Personnel Training in Japanese Companies in Indonesia

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DECLARATION

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree in any university; and that to the best of my knowledge it does not contain any material which is formerly published or written by any person except where due reference is mentioned in this text.

Canberra, August 1995

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Introduction

This thesis is written against the background of two major issues. The first is the fact that education is an important facilitator of technological change, which in turn is a major factor in sustaining the pace of economic development. The second issue is the fact that the pace of economic growth and structural change in Indonesia has been very impressive during the last 25 years, but that there are now concerns about how this pace may be sustained during the next 25 years.

The first issue is based on the realization that technological change is a more important force driving economic development than the rate of capital formation or the growth of the labour force. Abramovitz and Solow already stressed this idea in the 1950s. Although the idea was further discussed in the 1960s and used to analyze the growth performance of developed countries, it took time to be adopted as a factor in the analysis of the progress of developing countries.

A major complication was the elusiveness of the term "technology". As far as it was used to assess the economic performance of developing countries, it was discussed in terms of the difficulties engaged in the transfer of technology from the developed to the developing countries. But since the late 1970s the role and the process of developing technological capabilities in developing countries themselves has come into focus. The role of the work-force in the absorption, assimilation and creation of technology has become increasingly appreciated. This has shifted growing attention to the role of education and training, or the role of human capital formation, in the process of economic development.

The second backdrop of this thesis is Indonesia. Economic growth in Indonesia has been impressive during the last 25 years. But concerns are growing about how exactly to sustain that process in the near future. As in the general discussion about issues of economic development, education has become increasingly emphasized as a major factor to that end. The education record of Indonesia during the last 25 years has been equally impressive in terms of the growth of enrollment at all educational levels, and in terms of the high rates of primary school enrollment and literacy. But there are

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2 In a special issue of the American Economic Review, 56 (1966), J.R. Mayer, R.M. Solow and J. Baranson discussed technology transfer, problems of improving technological capabilities, technology and economic development in developing countries.
increasing doubts about whether these factors indeed are suffice to prepare the workforce for the generation of the required rate of technological change, in particular in industrial production.\(^5\)

Analyses of the Indonesian labour market indicate that despite the achievements in education, there are still major shortfalls in the supply of adequately trained graduates to meet the demands of private enterprise. Especially the awareness of the potentially availing role of vocational education and training has increased very much during recent years with the publication of two major reports on this issue by the World Bank and the International Labour Organization (ILO).\(^6\)

It is not that the Indonesian government is not aware of the issues involved. It is generally acknowledged that increasing capital-intensive industrial production will require human capabilities to utilize the new technologies involved. The Indonesian government has tried to reform its pre-employment education and training system to meet the needs for skilled labour, as the chapters 3 and 5 of this thesis will show. But the World Bank and ILO studies have indicated that there are still two major problems in the Indonesian labour market relating to training and education. The first problem is that of poor pre-employment education and training. This has been widely known for some time, but the extent and urgency of the issue still had to be spelled out. The second problem is that of an insufficient number of graduates with adequate skills for the higher positions in private enterprise, such as in engineering and management. The problem here is not necessarily one of poor education, but especially one of simple numbers. For instance, the number of university graduates in engineering is too low to meet the demand.

The World Bank and ILO studies have clearly indicated the limitations of government involvement in the development of adequate pre-employment vocational education and training programmes. Especially the ILO study sees in principle a solution in the form of a greater involvement of private enterprise in Indonesia in the design and financing of such programmes. In fact, as chapter 3 will indicate, the Indonesian government is preparing an overhaul of the vocational training system and has already called for the participation of private enterprise in vocational training.

While it is relatively easy to make suggestions along such lines, one has to acknowledge that there is little experience in Indonesia with private sector involvement in the development of pre-employment vocational education and training programmes. There is also very little fundamental research on this issue. As far as research results are publicly available, they suggest that most Indonesian companies are hardly giving any

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training at all. Private enterprise is still hardly interested in the issue, because the direct benefits are not always clear to entrepreneurs. Hence, it may be difficult to mobilize the resources of private enterprise for the design and establishment of adequate education and training programmes.

There is of course extensive international experience on company involvement in education and training. Chapter 1 will describe this. But such experience may not necessarily be directly relevant to Indonesia. Although the World Bank and ILO studies noted that most Indonesian companies do not provide training, research for this thesis has indicated that there is one major category of companies in Indonesia which does provide education and training to Indonesian employees: foreign joint-ventures operating in Indonesia. In fact, this group of enterprises may play an important role in generating technology in the first place, because most entail the transfer of technology from developed countries.\(^7\)

If the suggestion that employers should be involved in establishing vocational education and training facilities is to be taken seriously, it warrants a study of the actual experience and the actual situation at foreign companies or joint-ventures in Indonesia. As far as known, there are no major publicly available studies of this subject.\(^8\)

It goes without saying that this thesis cannot fill that gap. This thesis necessarily has only a limited scope, given the limited time available to study the subject, the author's unfamiliarity with the subject and the methodology, and given the fact that only three months were available for field work in Indonesia (September-November 1993, effectively two months due to illness).

The scope of this thesis includes 15 major Japanese companies and joint-ventures and 5 other companies in the Jabotabek area around Jakarta in Indonesia.\(^9\) The companies discussed in the thesis are mainly limited to the automotive and electronics industries and the banking sector. The two industrial sectors were chosen, because they require a relatively high technological level, in which the training of employees plays a major role. The banking sector was chosen, because it is one of the major formal service sectors and plays a pivotal role in the development process, as the relevant section in

\(^7\)Foreign direct investment in ASEAN has been described as the dominant channel of technology transfer and "the best way to ensure continued access to the desired kind and level of foreign technologies at the lowest possible cost". Yong, C.Y., R. Hirono and R.Y. Siy, Technology, Skills in ASEAN - An Overview. (Singapore: Institute of Southeast Asian Studies, 1986) p.82-85.

