

2. Project for Activities to Organize Participation in Foreign Furniture Fairs
An industry marketing framework should be established through these activities and efforts made to establish tie-ups. These tie-ups are expected to play an important role in the future development of individual companies.

(5) Recommendation on the Implementing System

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

1. General Administrative Bureau:
To be responsible for following the progress of individual projects, calling up and coordinating related organizations as necessary, and making any necessary modifications in the projects. This organization should consist primarily of staff from the DTI/BOI and CFIP.
2. Advisory Committee:
In response to the activities of the administrative bureau described above, this committee will be responsible for providing advice and assistance. It is to consist of representatives from the BOI, BSMBD BPS, BETP, CITEM, DTI Planning Group, DTI Regional Group, CITC, PDDCP, and CFIP. The representatives would endeavor that the organizations they represent take action based on matters agreed on at the committee.

As stated above, CFIP, in cooperation with related government agencies, is creating the Furniture Industry Training Board for the coordination and effective implementation of various study and training programs. This move stems from a philosophy which is shared by the Advisory Committee for this development program. It is hoped that similar systems will be used not only for study and training but also for coordination of entire programs for industrial subsector development.

Bodies responsible for implementation of the individual projects will be discussed in Chapter 6.

Table IV-5-1: Export Targets for the Furniture Industry

(Unit: US\$1,000)

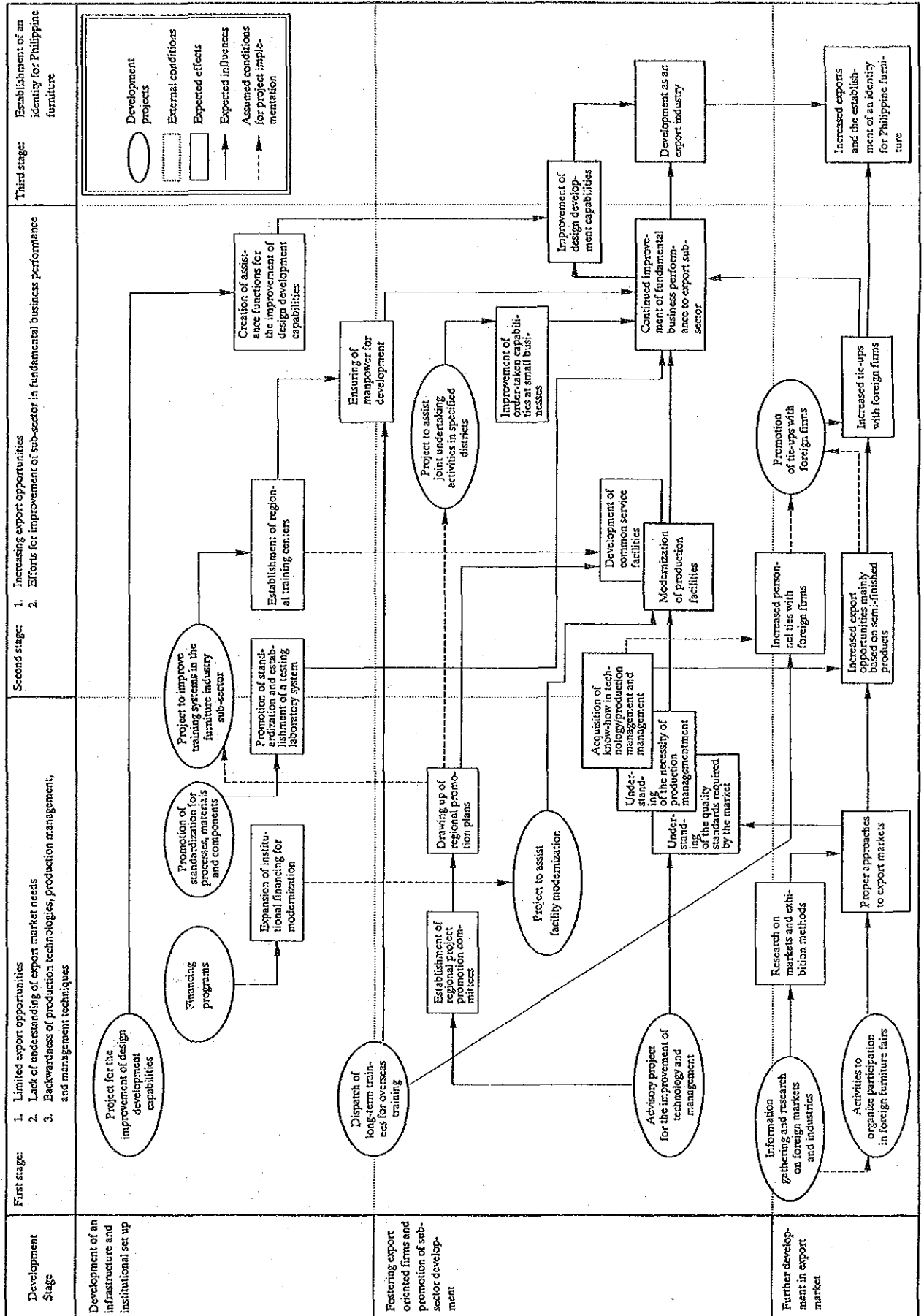
	Wood Furniture	Rattan Furniture		Buri Furniture	Furniture Parts	Others (Metal, Bamboo, etc.)
		* (a)	** (b)			
1989	24,000	111,381	92,010	16,644	4,002	2,011
1990	40,000	128,088	101,211	16,940	4,056	2,011
1991	46,000	147,301	111,333	17,295	4,090	2,405
1992	52,900	169,396	122,466	17,463	4,098	2,661
1993	60,835	194,806	134,712	17,631	4,106	2,918
1994	69,960	224,027	148,814	17,799	4,114	3,174
1995	80,454	257,631	163,002	17,967	4,122	3,431
1996	92,522	296,275	179,302	18,135	4,129	3,687
1997	106,401	340,717	197,232	18,303	4,137	3,944

Note: * (a) First Scenario — The supply of raw materials is not a problem. New sources were found (Burma and Papua New Guinea) and there is efficient utilization of rattan. With this scenario the annual growth rate is placed at 15 percent. This is considerably lower with its past performances.

** (b) Second Scenario — The Indonesian ban is enforced. Other sources cannot sustain the industry and therefore only the local thinner poles are available. A 10 percent growth can be accounted for by the increase in price per unit volume because of inflation and short supply.

Source: "Sectoral Development Studies," BOI, February 1990

Fig. IV-5-1: Wooden Furniture Sub-sector: Development Stages and Expected Effects of Development Projects



6. Development Program for Wooden Furniture Industry

Outline, requirements and recommendation on implementation of each project are shown in Table IV-6-1. Again, Table IV-6-2 shows the relationships between individual projects and problems and effective measures for the development of the industry.

6-1 Promotion of Proper Approaches to the Export Market

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

1) Outlines of project

a) Outline

This project has as its objective the formation of a basic strategy for participation in trade fairs, the mastery of export marketing, and the expansion of export markets.

In order to achieve these objectives, the following basic strategies have been established:

1. Public relations campaigns for wooden furniture, which is a non-traditional export product
2. Research on markets and industry structures in host nations for exhibitions/fairs
3. Formation of strategies for effective participation

This project is to be realized through the organized activities of industry associations, the government, and related public institutes. A Wooden Furniture Export Marketing Working Committee (tentative name) will be established around CITEM and CFIP, and it is important that efficient linkages be established between the activities of PTTC and BETP and that further assistance be extracted from these organizations.

The main activities of this liaison committee are to be as follows:

- Invitation of experts on the targeted furniture markets as consultants.
- Based on CITEM exhibition plans, the collection of pertinent information concerning participation (theme/concept, location, schedule, pamphlets, etc.) and the overseeing of preparatory activities.
- Effective utilization of the foreign experts invited by CITEM and PTTC. In particular, coordination of their specialties, period of stay, and schedule should be considered.
- Dispatch of researchers and fact-finding missions in accordance with exhibitions. Areas to be surveyed include market trends, industry operations, and trends in competing nations.
- Promotion of personal exchanges with overseas industry associations.

b) Requirements of project

Achievement of the project goals will require the following activities:

1. Invitation of experts on the targeted furniture markets as consultants.
2. Establishment of an organized framework for the complete range of exhibition activities from preparations through follow-up efforts.

c) Reference in implementation of project

See Chapter 3, Section 3-3-(7), "4) Participation in Foreign Furniture Fairs."

2) Recommendation on implementation

a) Implementing System

1. Promotion of the project: CITEM should be responsible for planning and proposals. Coordination with the views of CFIP is important during planning activities.
2. Implementation: It would be most efficient for the implementing office to be composed of representatives from CITEM and CFIP. During implementation, participating firms should be recruited to form a Wooden Furniture Export Marketing Working Committee. This committee should solicit the participation of representatives from CITEM, CFIP, BETP, PTTC, and PDDCP.

b) Schedule

The project should be implemented immediately.

(2) Information Gathering and Research on Foreign Markets and Industries

1) Outline of project

a) Outline

This project has as its objective the enhancement of foreign information gathering and research activities and the indirect aid to the project for strengthening product development and export marketing. Industry and government bodies will work together to implement the following activities:

1. The information gathering capabilities of BETP, CITEM, PTTC and PDDCP will be utilized to collect information concerning foreign wooden furniture. Special consideration will be given to market and industry trends in leading exporting nations.
2. Surveys and research by industry associations. Opportunities such as participation in foreign trade fairs, the dispatch of fact-finding missions, and exchanges with foreign industry associations should be actively utilized.
3. Establishment of a resource center in a location which is convenient for users and the organization and accumulation of information.
4. Establishment of study committees to investigate specific topics and study possible countermeasures and strategic proposals.
5. Dissemination of the results of this research through industry bulletins and CITEM publications. Reflection on the activities of related government organizations such as CITEM, PTTC and PDDCP.

b) Requirements of project

Achievement of the objectives of this project will require that the resource center be placed in a convenient location and that information be organized and accumulated.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: It is desirable that DTI/BETP draw up plans and make proposals.
2. Implementation: It is recommended that the working committee and the secretariat be utilized for arranging participation in furniture fairs abroad as stated above.

b) Schedule

It is appropriate for implementation in accordance with the project "Organization of Activities for Exhibition in Foreign Furniture Fairs" stated above.

6-2 Improvement of Business Performance Capable of Satisfying Export Market Needs

Advisory Project for the Improvement of Wooden Furniture Technology and Management

1) Outline of project

a) Outline

This program 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 and provide plant diagnoses together with advice on the modernization of facilities. The team will also make several follow-up visits.

At the same time, a Support Team consisting of staff from Philippine technology and management guidance organizations will be created. The Advisory Team will prepare a set of guidelines concerning methods of instruction to allow this Support Team to carry out instruction on its own in the future. After completion of the project, the Support Team will continue to provide guidance to participating firms and will also offer guidance to firms which were not covered by the project.

The main objectives of this project are as follows:

1. To improve awareness of the quality standards required by export markets.
2. To acquire production technologies, production management, quality control, cost control, and other areas (see Chapter 3) needed to achieve these quality standards.

A National Promotion Committee will be formed for promotion of the project, and Regional Promotion Committees will be organized by local industries. Based on Advice from the Advisory Team, the Regional Promotion Committees will draw up and implement promotion plans for their own districts. The National Promotion Committee and the Advisory Team will coordinate promotion plans in each district and assist in their promotion.

b) Requirements of project

In order to achieve the specified objectives of the project, the following activities will have to be carried out:

1. Formation of a National Promotion Committee and Regional Promotion Committees

The project must provide guidance to individual companies while at the same time working to improve their business. Specifically, this will involve the determination of problems in each district (e.g., development of an adequate infrastructure or the joint purchase/use of facilities, both of which are difficult for individual companies to carry out) and the preparation and implementation of development program. As a result, it will be possible to resolve problems which could not be resolved by individual company visits alone.

2. Formation of Appropriate Advisory and Support Teams

It is suggested that Support Team members undergo language study as well as overseas training to deepen their familiarity with the technology and production management standards aimed at by this project.

c) Reference in implementation of project

1. Advisory team makeup

— Fields for guidance

- a. Total quality control, the just-in-time method
- b. Industrial engineering
- c. Equipment layout
- d. Marketing
- e. Design development of new products
- f. Through awareness of the importance of production management and cost management

— Advisory team makeup

- | | |
|---|----------|
| a. Production technology, quality control | 1 member |
| b. Product development, marketing | 1 member |
| c. Management techniques | 1 member |

2. Support team makeup

The support team will consist of a corresponding member for each of the advisory team members together with one person for business affairs and coordination, resulting in a total of four members. For example:

- | | |
|---|-------------|
| a. Production technology, quality control | PITC/CITC |
| b. Product development, marketing | PDDCP/FPRDI |
| c. Management techniques | BSMBD |
| d. Business affairs and coordination | CFIP |

3. Daily schedule

The advisory team will provide each district or group with seven two-week units of training, with a three-month interim between each visit. Thus the effective implementation period for the project, including a preparation period, is two years.

In each district, the following activities will be carried out as part of the program:

1. Before the visits are conducted, seminars on TQC, productivity, product development, marketing, and so on will be held for the managers of firms in each district.
2. The visits and the results thereof will be monitored by the support teams.
3. Development program will be drawn up in each district, and joint production and training facilities will be purchased in line with this program.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: The BOI should take responsibility for planning and proposals. CFIP opinions should also be taken into account during the planning stage.
2. Implementation and coordination: A National Promotion Committee will be organized together with regional Promotion Committees in order to assure the promotion of the project. The National Promotion Committee should be under the leadership of CFIP and should include the participation of representatives from the BOI, BSMBD, CITC, NMYC, PTTC, PDDCP, FPRDI, etc. The regional Promotion Committees will be organized around CFIP branch offices.

b) Schedule

This project is critical to the Development Program and should be implemented immediately.

6-3 Development of Economic and Technical Infrastructure and Institutional Set-up

(1) Facility Modernization Assistance Project

1) Outline of project

a) Outline

This project is intended to assist individual manufacturers in modernizing their facilities to allow the expansion of business operations. The project will also assist in the purchase of equipment for joint use when the equipment is too costly for individual purchase and is suited for joint use.

The project comprises the following elements:

1. Preferential application of institutional financing for the purchase of appropriate new machinery and facilities.
 - a. Purchase of appropriate secondhand equipment
 - b. Joint facilities based on promotion plans drawn up by the promotion committees of the Advisory Project for the Improvement of Wooden Furniture Technology and Management
2. Examination of a guarantee system for loans with industry associations acting as a basis for this operation.
3. A technical team would be formed around CITC to assist in the introduction of wooden furniture manufacturing equipment. The team will provide companies which have purchased approved used machinery with services such as: (1) fine tuning; (2) initial instruction in operation; and (3) other consulting services.

b) Requirements of project

In order for this project to achieve its stated objectives, the following activities will have to be carried out:

1. Organization of a technical team to assist in the introduction of machinery.
2. Preparation of lists of approved new and used equipment for purchase, and preferential application of institutional financing.

Institutional financing could involve the use of existing programs. The loan guarantee system is thought to be very important and effective, but ample deliberations will be required. If these are expected to take a long time, this segment should be implemented separately from the other elements of the project.

This project as a whole may also be implemented separately from the other projects. Many small and medium-sized companies 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 be implemented only after completion of the Advisory Project for the Improvement of Wooden Furniture Technology and Management.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: The BOI should take responsibility for planning and proposals. CFIP opinions and advice from the Advisory Team of the Advisory Project should also be taken into consideration.
2. Implementation: The BOI and CFIP will be responsible for monitoring this project, and the BSMBD and CITC will take responsibility for the assigned functions. It might also be possible to obtain assistance from the National Promotion Committee of the Advisory Project.

b) Schedule

Preparations should be begun simultaneously with the organization of the National Promotion Committee for the Advisory Project.

(2) Project to Assist in the Formation of Cooperatives in Specified Districts

1) Outline of project

a) Outline

This project is to be implemented after completion of the Advisory Project for the Improvement of Wooden Furniture Technology and Management. Those districts where companies are strongly in favor of setting up joint operations and those districts where objective observation suggests that there is a pressing need for such operations will be designated. Technology and management-related guidance and assistance will then be provided to allow the small and medium-sized companies in these districts to establish cooperatives and expand production capacity.

1. Target districts will be designated.
2. Regional Promotion Committees will be formed in the target districts.
3. An Advisory Teams will be organized all over the country.
4. Interested firms will be solicited and corporate groups organized. Each group will then draw up and implement a cooperative plan under the guidance of the Advisory Team.

The cooperative project will include decision-making regarding which joint facilities and equipment are necessary for each district. Concerning the operation of the joint facilities, however, it is thought best that a semi-governmental organization or joint governmental/industrial organization separate from the cooperative be formed so that outside firms may use the facilities as well.

Concerning the use of institutional financing for the purchase of facilities and equipment, etc., loan conditions should be relaxed and other appropriate measures taken.

b) Requirements of project

In order for this project to reach the above-stated objectives, the following activities must be carried out:

1. Establishment of incentives for the cooperative companies.
2. Formation of an appropriate Advisory Team to lead cooperative efforts.

c) Reference in implementation of project

Advisory team makeup

The Advisory Team must have the functions of production technology guidance, small business management guidance, and export promotion assistance. With this in mind, the team might consist of representatives from the following organizations:

- | | |
|--------------------------------|-------------|
| a. Production technologies | CITC, PDDCP |
| b. Small business management | BSMBD |
| c. Export promotion assistance | BETP, PTTC |

It would be most efficient for the Advisory Team to be organized around the Support Team of the Advisory Project for the Improvement of Wooden Furniture Technology and Management described above. Foreign experts with experience in small business cooperatives might also be invited.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: The BSMBD should take responsibility for planning and proposals in cooperation with CFIP.
2. Implementation: An office comprising representatives from the BSMBD and CFIP will be organized at the national level. Regional Promotion Committees will be organized in each district, but it is thought that the Regional Promotion Committees organized under the Advisory Project described above would be adequate.

b) Schedule

This should be studied in light of the progress of the Advisory Project.

