. However, there have already been cases of orders from Japan of data entry work not hampered by the Japanese language problems. It is necessary to have marketing effort to look for such kind of work in the near future.

Strengthening of overseas marketing activities is recommended to achieve the goals mentioned above.

3-2-2 Implementation Schedule and Priorities

Below, short-term programs are programs for which it is desired to start work or start preparations for immediately, and projects for which it is desired to start preparations for immediately are those which presume further consideration as to necessity, feasibility, profitability, etc. in the process of preparation. Medium and long term programs are programs for which immediate commencement of work or commencement of preparations are not deemed necessary at the present time, but which are recommended to be started along with the development of the computer software industry.

In addition, separate study is required as to the new establishment of a credit guarantee system for small and medium sized companies and a development financing system.

(1) Short-term Programs

1) Projects for which immediate implementation is recommended

1. Strengthening of access to overseas software development industry
2. Invitation of instructors from abroad or dispatch of instructors and students overseas for training
3. Continued dispatch of trainees overseas for long periods

2) Projects for which immediate preparation is recommended

- Establishment of computer software development and technology institute

- 3) Projects for which start of preparations after proper conditions are established is recommended
 1. Implementation of public project accompanied with large scale software development
 2. Establishment of marketing company as means to cope with language barrier in Japanese market
- (2) Medium and Long-term Programs
 - Introduction of EDP engineer testing
- (3) Priority Projects

The projects mentioned above are all considered to play important roles in the various stages of development of the computer software industry. Considering fund raising and the current state of the implementing system, however, it is possible that only a limited number of projects can be implemented. In such a case, projects must be limited to those which would be the key to future development and hopes must be placed on the autonomous effort of the private sector along with the subsequent industrial development.

Seen from this viewpoint, it is considered that the project for strengthening access to the overseas software development industries should be first tackled as the key to future development of the industry. This project would publicize to the overseas computer software development industries, which are suffering from marked shortages of personnel, the possibilities offered by the Filipino development industry, and would be important in laying the foundation for future growth such as by promoting orders and dispatching trainees. With regard to the implementing system, the industry could be fully expected to be eager to tackle the project.

The following two projects are important for the development of the industry, but, as mentioned earlier, there is a problem in that not much can be expected in terms of establishing a plan promoting system for helping realize the projects.

- 1) Establishment of marketing company as means to cope with language barrier in Japanese market: This project could be expected to help maintain continuous relations with the Japanese software development industry and promote computer software development in the Philippines. To realize the project, it is necessary to find Filipino and Japanese companies or organizations which were the center for establishing the marketing company. At the present stage where the existence of demand still cannot be confirmed, it would be difficult to expect individual companies to embark on such a project, so consideration should be given to having the industry as a whole deal with it with some government participation. In the future, based on this precedent, similar companies could be expected to be established at the private level.
- 2) Implementation of public project accompanied with large scale software development: This project has as its main goal the provision of advanced software development opportunities to software development companies. This would contribute to the improvement of the level of technology and partially upgrade the software development environment, thus helping raise the ability of software development companies to win orders. However, a financial support is necessary to realize it. This type of project would provide software development opportunities and simultaneously would be very meaningful in the computerization of the Philippines. Further, it would lead to upgrading of the software development technology of the Philippines. Considering these points, relevant organizations must positively study how to implement this plan.

3-2-3 Implementing System

There are numerous steps before implementation and there is linkage among the individual projects. Further, some projects are planned assuming the implementation of other programs. Therefore, in the implementation of programs, it is essential to establish an implementing system with suitable management and coordinating functions. It is necessary that in the system, suitable organizations perform their specified functions in accordance with the overall implementing plan. In the implementation of the programs, the following two organizations are proposed for the implementing system with overall promotion and coordinating functions.

- (1) General administrative bureau: This would obtain a grasp of the state of progress of the projects and, when necessary, would convene and coordinate related organizations and modify the projects. In the NITP, the NCC functions as the overall administrative bureau, but this program is not aimed at computerization but is aimed at the promotion of the software development industry, so it is preferred that the BOI Industry Group serve as the center of activity on the government side. Further, all programs by nature require that the private sector take the lead or else would not be effective. From this viewpoint, it is necessary to add representatives from the PCS, PSA, and PADEC.
- (2) Advisory committee: The above-mentioned administrative bureau would convene this periodically. The administrative bureau would report to the committee on the state of the activities and the committee would provide recommendations and support for the activities. The committee would desirably be comprised of representatives of the BOI, DTI Planning Group, BETP, NCC, and DOST and industry representatives drawn from the PCS, PSA, PADEC, ITAP, etc. The representatives would endeavor that the organizations they represent take action based on matters agreed on at the committee.