\(^8\)Thee has recently provided an overview of some of the relevant issues in the context of the general transfer of technology from Japan. He based his account of Japan's involvement in vocational training in Indonesia on a 1978 survey of 23 companies and a few later small or unpublished Japanese studies. Thee Kian Wie, "Technology Transfer from Japan to Indonesia", Paper Prepared for the Conference on the Transfer of Science and Technology, International Research Center for Japanese Studies, Kyoto, 4-6 November 1992.

\(^9\)See the appendix for a general description of the companies.
Chapter 4 will explain. Again, training of employees is a key element determining whether the banking sector will be up to playing that role.

The structure of this thesis is straightforward. Chapter 1 will discuss the experience of the United States, Germany and Japan with the involvement of private enterprise in pre-employment vocational education and training. Chapter 2 will briefly explain in-house vocational training and why in general terms such education and training is important to the advance of individual industrial enterprises.

The last three chapters discuss the case of Indonesia. Chapter 3 gives a brief description of the general situation in relation to education and training in the country. Chapter 4 presents the results from the interviews with key executives of the 20 companies. This chapter is necessarily largely descriptive. The last chapter seeks to draw some general impressions from the cases in the previous chapter on how company training has emerged and how a further integration of company training activities and the concerns of public institutions may be achieved.

This study has several obvious limitations. The main one is that the sample of companies in the survey is small. Moreover, the data obtained from the interviews were not always comparable. Although chapter 5 presents some generalizations, it remains difficult to draw very firm conclusions. Still, despite the limitations and despite the fact that there is ample opportunity for further research, this study provides a useful impression of the vocational education and training and especially of the company training provided by private enterprises in Indonesia.

A study like this one is not yet publicly available, although it can be of relevance to a range of institutions both inside and outside Indonesia. Inside Indonesia, because of the increasing awareness in the Indonesian government that the present system of pre-employment vocational education and training should be reformed, possibly with the closer cooperation of private enterprise. Outside Indonesia, because of the increasing awareness in foreign donor countries that their aid and assistance can play a relatively inexpensive, yet important role in guiding the process of technological change and meet the labour demands of foreign investors in Indonesia, and because of the possible involvement of foreign companies in the preparation of changes in the present Indonesian education and training system.10

10 Australia is for instance keenly interested in the issue of education and training in Indonesia, given its recent sponsorship of a major bilateral conference on this issue. The Australian (17-18 June 1994).
1. Development of Personnel Training System

1.1 Introduction

This chapter aims to examine how the burden of personnel training in selected countries is divided and distributed between several agencies that relate to work-force development. Training for the development of the industrial work-force is generally carried out by pre-employment formal educational institutions, vocational training institutions and companies. This chapter seeks to identify the factors which determine how training is shared and coordinated between these groups. In order to discuss this issue, I will begin with an examination of basic training systems in three developed countries, the United States, Germany and Japan. These three countries have formed quite different training systems and provide a basis for discussion. I will go on to examine factors which have contributed to the formation of different training systems and discuss possibilities for the co-ordination of burden sharing between training agencies in developing countries.

1.2.1 Vocational Training in the United States

The predominant characteristic of the American training system is that there are a number of pre-employment educational courses which direct graduates to specialize in a particular occupation. The gross enrollment ratio of tertiary education is 70%\(^{11}\) in the United States in 1990 and universities tend to play an important role in training people to be a part of the work-force. Many university courses are aimed at equipping graduates with the practical skills and knowledge required by industries. These courses include practical degrees such as construction management, hotel management, journalism, business administration, communication and broadcasting and so on. Business administration courses are often divided further to cover the key functions of a company, such as marketing, finance, human resource management, industrial psychology, etc.

At community colleges, two year courses are even more practical and target the local demand of neighboring communities.\(^{12}\) If students do not intend to continue study after high school, they are able to take vocational training courses at high school during the last three years. Companies give some on-the-job training and job rotation to adjust skills to differing conditions in each company. Practical courses at tertiary level often

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require or encourage students to do an internship for holidays as practical training and part of their job search.

In addition to these formal education programs, apprenticeship programs are also organized by states, cities and towns. The apprenticeship program includes 300 different occupations and participants are trained for 2 years mainly through on-the-job training. However unlike Europe, these type of apprenticeship programs are not very common in the United States. Furthermore most of the vocational training schemes and facilities have been established mainly for social security and equity reasons. They are coordinated to give the poor skills and jobs rather than to meet the needs of industries.13

In the United States skills and technical knowledge are overwhelmingly acquired at formal educational institutes such as high schools, community colleges and universities. Pre-employment education and training in the United States is aimed at guiding participants to choose a particular occupation. Although a number of vocational courses are available at formal education institutions, which meet the general needs of various industries, particular companies usually expect their employees to possess more than only such general skills and knowledge. Therefore, companies still train their employees to adjust their skills and knowledge to be usable for the specific purposes of individual companies. Nevertheless, it is still possible to argue that companies are usually far from taking a major role in the development of the work-force in the United States.