(3) Improvement of Design Development Capabilities

1) Outline of Project

a) Outline

Skilled individuals capable of developing original designs will be trained to strengthen the functions of PDDCP to assist design development from a long-term viewpoint. With such people forming a core, the functions of PDDCP will be enhanced and a system created to allow the industry to reap full benefits.

The principle objectives of the project are as follows:

1. Expanded information collection and research concerning export markets and furniture designs in the industrialized nations.
2. Dissemination of designs and training of industrial designers.
3. Development of a system for the protection of designs and a corresponding monitoring body.

The objective of information gathering and research is to obtain an understanding of current market needs and contribute to design and product development at individual companies. In order to strengthen this function, the Design Study Committee consisting of representatives from the industry and related organizations should be formed to carry out organized, planned activities. Among these activities will be the following:

1. Preparation and publishing of basic reference materials such as design, blueprint, and detail collections in line with industry needs.
2. Periodic publishing of bulletins containing information on foreign marketing and market trends in addition to designs.
3. Invitation of foreign experts and the dispatch of researchers and fact-finding missions abroad.

Furniture must be functional and durable, and designs are limited by furniture structure and manufacturing technologies. Thus, designers must have a basic acquisition of furniture manufacture in addition to expertise in external design work. Qualified industrial designers must be uncovered and trained, and a core of skilled individuals built up for the dissemination of designs.

The following activities will be necessary to to strengthen the function.

1. Holding of seminars and study groups on chairs, cabinets, dressers, and other individual products. These meetings should cover not only design factors but production-related technologies and materials as well.
2. Design competitions and superior furniture exhibitions should be held to assist in discovering talented designers and improving the overall quality of designs.
3. Foreign experts should be invited to hold seminars, study groups, and consulting sessions.
4. Mid- to long-term dispatch of PDDCP design development staff overseas. This should be preceded by language training.

The introduction of a system for design protection is needed to bring order to the industry, prevent excessive competition, and promote fair trade and corporate tie-ups. To introduce a design protection system and arrange a control and supervision system, a committee responsible for the following kinds of activities should be formed:

1. Information gathering and research on design-related regulations and policies in other countries.
2. Dispatch of PDDCP management staff and supervisors at other related government bodies for administrative training overseas.
3. Drafting of a proposal for a design protection system and establishment of a monitoring body.

b) Requirements of project

1. Establishment of a joint activities organization (e.g., a Design Study Committee) by industry and government representatives to promote active participation and utilization by the industry.
2. Discovery and training of talented furniture designers.
3. Active implementation of various programs for the dissemination of designs.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: The PDDCP should be responsible for planning and proposals.
2. Implementation: The PDDCP will be the main organ of implementation, but the Design Study Committee should be formed with the participation of industry representatives, PTTC, CITC, and FPRDI in order to ensure full utilization by the industry.

b) Schedule

The training of designers who play the central role in PDDCP's activities is of critical importance to the implementation of this project and will require the most time. Work should be begun immediately on uncovering promising candidates and dispatching them for training overseas. In this sense, the activities of the Design Study Committee should be begun as soon as possible.

(4) Arrangement of Training Systems in the Furniture Industry

1) Outline of project

a) Outline

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

The former coordinates the existing training programs and studies new training programs to fill gaps in the areas where the programs are in short supply.

Training systems such as CITC and NMYC have been established to some extent in the central district, but there are no such systems in the provinces, where companies suffer from a severe shortage of skilled workers. In order to resolve this problem, regional training systems should be introduced in districts where geographical conditions make it difficult to utilize training facilities in Manila, and CFIP branch offices can take responsibility for operations.

Implementation of this project would come after completion of the Advisory Project for the Improvement of Wooden Furniture Technology and Management. Based

on the results of this project, each district should: (1) draw up guidelines for the training system thought to be necessary; and (2) determine whether or not there is a need for joint facilities.

Each regional training center would be composed of the following subsystems:

1. Construction and operation of the training center. Necessary new and used equipment will be purchased, with fine-tuning to be conducted with the assistance of CITC. Center functions will include (1) training and (2) lending of equipment to local companies and appropriate guidance. The centers will accept orders for processing and will be self-supporting. Their budgets must cover both operating expenses and repairs.
2. Training and dispatch of instructors: Chief instructors will be trained by CFIP or a semi-governmental agency under the direction of CFIP. Lecturers on quality control and other special topics will be systematically dispatched from a pool of lecturers to be formed by CITC/NMYC and other related organizations. When occasion demands, trainees will have access to the facilities of CITC or NMYC.

b) Requirements of project

It is critical that the training centers be established based on the needs of each individual district. In this sense, the regional promotion plans laid out by the Regional Promotion Committees as part of the Advisory Project are a necessary precondition for the implementation of this project. The following are some of the factors which should be taken into consideration:

1. Training needs and objectives
2. Objectives of establishing a peripheral technologies service system
3. Need for joint facilities and estimated demand

Although existing organizations may be made responsible for operation of the centers, it is important that (1) operation content is based on the needs of each individual district, and (2) users of the center have an opportunity to voice their opinions concerning its operation.

c) Reference in implementation of project

Sample Specifications for a Regional Training Center

- | | |
|--------------------------|---|
| 1. Site area: | 2,400 - 3,000 m ² |
| 2. Floor space: | 69 x 21 m or greater |
| 3. Facilities/equipment: | See Table IV-6-3 |
| 4. Equipment layout: | See Fig. IV-6-2 |
| 5. Training programs: | Skilled workers 3-6 months, Supervisors 1 year,
Managers 2 years |

Rough estimates regarding machines, tools and other facilities based on 2-4 above are shown in Table IV-6-4.

3) Recommendation on implementation

a) Implementing system

1. Promotion of the program: DTI regional offices will be responsible for making proposals based on plans drawn up by the Regional Promotion Committees.
2. Implementation: The project will be managed by CFIP or a newly-established third-sector organization.

b) Schedule

The project should be implemented based on studies by the Regional Promotion Committees of the Advisory Project for the Improvement of Wooden Furniture Technology and Management.

4) Expected economic effects

Direct advantages to be gained from implementation of this project include the training and joint facility services, which can be expressed quantitatively in the form of training fees and facility utilization fees. Moreover, since the program will be implemented under the leadership of local companies only after completion of the Advisory Project for the Improvement of Wooden Furniture Technology and Management, it will have an extremely large impact on the promotion of local industries.

(5) Promoting of Standardization for Manufacturing Processes, Materials and Components

1) Outline of project

a) Outline

Fields thought to require standardization include sawing lumber, plywood, and auxiliary materials such as adhesives, paints, and metal fittings. Standards already exist for sawing lumber and plywood, but raw material supply standards for the furniture industry should be reconsidered in light of its status as an export industry.

In order to promote the standardization of raw materials and related materials, this program will encompass the following activities in an attempt to achieve (1) the preparation of standards, (2) industry acceptance of standards, and (3) the creation of an inspection system for enforcement of the new standards:

1. Standards will be drawn up by existing standardization Technical Committees (TCs).
2. Efforts will be made to gain acceptance for the standards among member firms.
3. Because the existing BPS inspection system will be insufficient for enforcement of the new standards, the inspection system expansion project being planned by the BPS will be promoted.

b) Requirements of project

Industry acceptance and the inspection system are thought to be especially important for standardization in the targeted fields.

1. The existing BPS budget and organization alone will be insufficient. Taking into account the importance of standardization to improved quality standards, the industry should actively work to promote acceptance of the new standards. Suggested activities include the use of industry publications, assistance from the above-described Advisory Project, and the establishment of other programs to achieve acceptance.
2. The preparation of an inspection system is currently underway at the BPS, but plans have yet to be implemented. It is important that both the industry and related organizations come to realize the importance of these efforts and provide assistance, while BPS should work to figure out what has stalled the project and request any necessary assistance from related organizations.

c) Reference in implementation of project

Some Related JIS Standards

1. Plywood

- 1,000 mm x 2,000 mm x 3 mm (± 0.05 mm)
- 1,000 mm x 2,000 mm x 4 mm (± 0.05 mm)
- 1,000 mm x 2,000 mm x 10 mm (± 0.05 mm)
- 1,000 mm x 2,000 mm x 15 mm (± 0.05 mm)

2. Adhesives

See Table IV-6-5.

2) Recommendation on implementation

a) Implementing system

The BPS should organize standardization committees (separately from the existing TCs) through CFIP, PWPA, PTTC, FPRDI, and DENR and draw up and implement appropriate programs. The BPS budget and organization will be insufficient, and it will be necessary to utilize the public relations branches of all participating organizations.

b) Implementation

The BPS should begin drawing up a program schedule immediately.

6-4 Promotion of Tie-Ups with Foreign Firms

(1) Long-term, Continuous Dispatch of Trainees Overseas

1) Outline of project

a) Outline

Trainees will be continuously dispatched to foreign furniture manufacturers with the objective of training skilled laborers and middle-level technicians. There will be two types of dispatch. The first type consists of government sent trainees through foreign training assistance organizations. Since there are already some programs of this type, they can be implemented in line with already-existing ones. Many of the programs, however, are for a short period of time, and the number of trainees is limited. This type of training cannot be expected to have substantial effects. The second type of dispatch involves asking foreign corporations to accept trainees. Since this training involves actual work on sophisticated production lines, it is thought to be extremely effective and should be utilized if possible.

b) Requirements of project

Achievement of the project goals will require the following activities:

1. 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.
2. 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 established with foreign corporations.

c) Reference in Implementation of project

In Japan, JICA and the Association for Overseas Technical Scholarship (AOTS) are the organs which send technical experts abroad and which accept foreign engineers and implement studies and training programs. Established in 1959, AOTS receives technological trainees from developing nations as an undertaking subsidized by MITI. It also implements studies and training programs on management, quality control, production control and various other subjects on assignment from the Asian Productivity Organization (APO), UNIDO, etc. In the future, local governments, chambers of commerce, and furniture industry associations in Japan are also very likely to serve as liaisons for setting up training programs.

2) Recommendation on implementation

a) Implementing system

1. Promotion of the project: From the standpoint of providing support to the industry, the BOI should be responsible for planning and proposals.
2. Implementation: During implementation the industry should establish a promotion committee. This committee is to have the following responsibilities:
 - a. Contacts with foreign liaisons, introductions to receiving firms, and decisions concerning training program.
 - b. Selection of trainees and guarantees of trainee identity/background and conduct for the receiving country.
 - c. Effective utilization of returned trainees and follow-up monitoring and training.

3) Implementation plan

The promotion committee should be established immediately and work begun on government dispatches. Concerning dispatches to individual companies, there are various possibilities for implementation depending on the local framework for reception of trainees, including programs, budgets, and industry consensus. A type of dispatch suited to the conditions of the receiving country must be worked out jointly by industries and governments in both the Philippines and the receiving nation.

(2) Promotion of Tie-Ups with Foreign Firms

1) Outline of project

This project is to be implemented only after completion of the Project for Activities to Organize Participation in Foreign Furniture Fairs and has as its objectives the creation of a base for the promotion of tie-ups in the Philippines and the establishment of a matching service. This project will include the following elements:

1. Creation of lists of companies desiring tie-ups and organization of related information
2. Assistance in the preparation of company brochures, product pamphlets, and price lists for these companies
3. Holding of periodic meetings with foreign industry associations
4. Organization of information concerning foreign companies interested in tie-ups
5. Dispatch of missions overseas for the promotion of tie-ups
6. Establishment of a mediating system for the promotion of tie-ups

2) Recommendation on implementation

a) Implementing system

The DTI/BOI is to be responsible for promotion of this project, and an office is to be set up in the BOI. In addition, a furniture subcommittee will be established in the committee for promotion of tie-ups with foreign companies.

b) Implementation

This project is to promote development of the Project for Activities to Organize Participation in Foreign Furniture Fairs.

Table IV-6-1: 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>Promotion body: CITEM/CFIP</p> <p>Implementation system: Organizing an export marketing working committee by CITEM & CFIP, in cooperation with PTTC & BETP</p> <ol style="list-style-type: none"> 3. Schedule: Immediate implementation is recommended.
<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>Promotion body: BETP</p> <p>Implementation system: The office for the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs and its working committee.</p> <ol style="list-style-type: none"> 3. Schedule: Implementation in accordance with the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs is recommended.
<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>Promotion body: BOI/CFIP</p> <p>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. 3. Schedule: Immediate implementation is recommended.

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 facilities 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 Improve-</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> <ol style="list-style-type: none"> 1. The establishment and operation of training centers. 2. Instructor training and dispatch systems. 	<p>ment of Wooden Furniture Technology and Management, and establishment of the need for and objectives of training in the plan.</p>	<p>sector organizations centering CFIP.</p> <ol style="list-style-type: none"> 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. 4. Estimated funds required: Approx. \$158 million (US\$1,217,000)
5. Promotion of standardization for manufacturing processes, materials, and components	<p>The development and dissemination of standards for lumber, plywood, adhesives, paints, and metal fittings, etc.</p>	<ol style="list-style-type: none"> 1. Active cooperation from industry. 2. Assistance for the project of BPS to establish the testing laboratory system. 	<ol style="list-style-type: none"> 1. Promotion body: BPS. 2. Implementation system: Organization of a committee (separate from the Technical Committees) to promote disseminate the standards among the industry. 3. Schedule: Immediate implementation is recommended.
<p>IV. Promotion of tie-ups with foreign firms 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>	<ol style="list-style-type: none"> 1. Active participation by industry to ensure continued implementation of the project and the smooth acceptance of trainees upon their return. 2. Establishment of minimum training objectives in cooperation with companies providing the training. 	<ol style="list-style-type: none"> 1. Promotion body: BOI. 2. Implementation system: Establishment of a promotion committee by the CFIP. 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.
2. Promotion of tie-ups with foreign firms	<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>	<ol style="list-style-type: none"> 1. Promotion body: BOI. 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. 3. Schedule: Implementation succeeding to the Project for Organization of Activities for Exhibition in Foreign Furniture Fairs.

Table IV-6-2: 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 fairs	Information Collection 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	
	Schedule	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	X
	2. Individual guidance to firms	X		X								
(2) Acquisition/introduction of advanced production technologies	1. Acquisition of basic wood-working technologies	X	X	X							X	X
	2. Introduction of production management technologies	X	X	X							X	X
	3. Promotion of tie-ups with foreign firms	X		X		X					X	X
	4. Strengthening of guidance systems			X		X						
(3) Modernization of facilities	1. Recognition of the necessity and points to be improved	X	X	X							X	X
	2. Individual guidance to firms	X		X								
	3. Promotion of tie-ups with foreign firms	X		X		X					X	X
	4. Strengthening of guidance systems			X		X					X	
(4) Improvement of procurement of raw and auxiliary materials	1. Preparation/application of appropriate institutional financing			X		X						
	2. Establishment of technical assistance systems for introducing appropriate technological facilities			X		X					X	
	3. Assistance in introducing common facilities			X		X					X	
	4. Assistance in forming/developing cooperatives			X		X					X	
(5) Improvement of training systems in the furniture industry sub-sector	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	
(6) Strengthening of export marketing activities	1. Systematization of activities for participating in foreign trade fairs	X		X							X	
	2. Guidance by furniture experts of the export markets	X										
	3. Assistance to firms' sales promotion activities	X	X	X								X
	4. Strengthening of information gathering and research activities	X	X	X								
(7) Improvement of product development capabilities	1. Training of staff necessary for strengthening design development capabilities	X									X	
	2. Strengthening of information gathering and research activities	X	X	X								X
	3. Strengthening of acceptance of designs 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

Table IV-6-3: List of Machinery and Equipment for Local Training Centers

Name of Machine/Equipment	Particulars	
1 Universal Circular Saw		
2 Leveling Planer	12HP SN480207	1.5kW
3 Surface Planer	Type H-79	3.7kW
4 Thickness Planer	AP-600	5.5kW
5 Universal Circular Saw with Sliding Table		
6 Band Saw		2.2kW
7 Router Machine	2HP	1.5kW
8 Spindle Molder (High Speed Shaper)	2HP	1.5kW
9 Mortiser		1.5kW
10 Gear Attachment Boring Machine		
11 Slotting Boring Machine		
12 Bench Drill	3,200rpm	
13 Corner Locking Machine	3HP	
14 Wide Belt Stroke Sander		
15 Wide Belt Sander		
16 Spindle Sander		
17 Non-Circular Standing Lathe	Type	
18 Woodworking Lathe	Type WL 08	0.75kW
19 Wood Copying Lathe	Type SN	4kW
20 Dust Collector		15kW
21 Air Compressor	3HP	
22 Coating Spray (Water Booth)		0.75kW
23 Circular Saw Blade Sharpener		
24 Cutter Grinder		0.75kW
25 Double Head Grinder	5HP	
26 Band Saw Blade Sharpener		
27 Dowel Making Machine		
28 Table Press Machine		

Table IV-6-4: Estimated Construction Costs of a Local Training Center

Particular	Estimated Costs	
	in million yens	in thousand US dollars
1. Machines and Equipment	50	(385)
Of which:		
Production facilities	25	(192.5)
Dust collection equipment	25	(192.5)
2. Construction of Buildings (69m x 21m)	108	(832)
Total	158	(1,217)

Notes: Assumptions for the above cost estimate are as follows.