Table IV-3-1: Objectives and Development Programs for the Computer Software Industry

Industry	Tasks for industrial promotion	Effective measure	Development projects								
			Program to provide increased opportunities of financing	Strengthening of access to overseas software development industries	Formulation of the marketing company for Japanese market	Establishment of computer software development and technology institute	Implementation of a public project with large scale software developments	Invitation of overseas instructors or dispatch of teachers and students	Continuous dispatch of trainees overseas	Introduction of EDP engineer certification system	
		Schedule	D	A	C	B**	C	A	A	D	
Computer Industries Overall	- Promotion of national computerization	1. Promotion of usage of computer in government				X		X			
		2. Development of computer education							X		X
Computer Software Development Industry	(1) Upgrading software development capability	1. Provision of advanced software development opportunities domestically			X	X		X		X	
		2. OJT at overseas software companies			X				X		X
		3. Continuous contact with the latest technical movement in overseas		X		X			X		X
	2. Improvement of hardware and software tools	1. Usage of mainframe				X					
		2. Introduction of software tools		X		X					
	(2) Strengthening of overseas marketing activities	1. Receiving and/or dispatching missions		X							
		2. International exchange by industries		X			X				X
		3. Assistance for overseas marketing		X			X				
	(3) Improvement of infrastructure	1. Improvement of communication facilities									
		2. Increase in no. of hardware		X				X			
3. Secure substitutional power supply sources			X								
(4) Training of computer software engineers	1. Upgrading of computer education in educational institution								X	X	
	2. Improvement of hardware and tools in educational institutions					X					
	3. Provision of software development opportunities domestically				X		X		X	X	
	4. Measure to encourage personal technical level			X			X		X	X	
(1) Strengthening of overseas marketing activities	1. Receiving and dispatching missions			X							
	2. International exchange by industries			X							
	3. Assistance for overseas marketing			X							

Note: "Schedule" symbols: A = Should be implemented immediately B = Preparations should be begun immediately C = Preparations are recommended in accordance with the required preconditions are fulfilled
D = Medium to long-term project ** = Key project

Table IV-3-2: Summary of Development Program for Promotion of Computer Software Industry (1)

Program & Project	Project Outline	Requirements of Project	Recommendation on Implementation	Remarks
<p>1. Increase in opportunities for accessing export markets</p>	<p>1. Strengthening of access to overseas software development industries</p> <ol style="list-style-type: none"> 1. Inviting missions of overseas software development companies, establishing a basis for export marketing for Filipino through organizing Filipino companies for receiving missions. 2. Receiving of mission, exchanging ideas and opinions of industries and promoting business between individual companies. 3. Establishing organization for follow-up activities. 	<ol style="list-style-type: none"> 1. The Project should be planned and organized under the initiative of the private sector. 2. In receiving missions, careful preparations should be made for best results. 3. An organization and a plan for operation for follow-up activities. 	<ol style="list-style-type: none"> 1. Promotion of project: Plan and proposal by CITEM. 2. Implementation and coordination: A liaison council should be organized from representatives of participating companies and this will become the implementing body. 3. Schedule: This project would serve as the start of the overall program therefore immediate implementation is recommended. 	
<p>2. Establishment of marketing company as means for coping with language barrier in Japanese market</p>	<ol style="list-style-type: none"> 1. Establishing marketing company as a bridge between Japan and the Philippines for promoting long term, continued orders from Japan. The marketing company obtain orders from Japan, prepare the basic design and translations, then consigning out work to Filipino development companies. 	<ol style="list-style-type: none"> 1. Positive participation by Filipino and Japanese companies. 2. Operation as a private company. 3. Ensuring Japanese SEs who can serve as a bridge between Japan and Philippines. 	<ol style="list-style-type: none"> 1. Promotion project: Plan and proposal by BETP. 2. Implementation and coordination: Private companies of the Philippines and Japan. 3. Schedule: Preparation is recommended in accordance with the required preconditions are fulfilled. 	