The main factors which have interacted with the American training system are:
(1) The percentage of the population which take secondary and tertiary education is comparatively high.
(2) Costly practical tertiary programs are marketable because course design is flexible and changed in accordance with the changes in the qualifications in demand. Student loans or financial support from governmental or non-governmental organizations have become increasingly accessible.14 Subsidies are given to vocational training programs at community colleges and vocational schools, so that small scale educational institutes can afford to run relatively costly practical courses.
(3) The increasingly mature nature of the relationship between industries and educational institutions has led to greater response on the part of educational institutions to the needs of industry. One particular contributing factor to the development of practical training programmes in pre-employment education may be the active mobility of professionals between industries and educational institutions.15

14OECD, Ibid. p.95-105.
15Northeast-Midwest Institute, op. cit., Chapter 6.
(4) Common corporate management style in the United States has also influenced the development of the training system, especially skill training. If a simple characterization of the common management system was to be made, it would illustrate work in a company as being divided into numerous jobs, with a clear job description and the development of sophisticated manuals for each position. Positions are priced according to the value decided by senior managing staff, with consideration to the supply and demand of such personnel in the labour market. Companies then recruit personnel with the qualifications closest to those required in each position. This management style makes it possible to replace personnel easily, particularly in those positions with less managing power and accountability. American pre-employment education does not place much emphasis on the development of skilled workers because most of the labour work in factories is processed into simple labour works and workers are single-skilled to manage each batch of work.

1.2.2 Vocational Training in Germany

Unlike the United States, Germany has a highly developed apprenticeship system in a number job categories. Students are divided into three groups at the end of 4 years of primary education. These three categories are: (1) Those who will take an apprenticeship program in a private company after 9 years of compulsory education; (2) Those who will go to vocational schools; (3) Those who will pursue tertiary education. In Germany the gross enrollment ratio of tertiary education is 26% and most of tertiary education curriculum is academic rather than practical. Private companies cooperate to organize apprenticeship programs to keep the quantity and the quality of work-force they need. The federal government established training standards in about 450 job categories, and the Chamber of Commerce and Chamber of Manufacturers supervise the procedures of apprenticeships.

In order to coordinate apprenticeship training in the private sector, the Vocational Training Law was enacted in 1969 and gives a systematic frame for vocational training activities in the private sector. The Employment Promotion Law was enacted in the same year to encourage easy access to information on training, finance for training and training facilities. Since 1976, the levy tax system has been practiced to secure appropriate training opportunities for youth.

The German vocational training system is heavily dependent on the voluntary efforts of private companies. The public sector plays the role of coordinator for all training activities. The purpose of the guidelines set down by the public sector is to

17UNDF, op. cit.
encourage offers of training and re-training programs to so that the work-force can meet
the changing needs of industries flexibly. Support for trainees is expected to make
trainees respond to changes in the qualifications in demand and take different training and
re-training programs.

The development of this German system is based on the following factors:
(1) German industries have historically had a strong trade guild system and this
facilitated the growth of apprenticeship programs. The programmes protected the guild’s
interests and maintained the quality of its products. The main purpose of the formation of
the apprenticeship scheme by industry was to ensure that member companies of each
industry can always secure enough personnel with certain skills and knowledge by
giving training cooperatively. This system is based on the reluctance of companies to
equip large numbers of their employees with firm-specific skills and knowledge because
their specialities leak out through personnel turn-overs. Companies tend to give firm
specific skills and knowledge to a limited number of employees but they also need much
larger numbers of employees who have general skills and knowledge in the industry. To
fulfil this need it is in their common interest to co operate with companies in the same
industry and pool the personnel with the general skill and knowledge which is useful for
all member companies and which is a prerequisite for acquiring firm specific skills and
knowledge.

(2) It is possible to roughly define what general skills and knowledge exist in each
industry because industries in Germany, particularly manufacturing industries, have been
well developed. The initial period of apprenticeship training with the company has meant
that the contents of curriculum can be modified to follow technological trends flexibly
and catch up with changes in 'general' skills and knowledge.

(3) In German vocational training programs, skills are taught in combination with
theoretical knowledge. As a result trainees develop not only a knowledge of work
procedures but also a general knowledge of logical problem-solving and rational
decision-making for their work place.

(4) Programs for re-training and a process of continual up-grading has been developed.
After the completion of an apprenticeship, workers have many opportunities to acquire
more skills and knowledge. Experienced personnel voluntarily expand on their existing
skills and qualifications to meet the qualifications needed by industries.

(5) Most importantly, skills and non-academic knowledge have a comparative high
standing in Germany. The development of a national skill standards and skill certificates
has meant that participants have the opportunity to exhibit the development of their skills
and as a result up-grade their status in society. The improvement of skills and knowledge
for use in industries is appropriately evaluated with a separate standard from that of
academic achievement. The improvement of one's skills and technical knowledge is reflected in the wage structure. Wage rises are normally negotiated by industry-based unions, ensuring that the value of approved technical competence is equally appreciated in each industry.

1.2.3 Vocational Training in Japan

The major actor in vocational training in Japan is the private sector. However, the nature of training in companies is quite different from that in Germany. Japanese companies invest in training to improve the quality of their employees, rather than trainees, and do so in order to meet the needs of individual companies. Most pre-employment educational institutions aim at educating students to know how to learn rather than to be able to do a specific job.\textsuperscript{18}

Compulsory education is for a period of 9 years, including elementary school and general junior high school. Most of the students who complete compulsory education go either to general senior high schools or vocational high schools. It is often said that many of these vocational high school students are students who have not done well enough to be able to take the option of entering general high schools. General high schools, both public and private, have unofficial but distinctive levels. There are also several public senior technical schools which combine high school education and polytechnic training into a 5 year program. These type of public schools were established to supply technicians when the country had a lack of technical personnel. Now the role of this type of school is diminishing. Other options for students include going to private technical schools or starting work as unskilled labour.