1. A rough estimate based on the concept shown in Table IV-6-3 (machines and equipment) and Figure IV-6-2 (layout).
2. Estimate as of November, 1990.
3. The costs of machines and equipment above are calculated on the basis of ex-factory prices of major machines and equipment, adding packing, transportation and other costs up to the construction site. Installation is assumed to be undertaken by the Philippine side. The necessity of power-receiving facilities should be studied carefully prior to the implementation.
4. The land for the project is assumed to be owned by the government, and costs of land acquisition and site preparation are not included in the above estimate, presuming the site is ready for construction.
5. Cost for the construction of buildings may be reduced to around 50 to 60 million yens, if an imported prefabricated unit is used.
6. Import tax is not included.
7. Foreign exchange rates used are;
 1 peso=4.82 yens, 1 US dollar=27 pesos, 1 US dollar=130 yens

Table IV-6-5: JIS for Adhesives

	Property	Method of Use	Efficiency
Polyvinyl Acetate Resin	- White emulsion	- Use as it	- Durability: medium
For:	- Water soluble	- Room temperature cure:	- Flexibility: medium
- General Woodworking	- Resin content 40-60%	6-15 hours	- Water/heat resistance: small
		- Hardness & durability can be improved by mixing with urea resin.	- Easy to use
Urea Resin	- White or transparent liquid	- Use with hardening agent (ammonium chloride) and extender wheat flour	- Durability: medium
For:	- Water soluble	- Heat hardening (90-120 deg.C): a few minutes	- Flexibility: small
- General Woodworking	- Resin content 60-70%		- Water/heat resistance: medium
- Plywood	- Possibility of melamine or phenol modification		- Excessively hard and damage cutters
- Particle Board			- Formaline: small
Phenol Resin	- Red brown liquid	- Use with filler (powdered, walnut or coconut)	- Durability: large
For:	- Water soluble	- Heat hardening (120-140 deg.C): a few minutes	- Water/heat resistance: large
- High Water Resistant Plywood	- Resin content 50-60%		- Flexibility: small
- Water Resistant Board	- Alcohol soluble, some are solid at normal temperature		- Adhesion layer is colored in black brown.

Fig. IV-6-1: Problems for the Wooden Furniture Industry and the Development Plan

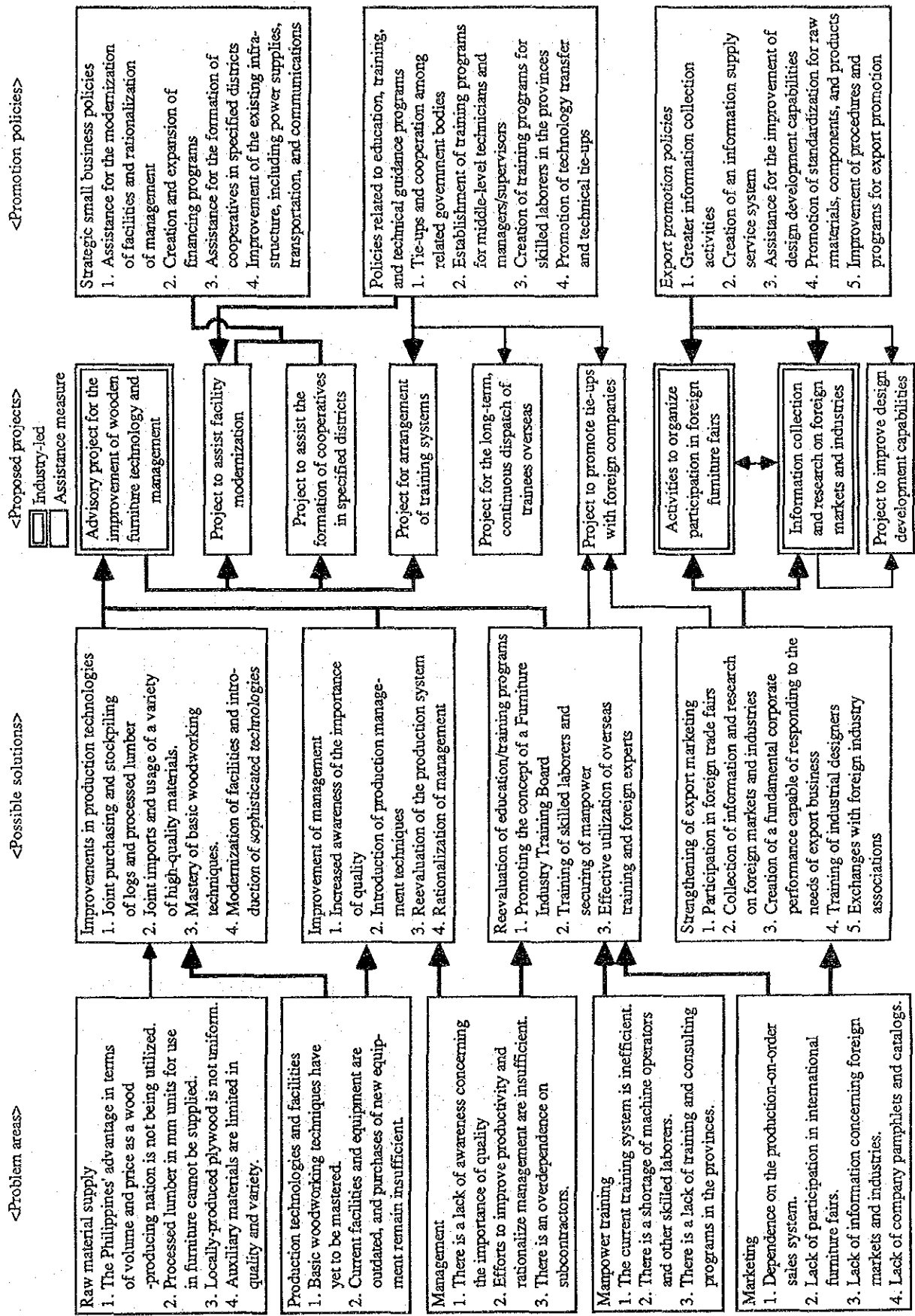
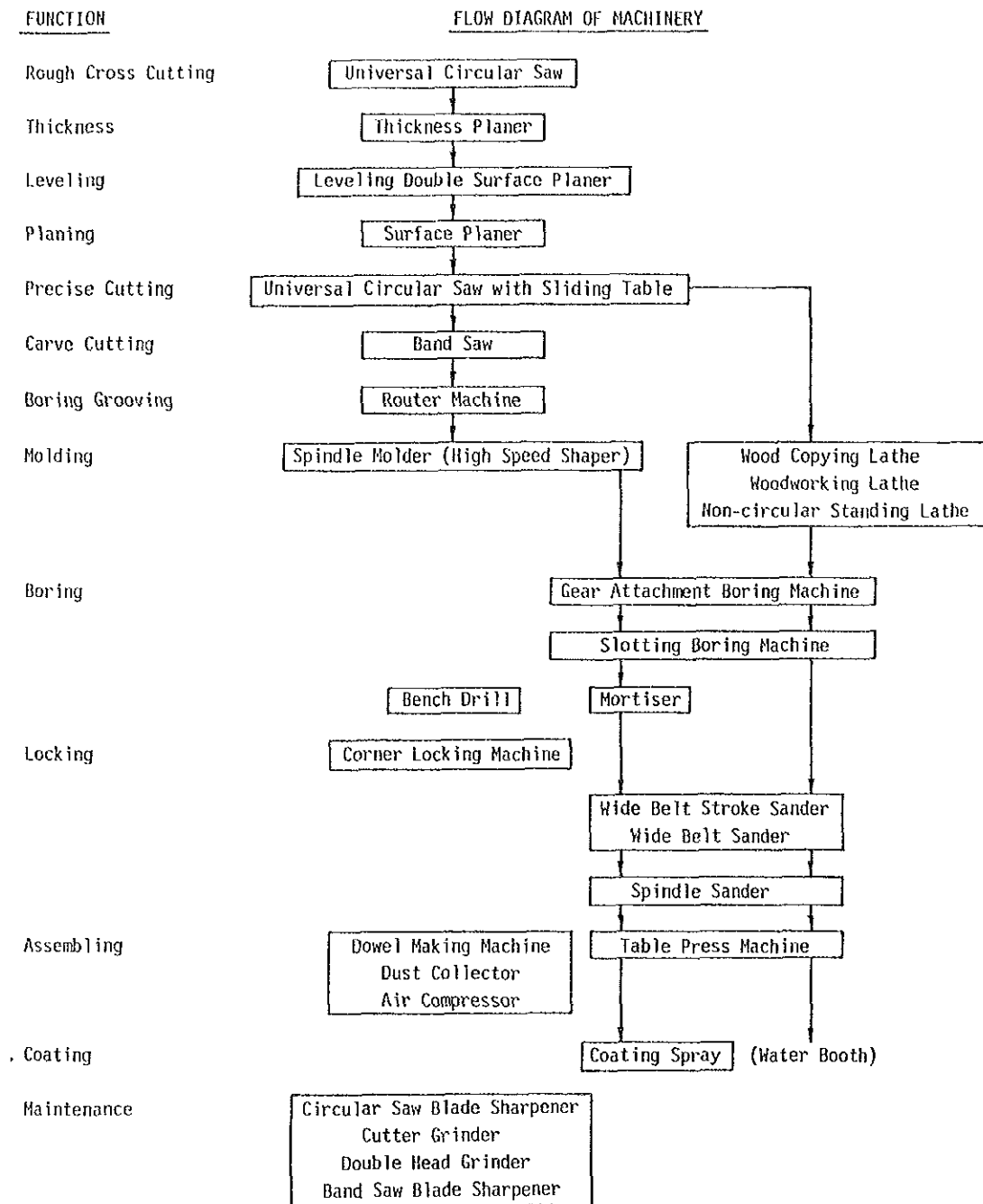


Fig. IV-6-2: Flow Diagram of Machinery and Equipment for Local Training Centers



ANNEX

ANNEX

IV-1. Summary of Survey on the Intentions of Japanese Furniture Manufacturers

(1) Outline

1) Survey objectives

The survey aims to examine imports of Philippine-made wooden furniture and the evaluation of these products by the Japanese furniture industry. In addition, problems involved in increasing exports of these products to Japan will be explored.

The survey will also investigate the opinions of Japanese firms concerning possible investment in the Philippines, examine industrial exchanges between Japan and the Philippines, and explore future directions for economic and technological cooperation between the two nations.

2) Firms surveyed

With the cooperation of the International Development Association of the Furniture Industry of Japan (IDAFIJ), we sampled 104 wooden furniture manufacturers selected from the association's list of member and non-member firms. Contact was made through introductions from the association and followed by confirmation through telephone.

3) Survey methodology

Questionnaires were mailed and additional inquiries made by telephone.

In compiling a report on the survey, interviews were conducted with some of the responding firms together with industrial organizations, furniture designers and other industry experts.

4) Period of survey

Questionnaires:	June 15 - June 30, 1990
Interviews:	July 24 - July 31, 1990

(2) Responses

Of 104 questionnaires mailed, 30 replies (29 percent of the total) were received.

(3) Profile of Responding Firms

1) Number of employees

See Fig. A IV-1-1.

2) Year of establishment

See Fig. A IV-1-2.

3) Capital

See Fig. A IV-1-3.

4) Main products handled

The most common products were legged furniture and box type, noted by 14 firms (46.7 percent) and 11 firms (36.7 percent), respectively. These figures include 11 manufacturers handling furniture in general (36.7 percent). (See Fig. A IV-1-4.)

Small and medium-sized enterprises with sales of ¥1 billion to ¥5 billion were the most common (12 firms, or 40.0 percent). Firms with sales of more than ¥5 billion, mainly large corporations, accounted for 40 percent of the total, while those with less than ¥10 billion numbered seven (23.3 percent) and those with more than ¥10 billion, five (16.7 percent). There were no firms with sales of less than ¥500 million. (See Fig. A IV-1-5.)

(4) Summary of Domestic Survey

"Don't know" and "No response" accounted for an overwhelming majority of responses by Japanese firms to questions concerning the evaluation of and interest in Philippine wooden furniture. On the basis of the interviews, therefore, the appraisal of the Japanese firms was summarized as follows. Although the evaluations included some opinions which appeared to be contrary to the facts due to misunderstandings or a lack of sufficient knowledge, they were recorded as-is without any additional comment by the study team.

1) Product recognition

1. Although the image of rattan furniture has taken root, some in the industry were not even aware of the existence of wooden furniture manufacturers in the Philippines.
2. The Philippines specializes in labor-intensive production of hand-carved wooden furniture. Few Philippine manufacturers can cope with Japanese market demand which shows relative preference for products of simple design. The rough finish of Philippine products is also unacceptable in the Japanese market.
3. The Philippines cannot meet the demand for sophisticated processing because most companies use general-purpose facilities and equipment.

2) Evaluation of the Philippines as a production base

1. Ways of thinking in terms of differ. In Japan, for example, companies use as few nails as possible for joining, instead improving the precision of the pieces to be joined. In the Philippines, however, nails are frequently used for all joints.
2. The background for the production of auxiliary materials such as metal fittings and cushions can be said to be insufficient.
3. Both a spirit of self-advancement in its workers and an environment conducive to the handing down of technology is not so encouraging.
4. There are various negative elements in the social and business environments, including an unstable political situation, a peace and order, and an unreliable power supply.

3) Competing nations

As the questionnaire results show, a system designed to produce wooden furniture for the Japanese market is being enhanced in Thailand and Indonesia, where

Japanese firms are eager to invest, and Malaysia, which is close to Singapore and whose investment environment has been improved.

4) Exchanges between Japan and the Philippines

The exchange of information, etc. between the wooden furniture industries in Japan and the Philippines is insufficient. As a result, even industry experts at Japanese manufacturers and importers expressed little interest in Philippine products and had little information about these products.

On the Philippine side as well, study of the Japanese market by local manufacturers is insufficient, and they lack opportunities for studying the essential demands of Japanese consumers in the areas of quality, design and color.

From the standpoint of Japanese firms, an ideal system for exchange between Japan and the Philippines would be as follows:

1. Exchange of information: Mainly through industrial organizations, JETRO and individual companies.
2. Acceptance of trainees: Through the government and JICA. Larger corporations, however, are willing to develop out their own trainee programs.
3. Dispatch of experts and guidance: Many firms believe this to be the responsibility of the government, JICA, JETRO and other public organs.
4. Technological and business tie-ups/joint ventures: Firms strongly feel that this should be left to the enterprises concerned.

Problems with which Japanese furniture manufacturers are facing can be summarized as follows:

Irrespective of their size, firms indicated "response to market needs" as the most common problem. This includes small-lot, large-variety production, product assortment, delivery time, inventory control and coordination.

Next was "labor shortage and the lack of successors," which have become especially serious for large corporations employing 300 or more people.

Among larger businesses, many are faced with the problem of "the difficulty of steady procurement/stably supply of raw materials." This can be regarded as reflecting the fact that bigger firms depend more on overseas production and imports.

Among medium-sized firms, many were confronting primarily with the problem of "response to market needs" and secondly with "marketing." This reflects the fact that medium-sized enterprises are less able than bigger firms to effectively utilize sales channels and develop delivery and after-sales service systems.

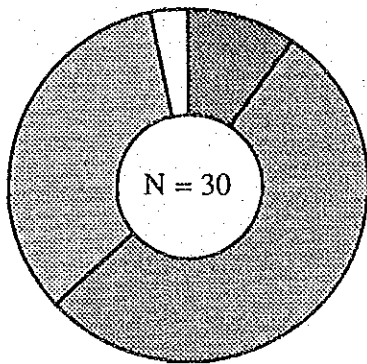
Finally, the following three points will be important in determining the future production of wooden furniture in the Philippines by Japanese manufacturers:

1. Rather than mass-producing homogeneous low-grade products to be lumped together with other "Southeast Asian products," products incorporating unique and identified Philippine technologies differentiating them from goods in other regions (for instance, manual wood carving) should be developed.
2. Plants should be built in or relocated to industrial estates having a thorough foundation in terms of supporting industries, such as a supply route for metal fittings and other auxiliary raw materials.

3. The Philippines should become a production base for international businesses which aim not only the domestic market in Japan, but also are exploring products which can be mass-produced in specific areas of the global market for worldwide sales. Possibilities for investment in the Philippines by Japanese manufacturers or trading firms in this form should be studied.

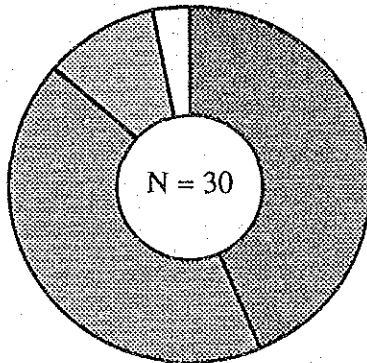
Concerning the possibility of transferring current production bases to the Philippines, the availability of alternatives such as Thailand, Indonesia and Malaysia make it rather difficult to recommend the Philippines specifically. From a long-term viewpoint, however, the Philippines appears worthy as a production base for the global market, because its people speak English and the country continues to maintain a European sensibility and heritage (especially that of Spain), in many ways. Furthermore, European designers are now flowing out and shifting for new frontiers (this was confirmed by several experts).