Table IV-3-2: Summary of Development Program for Promotion of Computer Software Industry (2)

Program & Project	Project Outline	Requirements of Project	Recommendation on Implementation	Remarks
II. Provision of opportunities for advanced software development for improvement of development technology				
1. Implementation of a public project with large scale software developments				
(1) Establishment of computer system for government documents	<ol style="list-style-type: none"> Standardization of format of official document among government organizations and storing the documents in system. Connection of filing systems of different organizations through packet network for transfer of data, text, and images. 	<ol style="list-style-type: none"> The software should be developed primarily by Filipino software development companies. If necessary, technology should be transferred from an overseas company. A study group formed of the government organizations should be established for making consensus on the computerization of documents filings system. Partial implementation should be considered, in case of budgetary limitation. 	<ol style="list-style-type: none"> Promotion of project: Plan and proposal by NCC. Implementation and coordination: Implementation should be handled by the NCC, but the software development should be assigned out to the private sector. Schedule: The study group on the program, comprised of government organizations, should be launched at the early stage and the project should be started when a certain consensus has been achieved. 	Estimated funds required at the initial stage: 567.5 million yen (US\$4.37 million) For one organization.
(2) Connection of mainframe computers of NCC and UP for sharing systems	<ol style="list-style-type: none"> Connection of the NCC's and UP's computer by a dedicated high speed communications line to share the hardware usage environments, software resources, and development environments. 	<ol style="list-style-type: none"> The software should be developed primarily by Filipino software development companies. If necessary, technology should be transferred from an overseas company. The needs of the users should be reflected sufficiently to make an efficient system. 	<ol style="list-style-type: none"> Promotion of project, implementation and coordination: Plan and proposal by NCC. Further, a promotion committee comprised of government organizations, universities, and industrial organizations should be formed to support the NCC. 	Estimated funds required at the initial stage: 1,345 million yen (US\$10.35 million)
2. Establishment of computer software development and technology institute	<p>Establishing a training institute to provide the software development industry with following services and information:</p> <ol style="list-style-type: none"> Basic development technology and advanced technology information. Development environment to meet the needs for developing sophisticated software. R&D function contribute to computerization. Training of language and way of business required for tie-up with Japanese market. 	<ol style="list-style-type: none"> Avoid duplication of function with existing educational institutions. The suitable instructor set-up. Organizing an operational committee formed mainly of the industry and related government agencies. 	<ol style="list-style-type: none"> Promotion of project: DOST Implementation and coordination: The operational committee formed mainly of representatives of the industry and related government agencies. Schedule: Immediate preparation is recommended. 	

Table IV-3-2: Summary of Development Program for Promotion of Computer Software Industry (3)

Program & Project	Project Outline	Requirements of Project	Recommendation on Implementation	Remarks
III. Training of computer software engineers				
1. Invitation of instructors from abroad or dispatch of instructors and students overseas for training	<ol style="list-style-type: none"> 1. Invitation of instructors from abroad to provide short-term, concentrated courses with the aim of training instructors and advanced engineers. The courses should focus on the fields where more advanced technology is needed and there is a shortage of instructors in the Filipino universities. 2. Dispatch of instructors and students to overseas educational institutions as trainees. 	<ol style="list-style-type: none"> 1. Invitation of suitable experts required for the Philippines with a suitable timing sufficient preparations is essential (incl. a concentrated course using summer vacations). 2. Preparation study is required on how to maintain course after the instructors return home. 	<ol style="list-style-type: none"> 1. Promotion of project and implementation: The DECS and the software development industry should form a committee for systematic, continued engagement of instructors or dispatch of students. 2. Schedule: Immediate implementation is recommended, when taking into account the fact that considerable time is required before results appear in developing manpower. 	
2. Continued dispatch of trainees overseas for long periods	<ol style="list-style-type: none"> 1. Continued dispatch of trainees to overseas software development companies with the aim of training software engineers, in particular SEs and SAs. 	<ol style="list-style-type: none"> 1. Continuous operation. 2. Positive participation of the industry to ensure the smooth reception of the trainees after they return Philippines. 	<ol style="list-style-type: none"> 1. Promotion of project: Plan and proposal by BOI. 2. Implementation: In the implementation, a promotion committee should be formed by the industry. 3. Schedule: The promotion committee should be formed and operated immediately. 	
3. Introduction of EDP engineer testing	<ol style="list-style-type: none"> 1. Introducing EDP test system to give encouragement for self improvement and to inform the outside world of the human resources available in software development in the Philippines. 	<ol style="list-style-type: none"> 1. Formation of an operating organization comprised of representatives from industry, academics, educational institutions, and government, and assistance by government for operating expenses. 2. Positive support of industry in promotion of system and active use of the system by the industry. 3. Establishment of system of education for obtaining certificate and system to follow-up persons with certificate. 	<ol style="list-style-type: none"> 1. Promotion of project: The DOST should act as an administrative bureau. 2. Implementation: An operating organization should be established by industry, academy, educational institutions, and other related organizations. 3. Schedule: Preparatory study should be commenced immediately. 	