There is a strong correlation between which university a student attended, where the student will be given employment and how much he or she will be able to earn. There is considerable competition with almost 95\% of junior high school students going to high schools and striving to enter competitive universities.\textsuperscript{19} Unlike the United States most tertiary level education is rather academic and is not aimed at helping students to establish an occupation immediately. Companies train them mainly through in-house On the Job Training (OJT) and also offer Off-the-Job-Training (Off-JT) for a systematic understanding of their skills and their role in a production organization.

Japanese pre-employment education emphasizes general knowledge at the secondary level in conjunction with technical knowledge as well as a continued emphasis on general knowledge at the tertiary level. However, the government actually attempted

\textsuperscript{19}Odaka, K. \textit{Ajia no Jukuren (Skill Development in Asia)}, Tokyo, Institute of Developing Economics, 1989, Ch.1.
to transplant the German training system after World War II. The Labour Standard Law in 1947 was designed to promote in-house training and protect trainees from being exploited during their training period. In 1958 the first Vocational Training Law was enacted, which encouraged companies to give 3 years of practical training and lectures to junior high school graduates. This program was welcomed by many junior high school graduates because it offered them the opportunity to complete high school education at the same time. 76% the trainees who completed this training stayed with the company who trained them for 10 to 20 years. The amendment of the Vocational Training Law in 1969 was aimed at changing the main target of vocational training from junior high school students to senior high school graduates. This was because of the shortage of junior high school graduates as direct skilled labour as a result of the majority of junior high graduates remaining in the school system to continue studying at high school. In order to fund the in-house training, the government organized a special budget from employment insurance fees in 1974. Currently the rate of added premium for employment insurance is 3.5/1000 of the total payroll of each company. Since 1971, the number of employees taking apprenticeships in companies has drastically dropped off and most in-house training is now coordinated voluntarily in accordance with the needs of each company.

Current trends in the Japanese vocational training system tend to emphasize the production of 'trainable' personnel with technical knowledge but few practical or professional skills. Companies invest in the training of their own workers based on their own needs and it seems that companies do not find it their common interest to train personnel in common general skills or knowledge applicable for the industrial sector as a whole.

Factors which have led this dependence on private companies for training are:

1. As a result of the fast pace of industrialization after World War II, companies in Japan had to continually and quickly adopt and modify foreign technology, skills and professional knowledge. In order to keep up with trends, companies developed the required personnel internally because educational institutions could not catch up with the expansion of industrialization.

2. The government promoted the German style apprenticeship system which offers general skills and knowledge useful anywhere in the field but the industries in Japan were too immature to be able to define what these common general skills were.

3. There were not long-established industry associations like the German guilds which pursued their common interests. Companies in the same business field were

competitive and tended to poach quality workers from other companies rather than training workers cooperatively.

(4) When labour shortages were becoming serious labour unions, backed by the seller's labour market, became powerful enough to demand wage rises, welfare and job security. Companies tried to raise productivity per head by introducing automation and investing in the up-grade of employees to a multi-skilled level at the same time as they made efforts to meet demands from employees. This practice created the custom of life-long employment and in-company training.

(5) The Japanese type of in-house training system was developed in parallel with the development of the salary system. It is often said that life-long employment, the seniority pay system and enterprise-based labour unions are the three main characteristics of Japanese management. They are sometimes considered to be based on the peculiarities of Japanese culture but it is not entirely based on the Japanese 'large family' culture. Labour shortages in the process of industrialization led companies to try and keep their employees as long as possible. Personnel management was designed to pay more and a number of benefits were introduced. If the employee worked longer with a company and acquired more skills and experiences there. If a company assures life-long employment, the company must employ personnel with high potentials and continue to train and re-train personnel to meet the changing needs of the company. In order to motivate employees to further their education at work the performance of employees is certainly reflected in their wages. Common salary systems in Japanese companies are not entirely subject to seniority, but tend to encourage competition among employees in the long-term. In order to establish efficient and inexpensive in-house training, teamwork spirit, leadership and the instruction of subordinates are important criteria for promotion and compensation. Educating subordinates contributes to the possibility of an employee achieving eligibility for a salary increase.

1.3 Analysis

The examples above illustrate that different circumstances in the three countries have led to different ways of sharing the burden of training among the main involved institutions. The systems of these three countries have been developed over a long period and in all three countries the functions of major training institutions are complementary to some extent. The three cases above show that there are some influential factors in the formation

22Keizai Hyouron, Tokyo, February, 1993, p.44.
23Seniority appreciates experience in one company, rather than formal educational attainment, because job training largely consist of the accumulation of experience at the work place in the company.
24An annual wage difference between the capable and the marginal employees would be ¥1.5 million (A$20,000) for blue collar and ¥4 million (A$50,000) for white collar workers after about 20 years service.
of training systems. Differences in these factors have made major training institutions function differently. These factors can be summarized as follows:

1. processes of industrial development;
2. the extent to which the role of education diversified;
3. the value placed on human skills and knowledge in the society;
4. the extent to which the linkage between major training institutions is developed;
5. the management style common in the country or in the industry;
6. the nature and extent of policy support aimed at coordinating training institutions and agents;

However, none of them are problem-free examples. In the United States, educational programs are often developed as marketable services. Those who cannot afford the product tend to have quite limited opportunities to acquire the technical knowledge and skills in demand.