Fig. A IV-1-1: Profile of Responding Firms (Number of Employees)



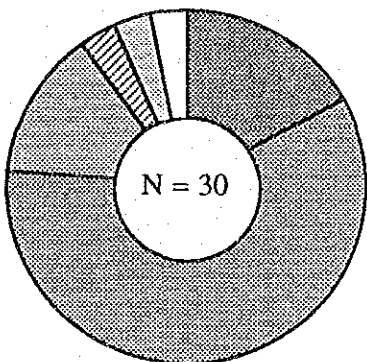
Breakdown	No. of firms	Share of total
Total	30	100.0
~49 persons	3	10.0
50~299 persons	16	53.3
300 persons or more	10	33.3
No response	1	3.3

Fig. A IV-1-2: Profile of Responding Firms (Year of Establishment)



Breakdown	No. of firms	Share of total
Total	30	100.0
~1945	13	43.3
~1965	13	43.3
~1985	3	10.0
1986~	0	0.0
No response	1	3.3

Fig. A IV-1-3: Profile of Responding Firms (Capital)



Breakdown	No. of firms	Share of total
Total	30	100.0
~less than ¥10 million	5	16.7
~less than ¥100 million	18	60.0
~less than ¥500 million	4	13.3
~less than ¥1 billion	1	3.3
¥1 billion or more	1	3.3
No response	1	3.3

Fig. A IV-1-4: Profile of Responding Firms (Main Products Handled)

	Total	~49 persons	50~299 persons	300 persons or more
Number of firms	30	3	16	10
Legged	14 (46.7)	1 (33.3)	11 (68.8)	2 (20.0)
Box type	11 (36.7)	1 (33.3)	7 (43.8)	3 (30.0)
Beds	1 (3.3)	—	—	1 (10.0)
Parts & components	1 (3.3)	—	1 (6.3)	—
Other furniture	4 (13.3)	—	3 (18.8)	1 (10.0)
Rattan	1 (3.3)	—	1 (6.3)	—
Furniture in general	11 (36.7)	1 (33.3)	4 (25.0)	6 (60.0)
Non-furniture products	2 (6.7)	—	1 (6.3)	1 (10.0)
No response	2 (6.7)	—	—	1 (10.0)

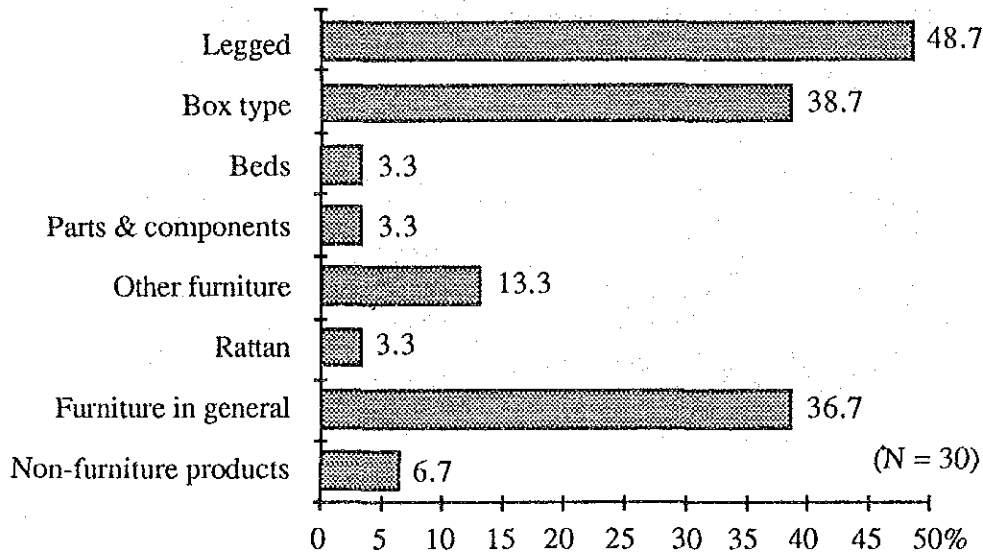
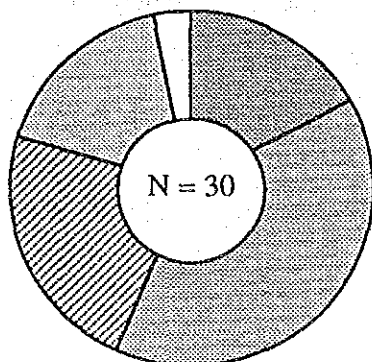


Fig. A IV-1-5: Profile of Responding Firms (Total Annual Sales)

	Total	~49 persons	50~299 persons	300 persons or more
Number of firms	30	3	16	10
~¥500 million	—	—	—	—
~¥1 billion	5 (16.7)	2 (66.7)	3 (18.8)	—
~¥5 billion	12 (40.0)	1 (33.3)	10 (67.5)	1 (10.0)
~¥10 billion	7 (23.3)	—	3 (18.8)	4 (40.0)
More than ¥10 billion	5 (16.7)	—	—	5 (50.0)
No response	1 (3.3)	—	—	—
Average value	11,378.7	966.7	3,384.4	27,293.2
Real number total	329,983	2,900	54,151	272,932



Breakdown	No. of firms	Share of total
Total	30	100.0
~less than ¥500 million	0	0
~less than ¥1 billion	5	16.7
~less than ¥5 billion	12	40.0
~less than ¥10 billion	7	23.3
More than ¥10 billion	5	16.7
No response	1	3.3

IV-2. Summary of Questionnaire Survey of Wooden Furniture Manufacturers in the Philippines

A questionnaire survey of wooden furniture manufacturers in the Philippines was carried out between May and July 1990 to obtain an understanding of the actual situation and future needs of the industry.

(1) Information Covered by the Survey

- Profile of firms
- Production
- Production facilities
- Plant and equipment investment and fund raising
- Quality control and maintenance
- Education and training
- Export marketing
- Assistance from government agencies and industrial organizations
- Approaches to the Japanese market
- Expectations of the Japanese government and Japanese private enterprise

(2) Survey Method

The questionnaire survey was carried out on assignment by CFIP, the industrial organization of the Philippine furniture industry. CFIP drew up a list of major firms, explained the purpose of the questionnaire survey to the firms and asked for their cooperation. The questionnaires were sent to 350 firms, 226 of which responded.

The regional distribution of the respondent firms is as follows:

Bulacan	10
Metro Manila	114
Pampanga	51
Cebu	51

Overall analysis and comparative group analysis

An overall analysis and a comparative group analysis were conducted based on 104 of the 226 respondent firms. The 104 selected firms are engaged mainly in the manufacture and sale of wooden furniture. The standards on which the grouping was based and the number of firms included in each group are as follows:

Group	Standards	Number of firms	
A1	Total number of employees	200~	6
	Ratio of exports (%)	80~	
A2	Total number of employees	100~200	21
	Ratio of exports (%)	50~80	
A3	Total number of employees	~100	9
	Ratio of exports (%)	50~80	
A4	Total number of employees	~100	68
	Ratio of exports (%)	~50	

1. Year of establishment

The number of firms engaged in the production of wooden furniture has increased since the middle of the 1970s. All of the firms in Group A1 were founded in the 1970s or later. Many of the firms in Group A3 were established before 1970.

2. Raw materials

In general, an overwhelmingly large quantity of tangile is used. Narra and lauan are also used often. Many firms in the A3 and A4 groups use narra.

3. Main products and monthly production

The main products manufactured are chairs and tables, with 95 percent of all of the 104 firms engaged in their production. Cabinets and beds are the next most common items. Most of the smaller products are produced by firms in the A4 and A3 groups. Half of the A2 group firms are producing doors, panels and casements. While the majority of the A2, A3 and A4 firms produce chairs and tables at a monthly rate of no more than 300 units, all of the firms in the A1 group produce more than 1,000 units a month.

4. Purchase of sub materials

The ratio of domestically-produced plywood used is high in all of the groups. As for adhesives, paints and metal fittings, the ratio of domestically-purchased products used is high among A2, A3 and A4 group firms as well. According to interviews with major firms, however, purchases are made from wholesalers and retailers dealing in imported products, indicating that the materials purchased are actually imports. An overwhelming majority of the firms cite quality as the reason for using imports. More than 80 percent of the A1 and A2 group firms gave this response.

5. Maintenance and repair of machinery

In the A1 and A2 groups, engineers or other staff members are responsible for maintenance and repair of machinery. In the A1 firms, it is mostly engineers who are responsible for this work and in the A2 firms it is done mainly by specialized staff members. In the A3 firms, the owners do the work themselves or they depend on machinery makers. All of the A1 firms have dedicated maintenance facilities. However, only half of the A2 firms have such facilities and the majority of A3 and A4 firms do not have them.

6. Quality control

Almost all of the firms implement quality control drives. According to interviews with major firms, however, the A3 and A4 group firms usually rely only on quality checks by supervisors or skilled workers. A1 group firms use memos or notes to report these results to general managers or section managers. However, a majority of the A2 firms and almost all of the A3 and A4 firms report them orally.

7. Training in quality control

Almost all of the firms in the A1 and A2 groups carry out in-house training on quality control (including quality checks). A majority of the firms in these groups utilize outside training as well. Among the A3 and A4 group firms, no less than 60 percent carry out in-house training on quality control (including quality checks). However, a majority do not utilize outside training.

Regarding outside training, programs offered by private organizations are often utilized by A1 group firms. Programs offered by official organs are frequently used by A2 group firms. More than half of the A4 group firms reported that their outside training

is limited to the dispatch of a few employees to programs offered by official organizations..

8. Plant and equipment investments

Three-quarters of all respondent firms have made plant and equipment investments in the past three years. Firms in the A1 and A2 groups have a particularly strong willingness to invest with A1 group firms investing in land and offices as well as in equipment. Regarding other facilities, investment is generally large in the area of dry kilns. Classified by group, investment in water booths and dry booths is noticeable among the A1 group firms, while investment in dust collection equipment (portable) stands out among the A2 firms.

9. Fund-raising

More than half of the respondent firms obtain bank loans. Classified by group, official funds are frequently utilized by A2 group firms, while A4 group firms often depend on operating profits or loans from relatives.

10. Problems with fund-raising

About three-quarters of the firms cite "high interest rates" as a major problem in fund-raising. In addition, more than half of the A1 group firms point to "short repayment terms," and more than half of the A2 group firms complain about "the burden of mortgages."

11. Training to be required

The majority of the firms need training in basic woodworking technology. More than half of the A4 group firms require training in finishing. With the exception of A1 group firms, few companies feel a strong necessity for training in quality control.

12. Major export markets

The majority of the firms — more than two-thirds in the A1, A2 and A3 groups — ship their products to the United States. The second largest export markets for each group are Europe, Japan, and Australia.

13. Export opportunities

The export opportunities most commonly cited by the firms were participation in trade fairs or missions and inquiries from importers. Visits to showrooms were more commonly cited than inquiry services offered by government agencies.

14. Claims from importers

About half of the A1, A2 and A3 group firms have received claims from importers. As far as the present survey is concerned, relatively few enterprises in the A4 group said they had "received claims." However, because there were many "non-respondent" firms in this group, it is quite possible that more than half of the exporting firms in this group have received claims from importers. As for the details of the claims, complaints regarding cracking and delivery time were numerous, while those regarding twisting and packaging were also common in the A2 and A4 groups.

15. Enthusiasm for exporting in the future and measures for export promotion

More than 80 percent of the respondent firms showed enthusiasm to expand exports in the future. However, more than 30 percent of them had not prepared either brochures to introduce themselves or photographs of their products. Regarding measures for export promotion, a strong tendency to ask the government for technological and financial assistance was observed in the A1 group. However, the A2 group firms emphasized self-help efforts to improve quality and reduce production costs. In the A3 and A4 group firms, many of them emphasized improvement of product quality, improvement of designs and collection of information on overseas market.

16. External conditions for export promotion

Regarding institutional aspects of export promotion, about 60 percent of the respondent firms cited improvement of the financing system. With respect to industrial policy, 70 percent of the firms asked for improvement of the raw material supply system, followed by guidance or training in the improvement of production technology. Classified by group, many firms in the A3 and A4 groups asked for marketing-related training. Regarding export promotion policy, there was a strong demand overall for the holding of trade fairs and the gathering of information on overseas markets and products. In the A1 and A2 groups, many firms considered the dispatch of trade missions as important as the other activities stated above.

17. Participation in CFIP

Forty-one percent of the respondents are participants in CFIP. Most of the A1 and A2 group firms are participants. However, more than half of the A3 group and no less than 70 percent of the A4 group do not participate in CFIP.

18. Expectations of CFIP

Many firms placed expectations on CFIP for industrial leadership and the strengthening of cooperative relations with the government. More than half of the firms expected CFIP to gather information on technology and marketing. Classified by group, the A2 group firms were strongly interested in technological information while the A3 and A4 group firms displayed strong interest in marketing information.

19. Approaches to the Japanese Market

More than 60 percent of the A1, A2 and A3 group firms are currently exporting to or have exported to Japan in the past, while more than 60 percent of the A4 firms have never exported to Japan. Those firms who have no experience in exporting to Japan complain that the quality requirements are too rigid, that preferred designs and colors are different and that profit margins are low.

20. Expectations of the Japanese government and Japanese private enterprise

More than half of the respondent firms are interested in technological tie-ups with Japanese enterprises. Many firms place expectations on the Japanese government for assistance in the technological upgrading of facilities and financial assistance for education, training and seminars.

Table A IV-2-1: Number of Companies by Year of Establishment

(Unit: no. of companies)

Year of Establishment	Group:	A1	A2	A3	A4	Total
- 1950		0	2	1	0	3
1951 - 1960		0	1	1	1	3
1961 - 1970		0	4	4	7	15
1971 - 1975		2	3	0	11	16
1976 - 1980		1	6	0	18	25
1981 - 1985		2	3	1	17	23
1986 -		1	2	2	14	19
No. of Response		6	21	9	68	104

Table A IV-2-2: Materials Mainly Used

(Unit: no. of companies)

Name of Materials	Group:	A1	A2	A3	A4	Total
1. Tangile		5	18	8	60	91
2. Yellow Iauan		-	6	1	2	9
3. Red Iauan		4	12	-	17	33
4. White Iauan		3	9	-	12	24
5. Matoi		-	-	-	-	-
6. Light red Philippine Mahogany		3	8	3	12	26
7. Ebony		1	1	2	-	4
8. Philippine chestnut		-	-	-	-	-
9. Oak		-	2	1	-	3
10. Tambulian		-	-	-	-	-
11. Other		2	15	8	52	77
Of which:						
Narra		-	7	6	36	49

Table A IV-2-3: Major Products and Monthly Production (1)

(Unit: no. of companies)

Group: Product Items & Monthly Production (pieces)	A1	A2	A3	A4	Total
Chairs & Tables	5	20	9	65	99
- 100	-	5	5	29	39
101 - 300	-	6	-	8	14
301 - 500	-	3	-	2	5
501 - 1,000	-	2	1	3	6
1,001 - 3,000	2	2	-	1	5
3,001 - 5,000	1	-	1	-	2
5,001 - 10,000	-	1	-	-	1
10,001 - 30,000	2	-	-	-	2
30,001 - 50,000	-	-	-	-	-
50,001 -	-	-	1	-	1
No answer for volume	-	1	1	22	24
Cabinets	3	17	9	55	84
- 100	2	9	6	41	58
101 - 300	1	3	-	1	5
301 - 500	-	1	-	2	3
501 - 1,000	-	1	-	-	1
1,001 - 3,000	-	-	-	-	0
3,001 - 5,000	-	-	-	-	0
5,001 - 10,000	-	-	-	-	0
10,001 - 30,000	-	1	1	-	2
30,001 - 50,000	-	-	-	-	0
50,001 -	-	-	-	-	0
No answer for volume	-	2	2	11	15
Beddings	3	9	6	50	68
- 100	1	6	4	39	50
101 - 300	-	1	-	1	2
301 - 500	-	-	-	1	1
501 - 1,000	-	-	-	-	0
1,001 - 3,000	1	-	-	-	1
3,001 - 5,000	1	-	-	-	1
5,001 - 10,000	-	-	-	-	0
10,001 - 30,000	-	-	1	-	1
30,001 - 50,000	-	-	-	-	0
50,001 -	-	-	-	-	0
No answer for volume	-	2	1	9	12

Table A IV-2-3: Major Products and Monthly Production (2)

(Unit: no. of companies)

Product Items & Monthly Production (pieces)	Group:	A1	A2	A3	A4	Total
Small Articles						
incl. Wagons		2	6	4	36	48
- 100		1	2	1	23	27
101 - 300		1	2	1	2	6
301 - 500		-	-	-	1	1
501 - 1,000		-	-	-	3	3
1,001 - 3,000		-	-	-	-	-
3,001 - 5,000		-	-	-	-	-
5,001 - 10,000		-	-	-	-	-
10,001 - 30,000		-	-	-	-	-
30,001 - 50,000		-	1	1	-	2
50,001 -		-	1	-	-	1
No answer for volume		-	-	1	7	8
Doors, Casements & Panels						
- 100		-	10	3	33	46
101 - 300		-	3	1	24	28
301 - 500		-	3	1	2	6
501 - 1,000		-	-	-	-	-
1,001 - 3,000		-	1	-	-	1
3,001 - 5,000		-	-	-	-	-
5,001 - 10,000		-	-	-	-	-
10,001 - 30,000		-	-	1	-	1
30,001 - 50,000		-	-	-	-	-
50,001 -		-	-	-	-	-
No answer for volume		-	2	-	7	9

Table A IV-2-4: Procurement Rate of Subsidiary Materials

(Unit: no. of companies)

Subsidiary Materials	Group: P.Rate (%)	A1	A2	A3	A4	Total
1. Plywood	0	-	-	-	-	-
	1 - 20	-	-	-	2	2
	21 - 40	-	2	-	-	2
	41 - 60	-	-	-	-	-
	61 - 80	1	-	1	-	2
	81 - 99	-	1	1	-	2
	100	5	17	7	60	89
2. Surface-treated sheets	0	1	1	-	-	2
	1 - 20	-	1	-	-	1
	21 - 40	-	-	-	-	-
	41 - 60	-	-	-	-	-
	61 - 80	-	-	-	-	-
	81 - 99	-	1	-	-	1
	100	2	4	3	6	15
3. Other raw materials	0	-	1	-	-	1
	1 - 20	-	1	-	2	3
	21 - 40	-	-	-	-	0
	41 - 60	-	2	-	-	2
	61 - 80	-	-	1	-	1
	81 - 99	-	-	-	-	-
	100	2	5	5	38	50
4. Adhesives	0	1	1	-	1	3
	1 - 20	2	3	-	2	7
	21 - 40	-	-	-	-	-
	41 - 60	-	1	-	1	2
	61 - 80	-	-	1	1	2
	81 - 99	-	-	1	-	1
	100	2	14	7	54	77
5. Coating materials	0	2	-	-	1	3
	1 - 20	1	2	-	-	3
	21 - 40	-	-	-	-	-
	41 - 60	-	1	-	1	2
	61 - 80	-	2	1	-	3
	81 - 99	-	1	-	-	1
	100	3	11	7	53	74
6. Metal fittings	0	2	1	-	1	4
	1 - 20	-	2	-	6	8
	21 - 40	-	-	-	-	-
	41 - 60	1	2	-	1	4
	61 - 80	-	-	-	-	-
	81 - 99	-	1	1	1	3
	100	2	10	7	44	63

Table A IV-2-5: Procurement Sources of Subsidiary Materials

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Procurement Sources					
1. Retailers	1	15	6	38	60
2. Lumber suppliers	3	13	2	43	61
3. Wholesalers	5	11	5	41	62
4. Forest stations	-	3	-	2	5
5. Importers	1	13	1	20	35

Table A IV-2-6: Reasons to Use Imported Subsidiary Materials

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Reasons					
1. Stable supply	4	5	1	14	24
2. Supply volume	1	4	-	5	10
3. Price	3	4	-	8	15
4. Quality	6	17	6	38	67
5. Variety	1	8	2	10	21
6. Other	2	9	2	23	36
Of which:					
Customer's specification	1	2	-	13	16
Specification	1	1	-	-	2
Not available locally	-	1	1	3	5

Table A IV-2-7: Who Is Responsible for the Maintenance and Repair of Machinery and Facilities?