Figure IV-3-1: Computer Software: Development Stage and Expected Effects of Each Project

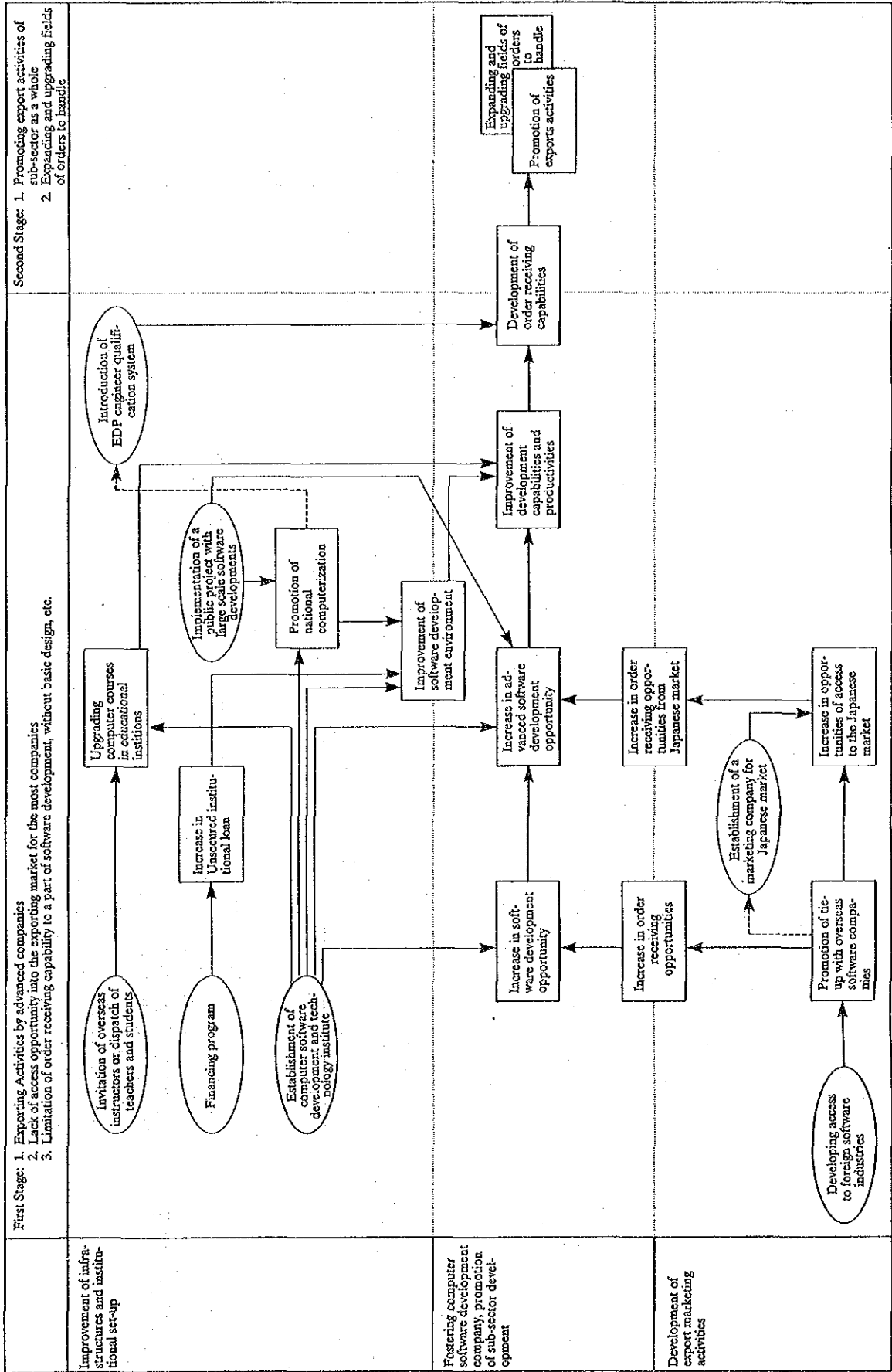