Two distinctive weak points of German system are: (1) It is difficult to keep reorganizing programs in fields such as the electronics industry, where technologies, material quality and market trends change very quickly. That is, it is difficult to define what skills and knowledge can be widely used in the industry and in what process skills and knowledge are accumulated and developed. (2) Apprenticeship opportunities can be subjected to the business perspective of each industry so that there is a mismatch between the number and categories of apprenticeship opportunities and those seeking young employees. As a counter measure for this problem, the Apprenticeship Opportunity Security Law in 1976 tried to ensure opportunities for training youths, despite the possibility of economic trends in the country going down and companies not feeling a need to train more people.25

The largest problem in the Japanese system is the negative influences of competition in career development. Training within companies of employees plays a major role and companies prefer training them in their own way. Skills and knowledge acquired outside tend not to be fully appreciated. Pre-employment education has become a place of competition for future career opportunities. Which company one works for crucially determines one's career development. After changing employment, the new employee has to compete again. All employees begin at the same starting position and what they learn, experience and achieve in the company are the main factors used to determine eligibility for promotion.

25A special training levy of 0.25% of the total payroll is collected from the companies whose annual payroll exceeds DM400,000, when the supply of apprenticeship opportunities by 12.5% less than the demand for apprenticeships.
1.4. Case of Developing Countries

The development of human resources has recently been given a high priority in policy planning for industrialization in the developing countries. Human resource development in the developing countries has a number of aspects, such as changes of fertility and mortality rates, hygiene and health, nutrition, education, employment and so forth. These aspects are often interwoven and interactive and it is difficult to examine a single aspect without considering the connections between all aspects. As upper or middle level developing countries have begun to diversify their industries, the need for a capable industrial work-force has become important and human resource management has become a major issue. Although it may miss some important aspects, the following discussion will concentrate on the development of an industrial work-force.

When governments of developing countries started to consider the development of the industrial work-force, the most common approach was the manpower requirement approach. This approach advocated the re-organization of pre-employment education and training based on predictions of how many personnel would be required for the industrialization of a country. However, this approach often resulted in a large mismatch between supply and demand of personnel in quality and quantity. This is most likely because:

1. It is difficult to obtain adequate data and forecast the process of industrialization in a developing country accurately.
2. It ignored the aspect of education cost. Even if it is possible to design the educational courses in line with industrialization forecasts, developing countries find it difficult to finance the changes required in the education and training system.
3. Once educational programs were established based on one prediction of the rate and nature of industrialization, pre-employment educational institutions and their programs tended to lose the flexibility to adjust themselves to changing labour market trends. Developing countries often fail to establish a monitoring agency to review the situation and obtain feedbacks.
4. This approach tends to put emphasis on the quantity of educated or trained personnel required and less emphasis on the quality aspect.26

In order to replace or complement the manpower requirement approach, the rate of return approach has become increasingly used in developing countries. The rate of return approach aimed to detect how effective investments in education would be in

comparison with alternative investments. It tried to examine what type of education would yield the highest return for investments in education and how investments and returns could be related to particular stages of economic development. Different rates of return on various educational levels were expected to guide the decision-making of individuals investing in education. This approach led to the following generalized pattern: "First, the rates of return to investment in education are usually higher than the alternative rates of physical capital. Second, returns to education are higher in countries at a lower stage of development, and with a narrower base of education. Third, returns to primary education are the highest among all educational levels. Finally, the private returns are in excess of social returns, especially at the university level". Based on this type of generalization, many developing countries have focused on the establishment of universal primary education. The prevalence of primary education contributes considerably to the improvement of literacy rates, health and hygiene.

Although there may a relationship between primary education and economic development, one does not cause the other. The combination of educational development and economic growth makes it difficult to measure how much of the economic growth has really come from the improvement of primary education. When everyone has primary education, it will no longer give high private returns. If a capable industrial work-force is important for industrialization and economic development, it is also important to understand how human competence has accumulated in the older work-force without any education. In addition, allocating most of a limited budget to the improvement of lower level education might cause an imbalance in the development of education and delay the improvement of higher education as well as various technical training programs.

Lately, education development is moving from planning based on the unreliable manpower forecasting to flexible coordination based on labour market analysis and an understanding of other related factors such as optional routes for skill acquisition. Educational programs are expected to be more responsive to the demand signals in the labour market and supply at least trainable personnel to meet any labour shortage in certain fields. The quality of education and training has started to receive more attention. It is now often suggested that reform in educational or vocational training curriculum is necessary. In most of the developing countries, the quality of teaching staff is far lower than in the developed countries. Educational programs are theoretical and

teaching methodology encourages mere memorization rather than practical application of theories, critical analysis, and problem-solving.

This movement can be considered as a positive move towards utilizing human resources practically and improving productivity. However, this approach might continue to have several problems if the coordination of education and training is too supplier-centered. The supplier of education and training, that is, the public agencies, are the major party to collect data, make decisions and implement policies. First of all, a system to identify the demand signals in the labour market has not been developed in most of the developing countries. Even if qualifications in demand can be clarified, it is not financially possible to reorganize educational and training programs in accordance with changing demands. Existing education and training resources like facilities and instructors must be up-graded to be able to flexibly respond to frequent changes.

The developing countries have strived to improve their education and training systems and they have enjoyed considerable progress in terms of quantity. However, a vertical and horizontal mismatch is often found between the human resources which educational and training institutions have created and that in demand by industries. In the developing countries, the supply side of education and training and the demand side of educated personnel, mainly the private sector, have not interacted or cooperated with each other to improve human resources in the industrial work-force. The involvement of the private sector in the development of the industrial work-force has become a recent topic of research.29 A better linkage between education & training suppliers and the private sector, as a user and re-trainer, is necessary to organize a more effective and efficient training system for the development of an industrial work-force.

As a next step, some of the factors which brought about different training systems in the developed countries will be examined in the context of the developing countries. It is of course not possible to generalize the situation in the developing countries, but the following discussion will try to consider some broadly applicable and feasible patterns of burden sharing of training activities.