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Persons In Charge of Maintenance/Repair of Machinery/Facilities					
In-house engineers	4	6	1	5	16
In-house specialists for maintenance/repair	2	14	1	36	53
Manufacturers of machinery/facilities	-	3	5	17	25
Other	1	1	3	16	21
Of which:					
Owner/own maintenance	-	-	2	9	11
Distributor/supplier	-	1	-	3	4
Maintenance and repair are not performed	-	-	-	-	-
Have a maintenance room for machines/equipment?					
Yes	6	12	3	31	52
No	-	9	5	36	50

Table A IV-2-8: Methods of Quality Control

(Unit: no. of companies)

Methods	Group:	A1	A2	A3	A4	Total
Carry out campaigns/activities	Yes	6	21	8	59	94
	No	-	-	1	9	10
Carry out a numerical check of raw materials and semi-finished goods every time	Yes	6	19	8	61	94
	No	-	2	1	5	8
Carry out a sampling check of semi-finished goods every time	Yes	6	19	9	65	99
	No	-	2	-	1	3
Carry out a finishing check every time	Yes	6	20	9	64	99
	No	-	1	-	3	4
Reported from skillful workers to factory managers/directors	Yes	6	20	8	59	93
	No	-	1	1	8	10
Reported orally		3	15	8	54	80
Reported in the form of memos/documents		6	11	2	14	33
Other		-	-	1	1	2

Table A IV-2-9: Training for Quality Control

(Unit: no. of companies)

Methods	Group:	A1	A2	A3	A4	Total
Carry out in-house training for quality control	Yes	6	20	6	43	75
	No	-	1	3	24	28
Participated in outside training programs for quality control (workers)	Yes	4	12	2	31	49
	No	2	9	7	36	54
Participated in training programs of:						
Public institutions		1	7	1	18	27
(No. of participants/No. of companies)		(3/1)	(12/1)	(3/1)	(4/1)	
			(5/1)		(3/8)	
			(3/1)		(2/4)	
			(2/3)		(1/5)	
			(1/1)			
Private institutions		3	8	1	7	19
(No. of participants/No. of companies)		(5/1)	(21/1)	(20/1)	(9/1)	
		(2/1)	(12/1)		(4/1)	
			(7/1)		(3/3)	
			(5/1)		(2/1)	
			(3/1)		(1/1)	
			(2/1)			
			(1/1)			
Affiliated companies		-	-	-	1	1
(No. of participants/No. of companies)					(4/1)	
Overseas companies		-	1	1	-	2
(No. of participants/No. of companies)			(4/1)	(30/1)		
Other (PTTC, CFIP, Association and others)		2	2	-	4	8
		(3/1)	(10/1)		(4/1)	
			(1/1)		(2/2)	

Table A IV-2-10: Investment on Production Facilities for Wooden Furniture over the Past Three Years

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Invested in production facilities?					
Yes	6	18	7	48	79
No	-	3	2	18	23
No response	-	-	-	2	2
Invested in:					
Land and offices	6	8	3	16	33
Machinery	5	17	6	43	71
Other facilities	5	10	4	14	33
Dry kiln	3	6	2	5	16
Water booth, dry booth	4	3	1	2	10
Dust collection equipment	1	6	-	9	16
Others	1	4	2	4	11

Table A IV-2-11: Main Sources of Fund Raising

(Unit: no. of companies)

Source of Fund	Group:	A1	A2	A3	A4	Total
Banks		3	14	3	34	54
Official funds		1	6	-	4	11
Non-bank financing companies		-	4	1	2	7
Cooperatives		-	1	-	1	2
Relatives and friends		-	3	-	16	19
Others		3	3	5	38	49
of which:						
Flow-back earning		1	2	2	24	29
Equity		1	1	2	8	12
Add equity		-	-	-	1	1
Mother Co.'s Equity		1	-	-	-	1
Other		-	-	1	5	6

Table A IV-2-12: Main Problems in Raising Funds

(Unit: no. of companies)

Problems	Group:	A1	A2	A3	A4	Total
High interest rates		4	18	6	48	76
Short repayment periods		3	7	2	21	33
Harsh collateral requirements		1	12	3	20	36
Numerous borrowing conditions		1	6	1	14	22
Complex borrowing procedures at banks		1	10	3	10	24
Limitation on lending limit		1	6	2	11	20

Table A IV-2-13: Required Trainings (Kinds/Areas)

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Technical training	-	8	1	14	23
Carpentry	-	-	1	10	11
Finishing	1	5	2	37	45
Varnishing	-	1	1	2	4
Quality control	2	2	-	4	8
Supervisory	1	3	-	6	10
Design	-	-	-	3	3
Machine maintenance	1	1	1	3	6
Machine operation	1	-	-	1	2

Table A IV-2-14: Major Importing Countries/Regions for Your Products

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Importing Countries					
U.S.A.	5	14	6	25	50
Canada	1	6	1	9	17
Europe	3	8	4	15	30
ASEAN Countries	-	3	2	2	7
Australia	2	11	2	11	26
New Zealand	-	-	-	2	2
Japan	2	8	3	16	29
Others	2	1	3	9	15
Of which:					
Spain	-	-	-	1	1
Singapore	-	-	1	2	3
Malaysia	-	-	-	1	1
Thailand	-	-	-	1	1
S.Korea	-	-	1	1	2
Taiwan	-	-	1	3	4
Hong Kong	2	-	-	2	4
China	-	-	-	1	1
Saudi Arabia	-	1	-	1	2
Lybia	-	-	1	-	1
Lebanon	-	-	-	1	1

Table A IV-2-15: How to Start Exporting

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Inquiry from importers	3	10	2	11	26
Government inquiry service	1	4	-	5	10
Participation in trade fairs/missions	3	8	3	16	30
Other	2	10	3	21	36
Of which:					
Direct contact/direct customers	2	4	1	10	17
Friends/relatives	-	1	2	1	4

Table A IV-2-16: Claims from Importers

(Unit: no. of companies)

	A1	A2	A3	A4	Total
Received claims from importers					
Yes	3	9	4	14	30
No	3	8	3	22	36
No response	-	4	2	32	38
Claims on:					
Twist	-	4	-	4	8
Cracking	2	5	3	6	16
Worm-eaten	-	-	-	-	-
Delivery time	2	1	3	7	13
Packaging	1	3	-	4	8
Different from samples	-	1	-	2	3
Shortage of quantity	-	-	-	1	1

**Table A IV-2-17: Intention to Expand Exports in the Future
and Export Promotion Methods**

(Unit: no. of companies)

Group:		A1	A2	A3	A4	Total
Expand exports in the future	Yes	6	18	6	55	85
	No	-	-	-	2	2
	No response	-	3	3	11	17
Methods for export promotion:						
	Improvement of product quality	3	17	6	57	83
	Improvement of designs	2	13	5	52	72
	Reduction of production cost	3	17	4	45	69
	Collection of information on overseas markets	1	15	6	50	72
	Technical assistance by the Government	4	14	3	41	62
	Financial assistance by the Government	4	12	2	41	59
Have brochures or pictures for export use	Yes	4	13	5	40	62
	No	1	8	3	20	32
	No response	1	-	1	8	10

Table A IV-2-18: Required Conditions to Promote Export

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Institutions					
Reduction of import duties	2	8	1	12	23
Reduction of manufacturing/ sales-related taxes	1	7	3	20	31
Greater availability of financing	3	13	4	41	61
Adoption of bonded factory systems	-	3	-	9	12
Industrial Policies					
Improvement in material supply system	3	13	5	52	73
Establishment of industrial parks	-	1	3	4	8
Research on manufacturing technology	2	8	3	25	38
Research on marketing/management	-	3	2	14	19
Establishment of employee training systems	-	7	3	18	28
Technical guidance and training	2	7	1	22	32
Holding of seminars	-	4	3	12	19
Establishment of model factory lines	-	4	2	9	15
Technical guidance and training by foreign experts	1	7	2	16	26
Design-related training	1	5	4	16	26
Marketing-related training	1	5	5	22	33
Export Policies					
Collection of overseas product/market information	2	9	6	23	40
Holding of exhibition	1	10	6	27	44
Dispatch of export promotion missions	2	7	2	7	18

Table A IV-2-19: Number of CFIP Member Companies

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
No. of Response	6	21	9	68	104
Of which: CFIP Member	5	16	4	18	43

Table A IV-2-20: Expectation to CFIP

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Greater leadership in industry	3	17	6	48	74
Stronger tie-ups with the Government organizations	4	10	3	40	57
Stronger tie-ups with peripheral industries	1	4	4	21	30
International exchange	2	7	4	21	34
Collection of marketing information	3	11	6	42	62
Collection of technical information	2	17	3	33	55

Table A IV-2-21: Export to Japan

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Exported to Japan					
Yes	4	13	6	18	41
No	2	8	3	42	55
No response	-	-	-	8	8
Reasons for no export to Japan:					
Tough quality requirement	-	3	-	5	8
Different preference in design, size, and color	1	2	-	3	6
Fast delivery	-	1	-	2	3
Volume of orders received	-	1	-	2	3
Lower profitability	-	2	-	3	5
Other	1	3	1	31	36
Of which:					
No export yet	-	-	2	17	19
No market yet	-	-	-	9	9
No inquiry/no offer	1	1	-	5	7
Lack of exposure	-	1	1	2	4
No export capacity	-	-	-	1	1
Lack of materials	-	1	-	-	1

Table A IV-2-22: Expectation to the Japanese Government and Private Companies

(Unit: no. of companies)

Group:	A1	A2	A3	A4	Total
Technical tie-ups	1	14	4	39	58
Joint investment	1	7	3	25	36
License production under OEM contracts	1	5	1	14	21
Personnel assistance for education, training, and seminars	2	5	2	26	35
Financial assistance for education, training, and seminars	3	9	5	34	51
Technical assistance for upgrading machinery and facilities	4	12	2	44	62
Other	-	-	1	8	9

IV-3. Development of Japanese Furniture Industry (from "Past 30 years of IDAFJ")

(1) Rapid Progress from Local Industry to Modern Industry

In the Japanese furniture industry following the World War II, manufacturers which handled furniture for export were an exceptional case. Most of the manufacturers were wholly premodern in terms of management, size and production system.

The U.S. occupation forces provided the Japanese furniture industry with a springboard to leap from the level of a local industry to that of a modern industry. Upon beginning construction work on family housing in 1946, the occupation forces placed orders for furniture with Japanese makers. The Industrial Art Guidance Office of the Ministry of Commerce and Industry (now reformed into a design research organ, Industrial Art Institute of the Ministry of International Trade and Industry, MITI) designed 30 varieties of furniture and a total of 80-odd factories across the country were mobilized to manufacture them. Several additional orders were placed until 1949, when the total value of orders was said to have reached about ¥3 billion and the total number of ordered pieces to have reached one million.

In coping with the orders for furniture for the occupation forces' housing, the Japanese industry was given a stimulus to change its way of thinking regarding furniture manufacturing as well as the expansion of manufacturing facilities. The manufacturers found that the existing way of thinking and manufacturing of the handicraft-industry type could not cope with up-to-date design, rigid and detailed designation of specifications and the shorter time for delivery. It was natural that industrial manufacturing methods and the accompanying way of thinking were introduced into the industry. The response to orders for furniture from the occupation forces provided a turning point for the Japanese furniture industry and prompted it to shift from handicraft-industry-type production to an industrial manufacturing system.

During the Korean war which broke out in 1950, Japan was given the role of a material supply base for the Allied forces. Taking advantage of the opportunity, the Japanese economy moved out of the period of postwar reconstruction into a period of rapid economic recovery (fueled by the special procurement boom). The furniture industry, meanwhile, built the foundations for its modernization by recognizing the importance of design, improving manufacturing technology and establishing mass-production methods. In the field of technology, for instance, the conventional finishing method varnishing all furniture pieces was largely replaced by "finishing of wooden base with clear lacquer," using the bright coating as the keynote color of the furniture.

(2) Exploring Possibility of Exports to the U.S.

It was in 1949 that Japan resumed external trade. However, only a few manufacturers handled furniture for export. Problems with furniture exports, including insufficient knowledge and understanding of overseas markets, poor design, unskilled manufacturing technology and the low image of the Japanese-made furniture, mounted.

In 1956, Mr. Kappei Toyoguchi, head of the Design department of the Industrial Art Institute of the MITI, was dispatched to the United States to research furniture designs. In the United States at the time, furniture made in Scandinavia was highly evaluated on the strength of its excellent design, quality and marketability. Mr. Toyoguchi saw it as a good model of furniture exports to the United States and concentrated his research and information gathering in the area of Scandinavian furniture. As a result, he found out that, in Scandinavian countries, governments and the furniture

industries had together explored the various conditions which would enable exports to the United States for the past 17 years. And that led to their success in the United States market.

For the development of furniture for export following the example of the Scandinavian nations, it was necessary to set up an industrial organization which, as a receiver of administrative measures, would unite and lead the industry. The MITI was then busily engaged in the guidance of the industry under its export promotion measures. The Industrial Art Institute was in close touch with manufacturers over the problems of design and quality. With strongly encouragement from the ministry and the institute, the Japan Export Furniture Manufacturers' Association (JEFMA) was set up in 1957. Twenty leading firms conscious of the need for the internationalization of the furniture industry joined the association. Its first year of activities included the following:

1. Research of overseas markets
2. Research of overseas furniture enterprises and manufacturing technology
3. Study for design of furniture for export
4. Establishment of standards for export furniture
5. Study of and guidance on production methods and technology of export furniture
6. Research and study of materials
7. Research and study of various phases of transactions
8. Exhibition and publicity abroad for new product samples

These activities clearly show the problems the furniture export industry was experiencing at the time.

(3) Development of the Export Industry and JEFMA's Activities

Since its inauguration, JEFMA has coped with these problems one by one by setting up study groups and making efforts to contact and coordinate with the related government agencies as well as other peripheral industrial organizations. In accordance with the expansion of exports and variations in the export environment, JEFMA set up a study group on design in July 1957, another on technology in November 1957, a committee on paints and coating in November 1960, a preparatory committee for establishing a Tokyo Metropolitan Furniture Industry Association as a type of industry qualified for the application of the Small and Medium Enterprise Modernization Promotion Law in 1963, a committee on the exploration of overseas markets in 1965, a committee on lumber in 1967, a committee on measures to cope with changes in marine freight and a committee on measures to cope with the liberalization of customs tariffs and capital markets in 1968.

1) Study of design and research of overseas markets

JEFMA began its activities with the study of design, a pressing problem at the time. A study group on design was set up in 1957 and the Industrial Art Institute played a leading role in the research and study. The institute and the Small and Medium Enterprises Agency invited American designers and JEFMA held guidance session and meetings to learn about the design of furniture for export.

In 1960 and after, JEFMA, through JETRO, dispatched design researchers to the United States and West Europe. Half the expenses for the dispatch of researchers was borne by the nation budget because the dispatch was made as part of the export promotion measures of the MITI and implemented by JETRO. Upon their return home, the

researchers made use of design techniques they had learned and ushered in a new phase in the industry.

Plagiarism and copying of design provided the nations targeted for export with an excuse for raising tariff rates or restricting imports as well as bringing about an excessive degree of competition among Japanese firms. With an eye to the protection of designs and establishment of order in trade, the MITI in 1959 enacted the Export Goods Design Law. JEFMA was entrusted with the work of certifying the design of exports under the law. Through this measure, JEFMA was equipped with the position and function as a window for export trade.

In addition to the study of design, another big job for JEFMA at the time of its inauguration was holding a Home Fashion Show in the United States in 1958. It was an attempt to sound out the response of the U.S. market toward Japanese furniture. But it also provided JEFMA with material for reconsideration of the way the show was held and publicized. Technological problems were made clear as well with regard to the methods of drying, coating and finishing furniture for export. Supporting the show was Japan Trade Center (JETRO) in New York, which offered the facilities, and the president of a Japanese medium size firm. From the early stages, he had been engaged in trade with the U.S. and, from the standpoint of a pioneer, he advised JEFMA members on the regulations and procedures for drafting documents and concluding contracts as well as expenses for export businesses. Simultaneously with the show, two executives from manufacturers were dispatched to the U.S. in the capacity of JETRO staff members for the purpose of conducting market research and viewing furniture factories.

With this momentum established, JEFMA subsequently held or took part in overseas exhibitions almost once every year. In addition to exhibition activities, it also dispatched groups for the purposes of market research, observation of furniture plants and exchanges with chambers of commerce and industry and people interested in distribution.

In 1966, JEFMA opened a permanent exhibition hall in the Japan Trade Center in San Francisco, a joint facility with JETRO. At the same time, it dispatched a permanent representative to San Francisco. The hall was used as a base for lively exhibitions and publicity activities through the holding of a special show of Japanese furniture, an exhibition of interior goods held in Los Angeles under the sponsorship of JETRO and participation in the Southern California Exposition. In addition to the publicity activities and provision of offices for inquiries, the representative had the important work of routine market research, study of matters entrusted by JEFMA members and gathering of information. The representative also provided guidance on the design developed by an American designer on assignment and on the improvement of the design of export furniture. The representative was helpful in terms of both technology and sales as well when a JEFMA member firm established a subsidiary in the U.S.

For the purpose of approaching larger markets, the base for U.S. activities was transferred from San Francisco to Los Angeles in 1967, to Chicago in 1969 and to New York in 1977.