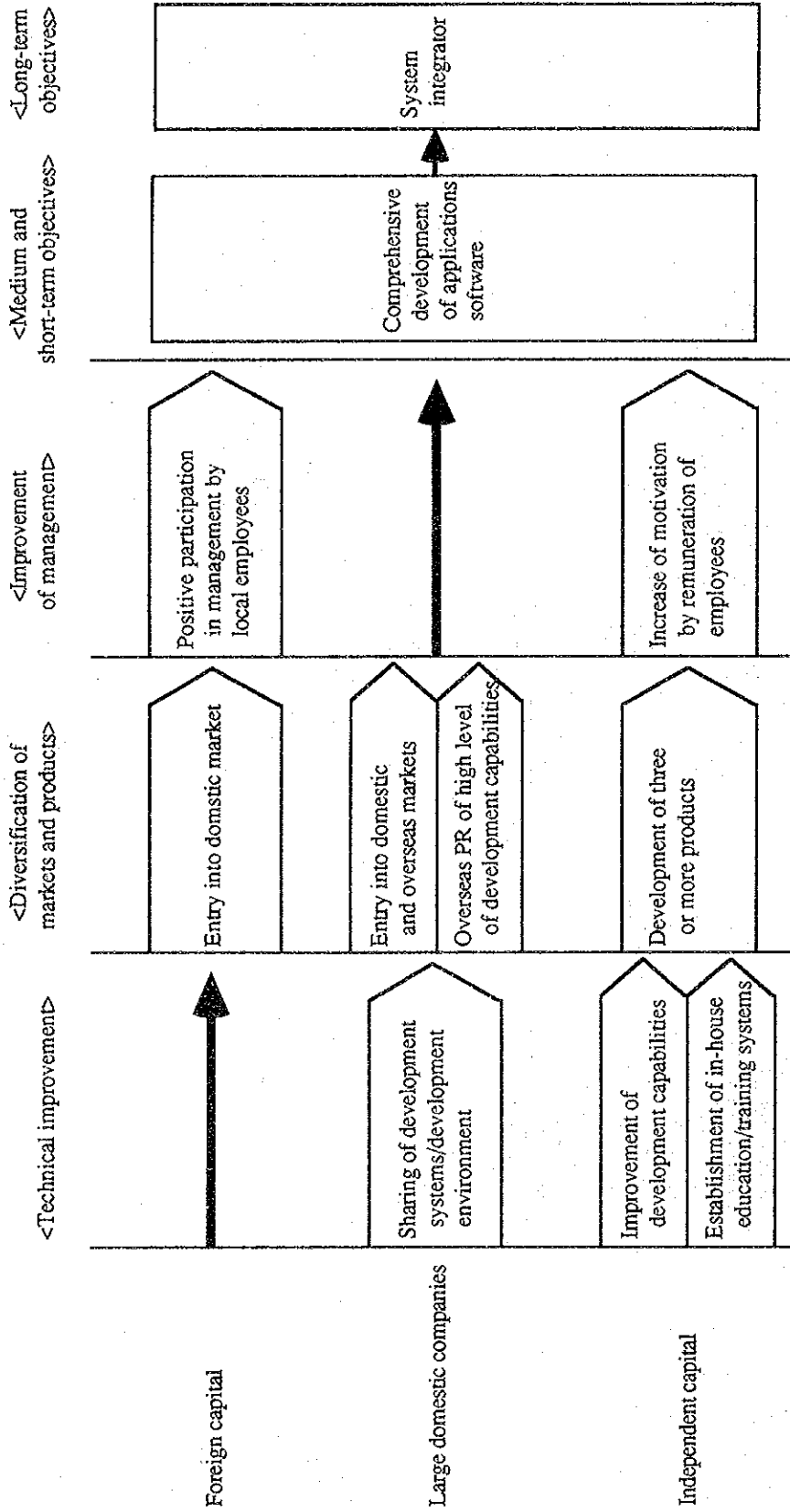


Fig. IV-3-2: Targets to Be Achieved by Software Companies



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