(1) Processes of Industrial Development
Many industries in the developing countries are still inefficient and underdeveloped. They often lack capital, technology and qualified personnel to produce the same goods at the same cost as the developed countries. They also lack marketing capabilities and, as late-comers, find it difficult to access larger markets.

In order to encourage main industries, import-substitution policies have been used to reduce imports and supply previously imported goods from domestic industries. Developing countries started to control imports by banning imports of certain goods, fixing quotas, applying import tariffs, controlling foreign exchange, etc. However, it is costly to facilitate the development of several industries from almost nothing. Even if imports of several end-products decreased, imports of machinery and services continued to grow. Emphasis on the production of end-products also increased the imports of processed raw materials, intermediate products and services. Production of small quantities for small domestic markets was also costly.

Even though production cost and consumer price sometimes became much higher than in developed countries, domestic markets tended to be seller's markets because of heavy protection. Import-substitution industries could produce marginal quality products as long as they were sold and the higher production cost could be added to consumer prices. It is only when an industry involves itself in production for export, that quality and productivity become essential and that import restrictions, as well as local contents restrictions, can be loosened.

At a low stage of industrialization, companies in developing countries have no incentive to develop personnel, in quality and quantity, beyond the level required to maintain the current level of production capacity and quality. Only a limited number of exporting companies try to meet international standards, because product quality is not very competitive in a protected market. The development of one industry tends to depend on the gradual expansion of the small domestic market, companies tend to make use of what they have already. Their production facilities and procedures can be out-dated and quite often the capacities of machinery are not fully utilized because of poor maintenance, personnel and organization of production.

However, it might be a mistake to consider that companies in this stage of industrialization do not or could not contribute much to the development of human resources. This is because in most of the developing countries companies are major agents in the introduction of new technology and production processes. Foreign companies often play an important role in bringing new technologies, skills, production processes and business organization. Companies train personnel so that they can operate the facilities and manage routine works by themselves. This is an important first step to acquire the skills and experiences required to participate in further industrialization.

(2) Industrial Linkages
Linkages between both similar and different industries are generally weak in the developing countries. Furthermore the linkage between general education, vocational
training institutions and industries is not very strong either. The effects of weak industrial linkages to the development of vocational training systems are as follows:

(1) The gap between skills and technical knowledge taught in pre-employment education and those required in industries widens. For instance, in many developing countries, facilities and teaching methods at vocational training centers are out of date and the capacity of such centers is not fully utilized or is even sometime completely abandoned.

(2) The formation of burden-sharing for training is not encouraged between similar industries and pre-employment educational institutions and industries. For example, in Japan and Germany several re-training or upgrading programs have been established in both private and public educational institutions, when the need for more training in the existing work-force emerged. In order to meet training needs better, it is important not only to identify the areas of training needs but also to develop effective programs. It can be difficult to do so when communication between industries and educational institutions has not been established.

(3) When industries are more closely linked vertically and horizontally, personnel with relevant qualifications tends to change positions more frequently. This mobility occurs in the shape of the employee changing jobs voluntarily, personnel loans among group companies, personnel loans as part of training services between companies and mobilization between the education and training suppliers and the private sector. The linkage among the agencies related to the personnel development is still quite weak in developing countries.

(3) Diversification of Education and Training

In developing countries, the development and diversification of education and training depends a great deal on the public agencies. Developing countries allocate a relatively large portion of their scarce resources to human resource development, including education and training. However, finance is always the largest bottle-neck in flexibly coordinating education and training to meet the needs of industries. As seen in the case of the case of the United States, private educational institutions can contribute to the diversification of education and training programs if education and training can be a profitable business. In developing countries the market for education and training service is usually small and profitability is limited.

Before or during the process of industrialization, human skills and knowledge, especially manufacturing skills, are often underestimated. People tend to favour general and academic education. Practical and vocational education and training are often considered to have a lower status than general and academic education. The bias against technical education and training often discourages the development of technical personnel. Educational background is often a mere tool to achieving a higher status and
people tend not to appreciate practical skills. This situation discourages people from acquiring practical skills and knowledge. Developing countries generally have a shortage of technical personnel and the number of institutions for technical education and training is small. It is also costly to develop technical training institutions and difficult to increase the number of these institutions dramatically.

(4) Policy Support for Coordinating Training-Related Agents

In developing countries, even inter-departmental communication between public departments is not very efficient. In order to coordinate the efficient development of the industrial work-force, it is essential for the involved public agencies to cooperate. It seems that the participation of the private sector is now considered important in developing the work-force to meet qualifications in demand. In order to coordinate public agencies, pre-employment education and training institutions and the private sector, it is necessary to have a framework which can guide the involved institutions to the achievement of common goals.

In developing countries, pre-employment education and training institutions often have difficulties in catching up with the needs of industries in the process of industrialization. Public finance for personnel development is limited, which makes it difficult to monitor the training needs and flexibly coordinate training programs. The linkages between education and training institutions and industries are weak and personnel mobilization between them is little so that it is difficult for pre-employment training institutions to develop the personnel that industries need. It is also difficult to coordinate training courses as a business, because the market for such business cannot be very large at an early stage of industrialization. Therefore, it is not possible for the developing countries to establish the American type of training system in which various training programs develop at least the minimum of competence required for each occupation.

Under these circumstances, a better utilization of training resources in the private sector appears to be the best option for many of the developing countries. However, as suggested in the cases of Japan and Germany, the integration of training has progressed over a long period and the maturity of industries makes it possible for them to develop personnel. The examples of these two countries also show that the organisation of training in industries has interacted with personnel management systems, the social status of practitioners, policy guidance for training in industries, the historical development of industries and so on. One also should not misunderstand that the participation of companies in human resource development means that pre-employment education and training will be neglected. Participants of practical training should have basic skills and
knowledge to absorb further skills and knowledge from training in industries and make further progress on what has already been acquired.