Until the first half of the 1960s, the United States was the only country to which Japanese furniture was exported. At JETRO's request, and in accordance with the intention toward the diversification of export markets, JEFMA in 1967 held a Japanese furniture exhibition in Sydney and in 1970 participated in a Japan industrial fair held in Moscow. In 1972, JEFMA compiled "Today's Furniture In Japan," a joint catalog for overseas markets, and distributed it in various countries around the world.

2) Modernization of management

Through the 1960s, Japan's furniture industry made rapid changes from artisan manufacturing to handicraft industry and then to modern manufacturing of the mass production type in factories. It was also a period when the foundation for modern management was laid.

In 1960, JEFMA, until then a voluntary organization, revised its status to a legal entity with a view to gaining further assistance and cooperation from the administration as an organ for cooperation between the administration and industry.

Its activities for modernization and rationalization of management included the selection of 15 committee members and their cooperation in drawing up a series of measures for cost management at small and medium enterprises classified by types of industry planned by the Japan Productivity Center in 1960. Through this cooperation, JEFMA established a standardized method of cost accounting for wooden furniture, facilitating cost reduction, cost control, profit planning and comparison of management. This also led to the establishment of order in the industry through the prevention of excessive price competition.

In 1960 and 1961, the Small and Medium Enterprises Agency and the Industrial Art Institute invited university professors from the U.S. and held lectures on the theme of production control and technology, control of transportation at mass-producing factories and other topics. Diagnosis of firms was also carried out.

JEFMA set up a study group on technology in 1958 and a committee on paints and coating in 1960 and undertook active study as well as activities to propagate the results of the study and improve manufacturing technology, gaining cooperation from related public organs and material makers. In particular, the main technological problems for export furniture were wood drying and coating and finishing. JEFMA obtained cooperation from the Forest and Forest Product Research Institute regarding wood drying and asked the Industrial Art Institute and some leading paint manufacturers for assistance in solving the problem with coating and finishing.

3) Securement of wood resources

From around 1960, the Forestry Agency proceeded with a switch from broad-leaf trees to needle-leaf trees with a view to improving the efficiency of lumber utilization. Because broad-leaf trees provide raw materials for furniture, the industry feared its supply might be reduced and exhausted.

While obtaining the preferential rights to purchase Japanese beechwood from the government as material for export furniture, JEFMA, on the advice of the MITI, started the development of lumber resources in Asia. A committee on the resource development of southseas wood was set up and either as part of the undertakings for the basic research of overseas investment and the promotion of primary product purchases of the ministry or under the sponsorship of JEFMA, a total of nine study groups were dispatched in the 12 years between 1961 and 1972. The series of studies, although they did not lead to the import of furniture materials, achieved great results by directly confirming unknown species of trees and grasping their characteristics and distribution. The fact that many JEFMA members took this chance to go abroad and learned the situation in various foreign nations contributed to the creation of foundations for the subsequent internationalization of the furniture industry.

In 1967, a committee on lumber was set up. The committee was active in seeking the stabilization of prices and the securement of a long-term, stable supply of domestic lumber centering on beechwood.

4) Administration and industrial organizations

In the 1960s, the Japanese government grappled in earnest with measures to modernize small and medium enterprises with a view to nurturing export industries.

In 1962, the manufacturing industry of wooden furniture for export was designated as a type of industry to which the Law on Extraordinary Measures for the Promotion of Individual Types of Small and Medium Industries should be applied. As a result, the actual condition of wooden furniture manufacturers was studied and undertakings for the improvement of the situation were implemented. In 1963, the Small and Medium Enterprises Agency carried out undertakings with a view to discovering export goods which small and medium firms could produce and exploiting their sales routes. In both undertakings, JEFMA positively cooperated as a window of the industry.

There were industrial organizations other than JEFMA at the time. The administration side, however, counted on JEFMA to act as a window of the industry because it had been formed earlier and its course of action and results were more clear.

In 1963, the Small and Medium Enterprise Modernization Promotion Law was enacted with a view to strengthening the management foundation and competitiveness of products of small and medium enterprises. Measures were taken on the basis of the law to promote enhancement and strengthening of overall management ability (modernization of facilities, rationalization of management control, improvement of technological ability, training of skilled people, etc.), rationalization of the size of small businesses, formation of business partnerships, collectivization of factories or stores, and business conversion.

Advantageous financial assistance measures were developed for the types of industry mapping out their modernization plan. More advantageous financial and tax measures of assistance were offered to the specific industries needing restructuring. The special tax measures included higher depreciation of machinery equipment and plant buildings, special treatment of registration and licensing tax regarding mergers, etc., a special tax system on technological development (tax credit for increments of R&D expenses, etc.) and exemption from the special land ownership tax and business tax.

To be qualified for the application of the Modernization Promotion Law, it was necessary to form an organization gathering the entire furniture industry together. JEFMA, then a group of 60-odd export furniture manufacturers, was not recognized as an organ representing the furniture industry. Therefore, in 1964, a Federation of Japan Furniture Manufacturers Association was formed through cooperation between JEFMA and other furniture industry organizations.

Subsequently, in order to strengthen the position of JEFMA itself, its status as a body under the application of the "Law on the Cooperative Association of Small and Medium Enterprises" was changed to that as one under the application of the law of manufacturers association. In 1966, the all-Japan cooperative association of export furniture industry was reformed to the all-Japan export furniture manufacturers association. At the same time, a sectional meeting on steel furniture was inaugurated to enhance its organization.

There were two factors behind the inauguration of the study group on steel furniture. One was a gradual increase in the number of metal furniture manufacturers who were keeping an eye on overseas markets, and the other was the MITI's failure to treat steel and wooden furniture separately in its administrative measures, although the two kinds of furniture differed totally in terms of materials, manufacturing technology and sales channels and were faced with different problems.

The setting up of the study group on steel furniture provided a chance to create a system of mutual advantage through cooperation between wooden and steel furniture manufacturers.

5) Other activities

In promoting exports, marine freight was a significant problem, and not only for the furniture industry. In 1965, JEFMA, in cooperation with other export-oriented industrial organizations, staged an opposition campaign against an increase in freight rates and succeeded in keeping the rise to a minimum. In 1968, JEFMA, which had already set up the study group on steel furniture, established a committee on measures to cope with marine freight rates and used its export volume to reinforce its bargaining power against shipping conferences for the Pacific coast and the Atlantic coast. As a result, marine freight rates for wooden furniture, which is lighter than metal products, became very favorable for the exporters.

As a foundation for the modernization of the furniture industry, it is necessary to enhance manufacturing facilities to enable mass production and process rationalization. Since 1971, JEFMA has been involved in activities to assist in the development of machines exclusively for the industry in cooperation with the Japan General Merchandise Promotion Center.

The undertaking includes advance research (from research and study of manufacturing processes and mechanical technology to drawing up of specifications, conception plans and estimates), manufacturing of exclusive machines or equipment on an experimental basis, if necessary, and lending them for five years free of charge.

In cooperation with the Japan General Merchandise Promotion Center, JEFMA sought to find out the wishes of its members in terms of implementing advance research and developing exclusive machines. The results were publicized for JEFMA members and contributed to the improvement of their manufacturing facilities.

Influenced by "Nixon shock" in 1971, Japan was forced to shift to a floating exchange rate system and revalue the yen by as much as 16.88 percent. As a result, the export environment worsened, dealing the wooden furniture exporters a heavy blow.

To cope with the situation, JEFMA presented its wishes to the Minister of International Trade and Industry, calling for the amelioration of the situation and relief measures. As a result, a series of relief measures for exporting enterprises including an emergency financing system and depositing of foreign currencies by the government were put into practice.

"Nixon shock" also brought to the fore a demand for the review of JEFMA's undertakings. It called for a shift from the orientation toward exports alone toward contributions to the development of furniture industries around the world. Partly in response to the administration's request, JEFMA began remarkably increasing its activities in the area of assistance to developing countries.

IV-4. Approaching the Japanese Market (including Japan's Imported Furniture Market Classified by Use)

A. Points for Consideration Regarding Manufacturing Technology

When Japanese buyers import parts, semi-finished goods, finished products, etc., their main considerations are the following:

1. Furniture parts; there are few imports of furniture parts alone, because it would be difficult to attain uniformity of raw materials.
2. Semi-finished goods (sanded frames, assembled parts, etc.): Imports are mainly assembled parts and knock-down products because when transportation costs are considered, it is more efficient to import products which can be packed in large volumes in cargo containers. Problems with imports of these products are contraction or swelling of the wood and precision control on jointing structures during transportation. As a result, adjustment or revision is often needed at the time of final assembly. Because of the need for revision, most of the knock-down imports are unpainted and have no special design. In the export of assembled parts, consideration should be given to the facilitation of final assembly. In cases of chairs, front and hind legs should be combined in sets. Front or hind legs alone should never be put together in one lot.
3. Finished products: The buyers wish to keep processing in Japan to a minimum because of the high labor costs in the country. In addition, due to the problem of transport costs, the main imports of finished products are limited to chairs and small furniture. Imports of box type products such as chests and dressers are confined to those which can be assembled. Imports of sculptured furniture which cannot be assembled are limited to products sculptured by machines or mechanically pressed in a sculpture style and manufactured in Western Europe because of their qualitative uniformity and low prices.

Firms which are interested in exporting to Japan in the future must learn basic manufacturing technology and improve processing precision. With regard to manufacturing technology, the overall level of technology must be improved by steady efforts, through Step 1 (the proper use of jigs and tools and basic adhesion technology) and through Step 2 (mastery of adhesion technology including how to veneer and consideration of which adhesives to use as well as coating technology including face sheet and coloring). When exporting unpainted products, they must be carefully dried and packed so that no moisture can damage them.

Over the mid and long term, it is hoped that exporters will study upholstery and technology for its application. To cope with the diversification of designs, exporters must learn multifarious coating technology, cloth and leather upholstering technology and molded plywood technology as well as jointing devices. In addition, they should also be careful in the use of metal fittings if they are aiming at the upmarket. In Japan, metal fittings are not used on visible portions of products. If they are used, some measures such as covering them with panels are taken.

Taking transportation costs, insurance, defect ratios and domestic distribution costs in Japan into account, it is generally said that, in order to be profitable, import prices should be between one-quarter and one-third the retail prices in Japan. Accordingly, it is an important problem for exporters and manufacturers to secure the volume of production and shipment in container lots, reduce production costs and cut shipment prices through improving productivity.

B. Activities for Exhibition at Trade Fairs in Japan

In the latter half of the 1950s and the early 1960s, the Japanese furniture industry held some exhibitions of its products and set up a permanent exhibition hall to exhibit continuously in the United States. The exhibition was initiated to learn how to hold exhibitions and promote the industry as well as to learn techniques for drying and finishing products rather than as an attempt to immediately begin exporting to the United States.

The Philippine furniture industry should also make efforts to publicize the characteristics of Philippine furniture by utilizing exhibitions as opportunities not only for external trade transactions but for studying various conditions to enable exports and to conduct market research. As a matter of practice, exhibitions/trade fairs in Japan are not considered to be places for negotiating deals. This is not confined only to the furniture industry. For the exhibitors, the events are part of their activities to publicize product lines, product development ability and technological level. The visitors, on the other hand, aim to discover suppliers or tie-up partners as well as to study the moves of their competitors. The actual negotiation of deals is not done until exhibitors follow-up with sales promotion activities after the exhibitions/trade fairs and daily or at least regular exchanges of information have occurred to gain the trust of the buyers.

In the sale of furniture, the higher the grade of product, the more the after-sales service matters. Viewed from the standpoints of response to technology transfer and after-sales service, furniture makers and major importers having furniture manufacturing sections will have preference in approaching the Japanese furniture industry.

Japan's Imported Furniture Market Classified by Use

Use/Product	Characteristics	Price Zone of Imports
For living room		
Chairs and sofas	<ul style="list-style-type: none"> • Most of these items are upholstered. Use of wood at the arm portion has tended to diminish. • Upholstery materials are divided half-and-half into cloth and leather. Cloth coverings include plain weave, moquette, jacquard weave and velvet. More subdued colors of high quality have become popular as opposed to bright pastel colors which were popular in the past. • In the past, these items had tended to be sold mostly in sets. Currently, however, such sets are often broken down and sold as separate pieces to allow consumers to enjoy freely combine furniture. 	<p>A high-grade unit (a three-piece set: cloth/leather): Around ¥2 million</p> <p>A medium-grade unit: ¥1 million or less</p>
Cabinets	<ul style="list-style-type: none"> • Imports of living room sideboards have tended to diminish because of the rising demand for multi-purpose system-type wall storage furniture. • Demand remains strong, however, for modern low-type sideboards with great storage capacity and also for classic sideboards. • Precious woods produced in the exporting countries are favored as materials. 	<p>A low-type unit: ¥300,000-500,000</p> <p>A classic unit: ¥1 million or more</p>
For dining rooms		
Chairs and tables	<ul style="list-style-type: none"> • Until recently, the dining room and kitchen in most Japanese homes have not been separated. Recently, however, the kitchen has been separated from the dining room which is used also as the living room. • Grades and designs have become more diversified. <i>Classic items also sell well.</i> • This is the easiest market segment for imports to enter. In view of the intensity of price competition, however, it would be a good policy for importers to focus on high-grade units. • As for designs and types, futuristic and contemporary ones enjoy overwhelming popularity. • Extension tables have been introduced but have proved less popular than expected. • Materials are mostly oak, pine and teak. High-grade materials such as rosewood are increasing. 	<p>A high-grade unit: ¥1.5-2.0 million</p> <p>A medium-grade unit: ¥150,000-200,000</p>
Cabinets	<ul style="list-style-type: none"> • Cupboards have become notably "polarized" in use, with one type designed for kitchens and the other for dining rooms. The popular type consists of large units with good storage functions for kitchens and decorative units with sophisticated designs for dining rooms. • Since dining rooms are used increasingly as living rooms as well, cupboards of the decorative type will enjoy more popularity in the future. 	<p>A contemporary /futuristic unit: ¥300,000-400,000</p> <p>A classic unit: Around ¥1 million</p>

Use/Product	Characteristics	Price Zone of Imports
	<ul style="list-style-type: none"> • Contemporary and futuristic designs and styles are popular among young people, and subdued colors are favored by older people. • Materials in use include oak, birch, maple, mahogany, pine, kwarin (Chinese quince), teak and rosewood. • Notable in recent years is the sales growth of system kitchens. • Competition between imports and domestic products is unavoidable in the market for popular and medium-class products. Importers, therefore, would do well to focus on high-class products. 	<p>System kitchens A popular unit: Around ¥500,000 A high-grade unit: Millions of yen</p>
For bedroom	<ul style="list-style-type: none"> • Beds are still used in only 46 percent of Japanese households. The use of beds, however, will increase in the future with the aging of the population. In particular, the high-quality bed market targeted at wealthy senior citizens is expected to grow. • While domestic products are made mostly of wood, most imports are either upholstered (cloth/leather) or made of brass. • Demand for wardrobes and dressers other than system units has decreased. However, demand for deluxe, classic furniture remains strong, although the market is limited. 	<p>Single: Around ¥500,000 Double: ¥1 million or more</p>
For study room	<ul style="list-style-type: none"> • A combination study-bedroom or study-drawing room is common in Japanese households. • Favored chairs and desks for use in study rooms are usually more sophisticated and functional than those used in ordinary offices. In particular, wooden desks are preferred. • Imports of bookcases are extremely limited. Most products are designed for use as both a bookcase and a sideboard, or as a wall system with some bookshelves. • Future growth of demand can be expected for system furniture with a built-in space for computers and for wooden office furniture because the number of people "working at home" will rise. 	
System furniture	<ul style="list-style-type: none"> • Imports of wall furniture of the simple unit type have decreased because of competition from domestic products. Recently, however, imports of audio unit cabinets and similar items from Taiwan and other Asian countries have increased in the popular goods market. • In the high-class product market, large multi-purpose system furniture developed mainly in West Germany and featuring good storage room is the mainstay. <ul style="list-style-type: none"> • Materials in use include oak, walnut, rosewood and red sandalwood. • Simple designs are preferred. Most high-class furniture has subdued colors such as dark brown. 	<p>Whole system: Around ¥2-3 million</p>
For office and public use	<ul style="list-style-type: none"> • Imports consist mostly of products of special designs and functions. In the past few years, imports of high-grade, high-quality furniture have increased sharply because the yen's appreciation has made imports cheaper relative to domestic products. 	

Use/Product	Characteristics	Price Zone of Imports
Chairs and stools	<ul style="list-style-type: none"> • Hitherto, imports have consisted mainly of products from West Germany and Italy because of their superior designs and functions. These products have generally been produced in Japan under licensing agreements. • The yen's appreciation, however, has made domestic products more expensive relative to imports, and as a result, imports of finished products have gradually expanded. • Most imported chairs and stools are used at hotels, restaurants and other commercial or public facilities. In particular, high-grade chairs and stools for outdoor use are predominantly foreign-made because domestic demand for these products is extremely limited. • However, there is a growing tendency to use imported products indoors, such as in office lobbies, atriums and waiting rooms. At major hotels, imported chairs and stools are increasingly used in lobbies, guest rooms, bars, restaurants, etc. 	
Desks and tables	<ul style="list-style-type: none"> • For offices, imported wooden desks are used by executives of companies and other organizations. But desks for general use are mostly domestic products. • File drawers in imported desks do not meet the standards for Japanese files. • Imported wooden desks are high-class units of the orthodox type. They are made mostly of teak, walnut, rosewood, red sandalwood and ebony. • Imports of tables for general use are marginal. These tables are purchased mostly for use in corporate executive rooms and in hotels, restaurants and other commercial facilities. High-grade tables are made mostly of wood. • In recent years, folding tables with melamine resin tops and steel legs have begun to be imported from NIEs in Asia, but the import volume remains marginal because of quality problems. 	<p>A wooden desk for executives: ¥700,000 or more</p>
Wall system furniture for offices	<ul style="list-style-type: none"> • Office furniture of this type can be divided into two groups — namely, those designed to improve storage efficiency in offices and those designed for both storage and decoration and used in executive offices and reception rooms. Most imports belong in the latter group. • Imported products are not suitable for use in Japanese offices because their file drawers are based on Western standards and therefore differ from the JIS standards for file articles. Imports are inferior to domestic products in terms of function. • Imports of the decorative type are mostly high-grade products and rather expensive. • Designs are generally modernistic. In particular, demand is concentrated in products of subdued designs and colors. 	

Source: "General Situation of the Imported Furniture Market in Japan, 1990" published by International Development Association of the Furniture Industry of Japan (IDAFIJ)

IV-5. The Self-help Efforts of the Korean Wooden Furniture Industry

1) Smoother supply of raw materials

For the direct development of material wood producing areas, joint investments are promoted, the construction of lumber mills and joint purchases of lumber and plywood have been promoted aggressively.

To reduce prices of logs and lumber, the industry is contemplating approaching the government (the Department of Finance) to ask lower the import tariff rates from the current 5-20 percent to 0-10 percent and also to request that the authorities concerned simplify import procedures.

2) Improvement of quality and promotion of technological development

Under government guidance, a forestry experimentation station is currently drawing up a business program aimed at improving lumber drying technology. Export-oriented small and medium enterprises, on the other hand, are proceeding with the construction of a joint lumber drying mill.

Financial help will be provided for the improvement of coating facilities at small and medium firms. Development of new materials will be promoted to enhance their ability to develop new products. To train specialists in design and product planning, a total of 250 engineers (50 a year) will be dispatched to the United States, Japan, Italy, Denmark or elsewhere during the five years from 1987 to 1991.

3) Exploitation of overseas markets

A training course on practical external trade business will be implemented to foster export specialists for small and medium firms. As part of measures to strengthen overseas marketing activities, the industry will actively participate in expositions abroad. Moreover, overseas information will be gathered through diplomatic establishments and KOTRA offices and supplied for use by the industry.

4) Promotion of specialization and affiliation of production systems

a. Specialization of production systems and construction of common facilities

An industrial cooperation park will be created mainly by small and medium firms in the furniture industry. Its chief activities will be as follows:

- Production facilities: 8,000 tsubo
 - Lumber drying facilities (1,000 tsubo)
 - Lumber mill (1,500 tsubo)
 - Log yard (3,500 tsubo)
 - Dust collecting facilities and boiler facilities (500 tsubo)
 - Joint warehouse (1,500 tsubo)
- General facilities: 2,000 tsubo
 - Skilled worker training station, permanent exhibition hall, other joint business facilities.
- Gathering of overseas information, invitation of overseas buyers and joint purchases of raw materials.

b. Affiliation of firms

Affiliation between large and smaller firms will be promoted. First, two large firms at national level will be designated to form affiliations with 10 small and medium firms of their choice. The selection of production items between large and smaller firms and among small and medium firms themselves as well as technological guidance will then be made. Exports will be made through large firms. Subsequently, affiliation will be promoted between other large firms and smaller businesses.

V. Computer Software and Services

V. Computer Software and Services

1. Current State and Trends in Computer Software Export Market

1-1 Summary

(1) Foreword

Among the main software markets of the world, the U.S. is overwhelmingly the largest in size, worth US\$24 billion (1989). This is followed by Japan at 1.8 trillion yen (US\$13.9 billion calculated at US\$1=130 yen). The U.K., Germany (old West Germany only), and France together are worth US\$6 billion, just 25 percent that of the U.S.

The U.S. and the countries of Western Europe are placing orders (or importing) for development of software to software development companies in other countries. In the case of the U.S., about 2 to 4 percent of the custom software development (development of software by individual commission) is ordered overseas.

(2) Structure of Computer Software Industry

The delivery mode of the computer software industry changes along with changes in the hardware environment of a country and the complexity of its information systems. In the case of the U.S. market, the most diversified in the world, the following delivery modes are seen (Fig. V-1-1).

1. Applications software development
2. Systems software development
3. Network development
4. Professional services
5. Turnkey systems
6. Systems integration
7. Processing services
8. Computing services

In addition to these, there is the data entry service. This is sometimes classified under the processing services.

"Applications software development" is the most general in software development and involves the systemization of applications by the use of computer programming languages based on the specifications demanded by the computer user. Specific examples would be the calculation of wages for employees, inventory control, and preparation of ledgers for financial control systems.

"Systems software development" refers to the development of software not related with specific application programs and includes everything from the software for controlling the computer itself such as operating systems (OS) to software for supporting the operation and development of application programs and various types of utilities (sort-merge, file operations). Compared with "applications software development", this requires not only the capability of development using programming languages, but also a technically sophisticated development capability with knowledge of computer architecture.

"Network development" consists mainly of development for the transmission control required along with the connection of computers of the same or different types.

This requires not only a capability of programming using computer languages, but also a broad range of knowledge of the communications field, analysis of routines of various protocols, the capability of designing systems along with development of applications, knowledge of general business, and other advanced development capabilities.

"Professional services" are mainly consulting services designed to aid the introduction of computer systems tailored to the management strategy of companies as a whole. Along with the increased complexity of information systems and due to the shortage of experts in the field, it is expected that demand will increase in the future. In the U.S., accounting companies usually perform these services.

"Turnkey systems" refer to services which provide software and related hardware for specific business uses, such as CAD/CAM. Technically, the services sometimes are asked to provide everything from the level of "applications software development" to "professional services".

"Systems integration" is a service for large scale multivendor or user systems. This service combines systems design, computer program development, telecommunication network development, determination of related equipment, etc. A high level of technical services is required. At the present, this is the most specialized form of service.

"Processing services" include 1) transaction services, utility services, and other remote/batch processing services and 2) provision of equipment, provision of software, dispatch of staff, and other system operation services. They also include data entry.

"Computing services" refer to the computing large volumes of data generated in banks and securities companies, and sometimes are classified as part of processing services.

This diversification of delivery mode is not the same in all countries. Even in Japan, which is considerably advanced in computerization, the systems integration service has just begun.

(3) Changes in Hardware Environment and Trends in Software Industry

In the world computer hardware market, IBM continues to account for over 70 percent of the value and number of computers and is further strengthening its position. While Fujitsu holds top place in the Japanese market, however in the market for large sized general-purpose computers, IBM remains highly competitive. As a result, almost all the computer software in the world is IBM compatible. It is not believed that this trend will change in the future.

In the U.S., the growth rate of the hardware market has fallen and unprecedented layoffs made of employees, but the world computer hardware market continues to growth at a rate of 10 to 15 percent a year.

If the hardware market grows, only naturally the software market will grow. In the past three years, the growth in software has been about 1.5 times greater than the growth in hardware in the U.S. and about 1.8 times in Japan. Further, an analysis of the correlation between the value of new hardware installed in the U.S. and the value of software developed in the past five years shows that there has more of an increase in demand for software for minicomputers than for mainframes.

A world trend is for downsizing of computers. This is due to 1) the higher processing speeds of central processing units (CPU), the brains of computers, and the

advances in integration of peripheral technology and 2) the appearance of reduced instruction set computers, known as RISC machines, which has enabled far faster speeds of information processing. Further, the mounting of UNIX, which is becoming the mainstream of basic software, in these RISC machines has tremendously improved hardware performance and this has further promoted downsizing. As a result, it is believed that RISC machines will be used as the front end machines in future information processing computers and that large sized general-purpose computers will be used mainly for functions such as data base machines for storage of large amounts of data files.

The trend in utilization of computers is one of increased construction of network systems and combined use of different systems. Therefore, it is expected that software development and information processing service work will increasingly be of services of work relating to network development services and systems integration and combinations of the same. The software development industry will have to work to improve technical capabilities so as to enable it to deal with this trend.

(4) Software Development Exports, Export Markets, and Competing Countries of the Philippines

The Philippines designated software development as a key industry for promotion of exports in 1987. At the present time, the biggest export market for the Philippines is the U.S. Other promising export markets are Canada, Australia, Western Europe, and Japan. These markets are expected to grow at a considerably fast speed and in this sense exports of software development services could be said to be a promising industrial field.

However, as mentioned later, almost all the orders placed by the U.S. with Filipino companies are for the applications software development. Further, the orders are limited to areas of software development after the detailed systems design. The previous stage of development, that is, the systems analysis etc., is basically handled by the U.S. companies. The future shortage of software development personnel in the advanced industrialized countries will be severe, estimated as reaching 970,000 personnel by the year 2000 in the case of Japan (according to the Informatization White Paper). However, the shortage of software development personnel is expected to be mainly in higher levels systems engineers and systems analysts, not programmers. From this viewpoint, it is considered that there will be increasingly greater potential for imports of not the level of work currently being received by the Philippines, but of higher level work.

Behind the export capability of the software development industry of the Philippines are the country's English language ability, high educational level, and cheap labor force. In this regard, the same conditions are present in numerous other countries such as Jamaica, India, and Sri Lanka. When the countries placing orders select which of these countries to do business with, they will also consider the conditions of the investment and trade environments which arise due to tieups in addition to the conditions for software development. Therefore, only naturally, these conditions too will be important for the success of the Philippines.

Below, an explanation will be made of the state of the software export markets of the U.S., Japan, Canada, Western Europe and Australia. An explanation will also be made of what kind of interest software development companies in the U.S., Japan, and Canada have in the Philippines and how they assess that country.

In the next chapter, a study will be made of the state of the software development industries of nearby competing countries, what kind of means they have employed to build up the industry, and the effectiveness of those means.

1-2 Japanese Market

(1) Hardware Environment

The methods of classification of Japanese hardware, in particular computers, differ from the methods of classification of the U.S. In Japan's case, computers are classified according to the purpose of use into general-purpose computers, minicomputers, office computers, and personal computers. This classification, however, is not a clear one, so below computers will be classified into two groups: general-purpose computers and personal computers (PC) in the explanation of installation of computers in Japan. The future trends in the market for software will be studied based on this.

As of September 1987, there were about 340,000 general-purpose computers installed in Japan, up 25 percent from the previous year, worth about 9,400 billion yen, up 16.2 percent from the previous year. By model, in numbers, the share of super mini computers has increased, and in value, the share of large sized computers has grown. This is due to the increase in high performance models of mini computers machines and thus increased demand and due to the large numbers of large sized computers introduced for industrial control (process control and network control). Compared with the U.S., Japan has a higher rate of increase, but Japan has few computers installed compared with the U.S. (1.65 million units, US\$140 billion). The per capita number of computers installed in Japan is only 40 percent that of the U.S., so there is still room for growth.

It is estimated that there are about 4 million PCs in Japan. PCs are widely used everywhere from the office to the home. Recently, in particular, there has been growth in shipments of laptop PCs, book type PCs, and work stations. At the present, 16-bit models are the mainstream, but there has also been tremendous growth in 32-bit types.

Looking at the shares of the market of the manufacturers, unlike in many other countries, Japanese manufacturers and joint ventures of Japanese and foreign capital hold large market shares. In general-purpose machines, Fujitsu, IBM Japan, Hitachi Ltd., NEC, and Japan Unisys account for about 94 percent of the market (Fig. V-1-2). Among these, the general-purpose machines of Fujitsu and Hitachi are IBM compatible, while NEC has pursued development of its own system of general-purpose machines.

NEC holds more than a 50 percent share of the PC market. NEC has an overwhelming sales capability in Japan for its PC9800 series, but this model is not compatible with the PCs of IBM and uses its own software.

A look at the state of operation of general-purpose computers by industry shows 35.5 percent used in the manufacturing industries, 17.2 percent in financing and insurance, and 15.1 percent in wholesaling, retailing, and food (share of value, Table V-1-1). In the manufacturing industries, computers are being used for personnel management systems, accounting systems, and recently for computer integrated manufacturing (CIM). In the financing and insurance industries, there has been great progress in establishment of on-line networks. The large banks have built the third generation on-line systems and are making further use of large general-purpose computers. The city banks have invested, on an average, over 100 billion yen (US\$770 million) in development of the third generation on-line systems. In the wholesaling and retailing sectors, large numbers of computers have been purchased due to the introduction of POS systems. Further, airline companies have introduced large computers for constructing seat reservation systems.

A recent trend has been for an increase in companies introducing large numbers of UNIX work stations. This is due to a desire to realize a one-man, one-computer office environment or engineering environment so as to raise productivity and achieve greater

efficiency. In the past, work stations were used for high speed processing type computers used for CAD/CAM, scientific and technical computation, and software development. Recently, however, they are being used for business applications in financial institutions, the manufacturing industries, and the distribution industry. The weight of the business market has been rising each year. Users tend strongly to use horizontally distributed processing type systems where work stations with superior network functions are connected to general-purpose computers.

The main factors which it is considered will have an impact on future hardware demand trends are 1) the progress in computerization, in particular the introduction of computers in government offices, the purchase of new computers based on construction of SIS (strategic information systems) in companies, and the increased demand from private individuals along with the fall in prices of PCs and 2) the trend of downsizing. In the U.S., the major users are shifting the emphasis in their investment from large-sized machines to workstations and other small-sized models. In Japan too, demand for workstations has been increasing as a general trend.

(2) Software Market

1) Market size and trends

In Japan, computer related information processing services are classified into VAN, computing, software development, data entry, system management and operation services, machine time sales, data base services, and various research services. Here, an explanation will be made of two markets, software development and data entry, as potential export markets for the Filipino software development industry.

In 1988, sales from software development and programming totaled just under 1.8 trillion yen. Looking at just the business establishments surveyed continuously from 1987, sales increased 24 percent from the previous year. This upward trend is expected to continue in the future. In the software market, a trend seen is for a transition from custom software to packaged software, but about 90 percent of the market is for custom software. The applications software generally developed is for production and product control systems, financial management systems, sales control and support systems, personnel management, customer management, systems integration, network development, CAD/CAM, CIM, POS, ALMS (Asset and Liability Management System), etc. The number of programs is increasing due to the increasingly sophisticated and diversified needs of the users for more complex systems, large system sizes, transition to distributed processing, networking, security, etc. At the same time, labor intensive work such as programming and coding is increasing at a faster rate. By computer type, development of software for work stations using UNIX as OS is expected to increase.

2) Issues in Japanese software development industry

a) Issues

Important issues in the Japanese software industry include 1) the securing of personnel for meeting domestic developments demand, 2) securing of personnel along with the internationalization of Japanese industry, and 3) improvement of software development productivity.

b) Necessity of securing manpower to meet increasing domestic demand

In terms of advanced information services, the securing of manpower to meet the needs of the domestic market, including advanced engineers who have planning and specification abilities, will be required. Meeting software demand, and promoting the

growth of the information services industry so as to realize an advanced "information" society in the 21st century. In particular, it is considered that advanced information processing engineers such as SEs and project managers will become necessary. If things continue as they are, it is projected that there will be a shortage of 970,000 engineers at the beginning of the 21st century.

In a questionnaire survey run on Japanese software companies, conducted during the process of this survey, 62 of the 65 responding companies replied that they were suffering from shortages of personnel. In particular, 100 percent of the small companies with less than 50 employees felt they were short personnel. A breakdown of the shortage of engineers shows that numerous companies were short in SEs and extremely few companies were short in keypunchers and operators. The shortage in SEs is seen irregardless of the size of companies. The trend in the shortage in programmers is one of less shortage along with the greater size of the company involved. This reflects a rising tendency in the large companies of performing advanced development, such as system design, on their own, and relying on outside contractors for program preparation and other labor-intensive work.

Countermeasures for the shortage of personnel being considered are improvement of training in information processing and establishment of regional software centers. Further, use is already being made of female workers, foreign engineers, etc. as trial measures for the time being.

Japanese companies have tried deals in which they take charge of early processes of development such as the general design and commission the later development work from the detailed design on to other Asian countries. Most of these companies, however, have failed. The reason given for this has been the inability to establish a development system enabling the local side to handle the software, which has to be developed in Japanese and based on Japanese culture and customs. One method of resolving this problem is to train local engineers in Japan for long periods and to have those engineers return to their home countries to handle the development work. Several companies have tried it, but as of now, none of these projects has reached the stage of actual development work and their effectiveness is not known.

Even now, a software company affiliated with a manufacturer is establishing a software development company in Wuhan as a joint venture with a Chinese enterprise. This plan calls for Chinese software engineers to be trained jointly with the Chinese side and develop software for the Japanese market and for establishing a sales base for software in the Chinese market.

Also, to sell software developed in Japan in the international market, attempts are being made to develop English language versions in Singapore, where English is in general use.

Overall, there is considerably limited commissioning of software development work overseas. According to a "survey on the information services" of the JISA, 13 out of the 252 responding companies have commissioned work overseas (including scheduled plans). The Republic of Korea, Taiwan, and the U.S. accounted for 11 of the cases of work commissioned overseas. The work commissioned in the majority of the cases, 11, was development of business related software. The reasons given for commissioning out the work were reduction of production costs, elimination of shortages of personnel, expansion of overseas markets, etc.

c) Necessity of securing manpower along with internationalization of Japanese industry

Next, the internationalization of Japanese industry (the launching of overseas

projects by key industries and the internationalization of financing) has forced information services with deep ties with various industries to move overseas as well and as a result as made it necessary to secure more personnel. That is, rather than the software companies seeking markets overseas on their own, the software companies have begun developing business bases overseas in response to requests from users which have invested overseas. Personnel training in such cases must include both training of Japanese staff and training of local staff.

In the case of training of Japanese staff, someone with management ability is required to assemble the team and push forward the project. In the case of overseas projects, it is necessary to lead local staff, so that person has to have flexibility allowing him to deal with the different culture. It is difficult at the present time, however, to dispatch the rare domestic top level engineer overseas. Further, it is necessary to newly train engineers familiar with overseas transactions. Several Japanese software houses have seen this trends and are sending engineers overseas to study.