The circumstances in developing countries are different from Germany and Japan so that it is not possible to copy the system totally. However, developing countries can learn several positive aspects from the use of private companies in work-force development. For instance, developing countries could learn the importance of combining theoretical understanding and technical skills.

In reality, foreign companies are active in bringing new technologies, skills and know-how into developing countries. In order to use training resources in the private sector in developing countries, especially in foreign companies or foreign joint ventures, pre-employment education and training should function to develop participants to be trainable in their fields of preference. At the same time, pre-employment training should continue to offer programs that lead directly to an occupation, because smaller companies cannot afford much training, while the self-employed need skills and managerial competence to start off with. The role of public organizations as coordinators will be essential for the formation of this burden-sharing of personnel development.

1.5 Conclusion

The development of the industrial work-force has become one of the major issues in the industrialization of developing countries. Developing countries have made efforts in coordinating their education and training institutions to meet the increasing needs of qualified personnel. However, supplier-centered reforms of education and training have often created a mismatch between the workers produced by pre-employment educational institutions and the needs of industries. Lately, the participation of the private sector, which used to be considered as a mere user, is expected to coordinate a more effective work-force training system in developing countries. This chapter has tried to identify the factors which affect the facilitation of the burden-sharing of training and considered the case of the developing countries. Further involvement of the private sector is surely important. Furthermore, what the contributions of the private sector can be and how their participation is encouraged should be considered. The next chapter will consider why company training is important and how the training activities of private companies can be encouraged.
2. Company Training and the Competence of Personnel

2.1 Introduction

The previous chapter stressed the necessity of integrating various training activities by different agents into a systematic training system in order to develop an industrial workforce effectively in developing countries. The previous chapter suggested that the participation of the private sector, especially private companies, will be effective. This is because in developing countries pre-employment education and training and the labour market are often incapable of supplying the personnel needed to meet the changeable needs of Industry during industrialization. As a result the mechanism of company training should be included as part of a national training system. This chapter will concentrate on company training. It will first explain why training is necessary or at least effective, no matter where the company is located. It will then show how personnel capabilities are acquired in a company. Finally, it will try to consider what can motivate and discourage company training. The development process of personnel capabilities and the incentives of training will be used to analyze several case studies of company training later in the study.

2.2 Company Training: Is it necessary?

In discussing the importance of company training, in whatever industry a company belongs to and wherever the company is, there are two key aspects to emphasize. One is that the nature of pre-employment education cannot and should not aim only to equip the future work-force with whatever Industry desires. The other is that applications of specific knowledge and skill relevant to industries or companies are beyond the capabilities of outside education and training agencies to implement. Companies must train personnel to understand the specific factors relevant to their needs. The following discussion will examine these two aspects in detail.

2.2.1 Nature of Education

(1) When the efficiency of pre-employment education and training is considered in terms of their possible contribution to economic performance, the educational programs of any country should include unpractical subjects in their curriculum and use satisfactory teaching methods. If the purpose of education is aimed at generating a capable industrial work-force, the ancient history of each country is an unpractical subject for those who become accountants in the future. If the pupils are expected to be computer engineers
whose task is to implement his or her original ideas as a programmer himself before anyone else does it, teaching methods which emphasize learning in groups rather than developing the problem-solving power of individuals is unsatisfactory. However, pre-employment educational institutions, especially public institutions, should have other obligations to fulfil other than the development of the industrial work-force.\(^{30}\) For example, pre-employment education should be expected to formulate individuals as members of a society and to preserve national culture and tradition.

(2) Education and training have to satisfy the expectations of participants. Participants are not necessarily striving to acquire what industries look for in their work-force. Pre-employment education can be considered a type of service to create inconcrete assets such as technical skills, knowledge, status and feelings of achievement in return for property and time invested by participants or their household's members. For instance, in developing countries, where the mass of people have little opportunity to study formally, a rigid co-relation still exists between educational background, and wages and status. In this case, where the graduate certificate of the individual is often held in higher regard than what he or she is actually able to do at work. Some students are studying only to achieve self-development as an achievement separate from their career development. What they would like to learn may have nothing to do the needs of the industries they work for. In order to meet such diverse expectations, education and training outside industries do not necessarily allocate their resources to satisfy the needs of the economy.

Private pre-employment education and training institutes might be able to meet the needs of industries better than public ones because they must coordinate courses to be marketable. Nevertheless, those institutions cannot be established if there is not a big enough market for their services. Furthermore, there is always a gap between what and when industries need certain skills and knowledge, and what and when these can be supplied by those institutions. This is the case, especially in many developing countries, because the linkage between industries and pre-career educational institutions is often quite weak.

(3) Education and training agencies should continue to produce personnel who have a broad and profound understanding of a range of subjects rather than allocating limited resources to educate a greater number of people to have specific practical skills and knowledge presently in demand. The personnel, who are involved with the production of goods and services in industries, often have the "knowledge of how to do things, although not necessarily knowledge of why thing work in the way they do".\(^{31}\) If industries expect their personnel to continuously improve products, production processes

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\(^{30}\)Umetani, S., "Future of In-House Training (Kigyoukai Kunren no Yukue)", in Ichikawa, S., Effect of Education (Kyouiku no Kouka), Tokyo, Toshindo, 1987

and work organizations, even the bottom level workers should know what knowledge and ideas are behind their work. Industries rely on highly trained people, including their own researchers, for new ideas and application of knowledge. If they wish to seek improvement in the future, it is crucial to maintain and foster people who understand why things work in the way they do.