Further, when Japan provides information services overseas, it has to provide the other country with various types of technical knowhow and information and provide sufficient education and training. This type of transfer of technology to another country, however, would require considerable time and money. Also, in most developing countries, there is tremendous movement of top level engineers from one company to another. For these reasons, there is some apprehension as to maintenance and operation of systems in the developing countries after the development of the systems. To solve these issues, it is necessary to pay local employees salaries which are higher than the standard payment at local corporations to thoroughly improve working conditions and to promote a recruiting plan suitable to local business practices.

d) Necessity of improvement of productivity of software development

In the past, attempts have been made in the software industry to increase sales by the quantitative expansion of employees, but there has been almost no rise in productivity in the past 10 years. Therefore, to raise productivity in software, companies are beginning to try to improve the development capabilities of their engineers, achieve thoroughgoing process control in development, and equip themselves with software development support tools. Launching all these measures for raising productivity on one's own, however, would mean a considerable fund burden. Overall, this is therefore not being done except by companies of over a certain size. A look at the breakdown of technical development investment shows that, first, stress is placed on software development support technology. Second, numerous companies are investing so as to upgrade their project management techniques. On the other hand, education for improving the development capabilities of engineers is being given even in relatively small sized companies. There is, however, no fixed system of education such as a system of training software engineers. In actuality, much of the education is left to the individual companies. Other means of improving productivity include establishment of a better development environment and division of software into components for possible later reuse. If such means of improving productivity are not encouraged, there will unavoidably be a massive shortage of software engineers in the future.

(3) Data Entry Service Market

The growth rate of the Japanese data entry market has become lower than the growth rate of overall information processing services (Table V-1-2). The opportunities for data entry are increasing, but in the future, 1) the input systems will change from input by punching keys, which currently accounts for the majority of the work, to input by OCRs (optical character readers), OMRs (optical mark readers), bar codes, and MICR (magnetic ink character reader) and, further, voice and image input will be developed and

2) data will be input at the time of generation of the data and be used as is for data bases etc., so reinput work will become unnecessary. Depending on what happens with these, demand for data entry services may be decreased in the long term.

The average unit price for character in the case of contracting out punching work is 0.34 yen for numerals, 0.437 yen for English letters, and 0.56 yen for Japanese kana characters. Further, the price when contracting out without differentiating between the three types of characters is 0.418 yen. Note that the unit price for Sino-Japanese characters (Kanji) is 1.782 yen. In recent years, the unit price has not fluctuated much at all and has remained stable. If the unit price of data entry in the Philippines is US\$5 per 10,000 characters, then the cost in Japan would be about six times greater (US\$1=130 yen).

Japanese companies have tried contracting out data entry work to R. Korea and China. A company in the Philippines has received orders for work from life insurance companies in the past. In all cases, the work involved input of only alphanumerics. Further, Japanese data entry companies have called people over from R. Korea and China to do data input work in Japan, but there have been problems in productivity etc. and the projects cannot yet be evaluated.

(4) Intentions of Japanese Companies in Expanding Overseas

The results of a survey on intentions of Japanese companies in expanding overseas, conducted as part of this survey, were as follows: (see Annex V-1)

1) Business with Asian countries

First of all, of the 65 responding companies, 25 (38.5 percent) responded that they had past experience in doing business with Asian countries. By number of employees, there was greater experience in business the larger the number employees.

The most frequent experience of the companies was receiving trainees. Broken down by country and region, China accounted for seven cases, R. Korea for two, and Taiwan, Thailand, and the Philippines for one each (multiple countries were possible, so the total number of responses exceeds the number of responding companies, same below). Next most frequent was contracting out of work, in eight cases, broken down into preparation of software in five cases, data entry in two, and one unknown. Broken down by country and region, R. Korea accounted for two cases of software preparation and China, Taiwan, and the Philippines for one each, while R. Korea and Philippine each accounted for one case of data entry. In addition, there were seven cases of export of software and technical transfers each, five cases of employment of staff, and two cases of joint development.

The fact that China accounted for the largest number of cases of receipt of trainees reflects the intention of companies to develop China, with its large population and numerous superior engineers, as a future contractor for development of software which cannot be handled domestically. Companies which have actually accepted trainees from China look at them less as immediate firepower and more as future potential.

As opposed to this, in contracting out work, companies order out work such as software preparation and data entry to companies which are already engaged in software preparation and other data entry services locally. In particular, the work commissioned out to R. Korea is not that much different in quality and cost level than programming and systems design performed by subcontractors in Japan. In addition, there have been one case of work contracted out to China and Taiwan each. In both cases, joint ventures have been established between a Japanese company and a local company and work such as

program development, generated in Japan, is contracted to the same.

China has come into attention as a base for computer production due to its abundant labor force and cheap personnel costs. The Chinese government also considers the computer industry as a basic industry and is encouraging training of manpower so as to increase production in software as well making use of its large population. Trainees are being sent to companies in Japan through industrial organizations. The Japanese side is cooperative in training of personnel due to the merit of contracting out labor intensive work such as programming and therefore making up for the shortage of domestic manpower. According to companies actually contracting out work, there are numerous high skilled workers in China. The nature of the work is also gradually changing from relatively simple work such as data entry to more sophisticated work such as software development as a general trend. To make up for differences in customs between the two countries, Chinese which have had experience in study in Japan are employed to serve as bridges between the countries. Further, attempts are also being made to have Chinese system engineers make programs for the on-line systems used by Japanese financial institutions.

Taiwan has achieved remarkable growth in its computer industry in recent years and has reached a high level of technology on a par with R. Korea. However, R. Korea and Taiwan have experienced rising costs in recent years and the cost merits of direct investment or consignment production have gradually declined. When doing business with these countries, there is less of an expectation of production at a low cost and more of working with partners which can help enable orders received domestically to be completed within deadlines and which offer a quality equal to that of domestic contractors.

Hong Kong and Singapore have small populations, so lack sufficient engineers even to handle their own demands. They therefore are not considered by Japan as sources for manpower. In particular, in Hong Kong, there has been an increase in information processing engineers emigrating overseas in fear of the future return of Hong Kong to China.

The ASEAN countries, including the Philippines, do not have the foundation of users and training of personnel for computer industries. Further, the industrial infrastructure, such as electric power and telecommunications, has not yet been established. For these reasons, companies tend strongly to stay away from these countries.

2) Interest in division of labor with Asian countries

One of the possible countermeasures for the shortage in software engineers is a division of labor with the Asian countries. Forty-eight companies responded that there were interested in this. It may be understood that a considerable percentage of the companies have not contacted any Asian countries yet, but are interested in doing so.

In particular, looking by the number of employees, 88 percent of the medium sized companies (having 50 to 299 employees), 100 percent of which are considered to be facing shortages of systems engineers, indicated that they were interested. The feeling of insufficient manpower and the degree of interest in a division of labor with Asian countries roughly correspond.

Next, looking at the countries and regions which could be considered, China was mentioned most often, in 31 cases. next came Taiwan at 26 cases, Singapore at 24, and R. Korea at 23. China was mentioned most often due, probably, to the existence of its large labor force, the growing perception in the industry of the large amount of superior

manpower there, gained through receipt of trainees, and the fact that it is culture using familiar Sino-Japanese characters in its writing. The NIEs follow China due to their high level of technical expertise, the high level of education in their societies, and the assessment of their having a common business environment as with Japanese.

As opposed to this, among the ASEAN countries, the Philippines was mentioned most often, in 18 cases. This is believed to be because it is an English speaking country, labor costs are cheap there, etc. After the Philippines came Malaysia, in 10 cases, Thailand in seven, and Indonesia in three. In general, the ASEAN countries are receiving brisk investment from Japan at the present time, mostly in the manufacturing industries, but Japanese companies tend strongly to distance themselves from the software industry due to their strong perception of it still being low in technical expertise and further the lack of development of the industrial infrastructure, such as electric power and telecommunications.

3) Degree of interest in the Philippines

Most software companies exhibited the greatest interest and expectations in China. However, while the leading candidate under study, it has a high country risk. In particular, in the computer industry, there is a major problem with COCOM restrictions and therefore there is apprehension as to whether business with China would be difficult and whether stable business could be guaranteed due to the differences in social systems. Due to this situation, the Philippines is mentioned as a possible candidate for consideration after China and the NIEs in the sense of future investment. The reasons for this are as follows:

1. R. Korea, Taiwan, Hong Kong, and Singapore cannot be expected to have surplus manpower over the long term. When doing business with these countries and regions, reduction of costs cannot be the primary goal.
2. Since the Philippines is an English speaking country, language problems would probably be smaller than in other ASEAN countries.

The above two reasons were obtained in a questionnaire survey and interviews with companies mentioning the Philippines as a possible business partner. Neither of them, however, is a positive one.

The 18 companies which responded that they would consider the Philippines may be divided into the following three groups:

1. Companies which selected it along with China, Taiwan, and R. Korea
2. Companies which selected it along with Singapore, Malaysia, Thailand, and Indonesia
3. Companies which mentioned almost all countries as possible candidates and mentioned the Philippines as one of them

That is,

1. Not even one company selected the Philippines alone.
2. Ten companies, over half, selected three or more countries other than the Philippines.
3. Companies which responded selecting numerous countries tended mostly to be companies with no experience in doing business with other Asian countries.

That is, no positive reason was seen for the selection of the Philippines as a site for study. The tendency was seen for the Philippines to appear as one of many countries selected at random.

There were three companies which limited the countries selected for study to the Philippines and one other country, but these were all ones with experience in business with Asian countries. Of these, one company had once considered investing in the Philippines, but had foregone it due to the instability of the political situation. It was aiming at contracting out mostly maintenance work obtained domestically and considered the low labor cost to be the primary condition for investment. The other company has already established joint ventures in China, R. Korea, Taiwan, and Hong Kong and is moving positively to increase its overseas production centers. The three companies had in common a desire for all sorts of information such as technical level, company profiles, transaction records, and prices. Looking at this from another viewpoint, this may be said to show a lack of information on companies in the Philippines despite interest in that country.

1-3 U.S. Market

(1) Hardware Environment

1) Classification of computers

Here, computers in the U.S. will be classified into general-purpose computers, work stations, and personal computers. Further, general-purpose computers will be classified into superlarge, large, medium, and small sized computers. In the U.S., superlarge computers include supercomputers, but these will be left out of the discussion due to their lack of relevance to the software industry of the Philippines.

2) General-purpose computers

There are about 1.65 million general-purpose computers, from large to small sized ones, in the U.S. (as of 1988), more than 4.8 times the 340,000 of Japan (as of September 1987). Of these, small sized computers accounted for 89 percent (93 percent in Japan). However, the number of shipments of general-purpose computers in the U.S. has been slow to grow due to the maturity of the market and companies' holding back on investment.

IBM holds a 67 percent share (in numbers of installations, 1988) of the market for superlarge computers and large sized computers. IBM holds a large market share for all models of general-purpose computers and sells them throughout the world. The seat reservation systems of airline companies and the increasing sophistication of the on-line systems of financial institutions previously prompted the introduction of superlarge computers and large sized computers, but right now the major users are shifting the emphasis in investment from large sized computers to work stations and other small sized models and are moving to reduce computer investment as a whole. In 1990, IBM and other manufacturers of superlarge general-purpose computers announced new models, but demand fell for a time due to suppression of purchases by users while there were actually being released for sale. There is a trend of an increase in the systems price of superlarge computers, but conversely a decrease in the price of large sized computers. This is a result of the greater performances being achieved at lower price.

Medium and small sized computers are being widely used by users. In particular, services and manufacturers of durable goods are major users, followed by the fields of education and government. These computers are mostly used for automation, control, and telecommunications. The markets for fault-tolerant computers for on-line processing, demand for which has been recently increasing, and computers for network servers are growing. In the future, new demand for medium and small sized computers will probably arise due to the spread of networks and software development. By model, high performance models such as the IBM AS400 series are being introduced.

3) Work stations

Work stations are high performance computers with multitask functions and network functions. In the past, these were used instead of small sized computers in the fields of scientific and technical computations and engineering. As mentioned earlier, work stations are being increasingly introduced by users due to their UNIX systems and large capacity hard disks. Also, companies have moved to develop RISC (reduced instruction set computer) machines with vastly improved processing speeds over the previous CISC (computer instruction set computer) machines. Such compact, high performance computers enjoy rapidly growing markets in not only CAD/CAM/CAE (computer aided design/manufacturing/ engineering) and CASE (computer-assisted software engineering) and further in the business field. In business, they are being used for DTP (desktop publishing), graphics, financial services, office automation, etc. which have previously been handled by personal computers. In the future, work stations will become further improved in performance and will probably come to be used in various other locations as a result. Further, software companies have been active with the development of applications software using UNIX as their operating systems.

4) Personal computers

Personal computers (PC) have grown rapidly up until now, but are now slowing in growth due to the maturation of the market. There are numerous manufacturers entering the PC market, making the market the most competitive in all computer models. IBM is maintaining number one position in both the number of shipments and number of installations, but its shares are falling. There is a shift in weight from 16-bit processor to 32-bit processor products. In the late 1990s, 32-bit PCs will probably be the mainstream in the market. In the future, the weight of replacement demand from 16-bit to 32-bit PCs will probably rise. This shift toward 32 bits not only means a faster processing speed, but also enables, through the use of OS/2 or UNIX operating systems, multitask functions and scientific and technical computations, which were not possible in MS-DOS environments. Further, looking at the shares of PCs by application, the share of PCs for hobby use has declined due to the appearance of video game machines, while the shares of PCs for business and scientific and technical use have grown. This trend will probably continue in the future due to the appearance of powerful 32-bit PCs.

5) Effects on software development

The business recession in the U.S. has resulted in hesitation in investing in systems and downsizing has appeared. These have had a major impact on software development. However, the increase in demand for work stations running on UNIX will cause increased demand for development of corresponding applications software. Further, the movement toward networking is also important. The number of distributed processing systems sharing resources through parallel connection of PCs and work stations using LAN (local area networks) etc. will probably also increase. Along with this, software will probably be developed with consideration given to not only for stand-alone environments but also networks. The Filipino software industry will have to be able to cope with these changes.

(2) Software Market

1) Market size

In the U.S., information processing services are classified into seven delivery modes. Information processing services include services other than software development. The industry as a whole has sales of US\$78 billion (1988). Note that of

this, software development is estimated to account for about US\$24 billion (U.S. Department of Commerce). The seven delivery modes are as follows:

1. Processing services
2. Professional services
3. Systems software development
4. Applications software development
5. Turnkey systems
6. Network service development
7. Systems integration

Table V-1-3 shows the sales for each delivery mode. Of these, the markets which Filipino software companies could enter would be mainly the fields of systems software and applications software and software development in professional services. Further, data entry companies could tap the market for data entry in processing services.

According to the U.S. Department of Commerce, the market for software development in the U.S. is worth US\$24 billion. This is more than 50 percent of the software market of the entire world, making the U.S. the largest market. According to the same material, the U.S. software industry is projected as continuing to maintain a high growth rate (10 to 18 percent) in the future. Also, according to a survey of INPUT, a leading research company, the markets for applications and systems software development are together worth US\$21 billion, while the market for software development included as part of professional services is worth an estimated little less than US\$9 billion.

Several surveys show that 2 to 4 percent of custom software, worth US\$100 to 200 million, is contracted out to overseas companies. However, it is possible that in multinational companies and the like, software development at overseas branches is considered internal development and not offshore development. Further, there are probably also imports of packaged software, so the actual value of imports is probably a little bit higher.

2) Size by hardware

It is possible to divide the market for software according to hardware (mainframes, mid-range computers, work stations, personal computers) (Table V-1-4). The market for mainframes has been growing slower than other markets. This is due to the effects of the business slowdown in the main users of mainframes, i.e., electric power and gas companies, airlines, and railroad companies. However, an annual growth rate of 7 percent has been maintained because strong innovation in the manufacturing and financial industries has supported demand in the market.

The market for medium and small sized computers is about the same size as the market for personal computers. The market is also balanced in terms of custom and packaged software and systems and applications software.

The market for work stations is currently the market with the highest growth rate. This is because, as already mentioned in the hardware section, work stations are being introduced in fields other than they have been used in the past, such as financing, software development, and publishing. In software development, software for work stations using UNIX operating systems and mounting RISC chips will probably be the market with the highest growth rate.

The market for personal computers is the largest in size in these four markets, accounting for 38 percent of the total. While the market is large in size, it is made up of

numerous models with short product lifetimes and low unit prices and is extremely competitive. In terms of overall size, however, it is considered that the market will continue growing in the future.

3) Size by type of sales

Next, analyzing the software market by type of sales, packaged software accounts for over 66 percent of the total sales (Table V-1-5). The market for packaged software for personal computer and work stations is twice the size of the market for software for mainframes and mid-range computers combined.

Custom software is maintaining a growth rate of 10 percent a year. While the market share of software for mainframes and mid-range computers is falling, it is still 35 percent. Software for personal computers and the high growth work stations accounts for only a very small share of the market.

Integrated systems software refers to the software sold by systems integrators or VARs which grade up their own packaged software or custom software to make complete systems. The share of this classification is the smallest of all, but the growth rate is high. The reason is that work stations, which are rapidly spreading, are mostly sold by VARs and are mostly sold as sets with software.

4) Current state and trends in software development

Here, software development will be divided into applications software and systems software. Most of the work received by software companies of the Philippines from the U.S. is for development of applications software.

a) Applications software

Looking at this by types of computers, applications previously used by mainframes have now become operable on 32-bit work stations. In the future, more applications processing will be handled by work stations. Mid-range computers will come to function as network servers or advanced telecommunication processors, while the upper class mainframes will come to be used for the processing requiring considerably high processing speeds and large capacity memory for accessing data bases and scientific and technical computations, where computers are concentratedly used.

By industry, it is projected that the applications software market will grow in the fields of telecommunications, wholesales, and retailing while growth will be slow in the fields of education and government due to the slow growth in the government budget. In terms of market size, financing is the largest, following by manufacturing and medical services. This order will probably not change for the next few years.

Some software markets (for word processors, spread sheets, general accounting) are already maturing and growth is leveling off. High growth rates are being shown by software development for CAI (computer assisted instruction) and other educational systems, CAD, CAM, CAE, and other engineering, scientific and technical fields, and systems integration.

b) Systems software

Systems software includes development tools, system management, and data center management. Among these, fast growth is being shown by development tools. This is due to the need for raising productivity and the need for development tools to provide assistance along with the increasingly complexity of software development.