2.2.2 Nature of Personnel Capabilities in Companies

A clear economic explanation of the capabilities of personnel in companies can be found in Becker's discussion of 'general' skills and 'firm specific' skills. He suggests that each firm needs 'general' personnel capabilities, which are commonly useful in any other company, and 'specific' capabilities which cannot be used outside the company. Companies are willing to invest in training employees to acquire 'specific' capabilities but not 'general' capabilities. However, it is also suggested that it is difficult to discern between 'specific' and 'general' capabilities and to offer the training which nurtures only 'specific' skills. In consequence, employees are trained to have 'general' and 'specific' capabilities in combination.

There is another possibility that should be considered. Those capabilities specific to a particular firm can often be capabilities that create advantages for the firm, which means that firms are reluctant to spread specific capabilities to a number of people and may even consciously try to pass on firm specific capabilities and know-how to only a small number of selected personnel.

An important point here is that companies have to develop personnel who have capabilities specific to their organization themselves within their own organizational structures. Specific skills and knowledge are acquired from training and experiences at an actual working site. According to Rosenberg, "productive activities always involve specialized kinds of knowledge, much of which may be unique to a specific industrial process." He continues, "there is typically a range of possible improvement that require intimate familiarity with the minutiae of the productive sequence." The personnel must be able to identify when an opportunity for improvement exists and they can only identify this if they have an understanding of why the present production process is in its present form and what possible problems exist within this form. Then, they must then be able to identify what changes will be most beneficial in which circumstance.

Specific personnel capabilities are formed by differences in product range, product facilities, product scale, desirable product cost, the number of personnel and so

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on. A company cannot simply produce whatever it likes, without taking into consideration the expense of production. A company has to utilize whatever limited resources it has to maximize its profit. The production processes of one company are virtually never identical to another. Therefore personnel capabilities specific to a particular firm can only be nurtured within a particular company and are a necessary factor of efficient production and planning of future production.34

Firm specific capabilities include not only what the personnel must be able to do but also the way they are expected to do it. Each company controls the application of capabilities. The different conditions of each firm makes the 'standardized' application of skills or knowledge inappropriate. Those who have not become used to applying acquired capabilities must learn variable applications to fulfil the task under particular conditions in each company. There are not many ways for new workers to learn firm technological or professional capabilities except learning by doing within the organization. Therefore, companies coordinate the way newcomers can efficiently acquire the specific capabilities and applications.

2.2.3 Conclusion

The above discussion of education and training outside industries and personnel capabilities in companies shows the following two characteristics. Firstly, it is hardly possible to modify pre-employment education and training only to prepare people as a capable work-force. Secondly, there are certain capabilities which only individual companies themselves can develop and maintain within the particular conditions of each company. It is not possible to concretely specify what personnel capabilities have to be developed by companies themselves. However, it is necessary for companies to have personnel who have the specific capabilities which enables them to continuously alter the production and administration system, in the search for maximum profit under the specific conditions of each company. Investment in personnel development is therefore likely to be necessary, or at least helpful for companies to acquire exactly what they need from their personnel.

34 The idea is this section is based on Hayek and Koike's argument about reaction to changes. Hayek, F.A., "The Use of Knowledge in Society", American Economic Review, 35 (1945) No.4, p.519-530, Koike, K. Skill Development in Japan and Asia, Chapter 1.
2.3 The Development of Personnel Capabilities in a Company

If technology is "everything pertaining to the transforming of inputs into outputs"\(^\text{35}\), or includes more than the physical process of transforming inputs into outputs but also "refers to the procedures and organizational arrangements for carrying out the transformation"\(^\text{36}\), a significant part of technology should be embodied in people. If "technology (also) includes the social organization of the production and labour processes", "knowledge plays a central role in changing inputs into outputs", and "the way in which inputs are transformed into outputs in particular enterprises is intimately influenced by events external to them"\(^\text{37}\), the technology embodied in people seems to be significant. It is people who organize production processes and organizations, create hardware and software to transform inputs into outputs, and implement measures to respond to influential external events to maintain profits. In addition, information transferred through the people with skills and technical knowledge is important for the formation of industrial linkages. The following section will describe what steps the development of skills training in companies consists of and will then go on to discuss methods of encouraging the acquisition of skills and knowledge within companies.

2.3.1 Levels

Usually the development of human resources, especially the development of technological capabilities, is discussed at the national level and the individual firm level.\(^\text{38}\) Here, only firm level will be considered because the purpose of this section is to consider the mechanism of company training.

The development process of personnel competency can be summarized as follows.\(^\text{39}\) Direct technological capabilities here refer to the capabilities required for direct


\(^{37}\) Fransman, M. op. cit. p.9


production. Indirect production capabilities refers to the capabilities necessary for administrative work for the utilization of technology. The development of sophisticated administrative capabilities, which involves the production of services, is described as the development of professional abilities.

(1) Direct technological capabilities
(a) operation capability: the capability to utilize machinery or information obtained from outside and produce the same products within another country.
(b) maintenance capability: the capability to maintain existing machinery or information
(c) adaptation capability: the capability to adjust and modify product design and functions to meet local needs and to re-arrange machinery to produce the goods with minor changes.

(2) Indirect technological capabilities
(d) creation capability: the capability to design new products and new production processes based on acquired technology, technical knowledge and information on markets
(e) investment capability: the capability to analyze the current economic situation, business trends in the industry the company belongs to in addition to the performance of the company, and then project investments in machinery, information and human resources if necessary.
(f) organizational capability: The capability to coordinate the company's human resources to utilize and develop the capabilities above. Besides, these, "firm-specific technological capabilities" sometimes includes marketing and service skills and know-how from market research, the opening up of new markets, advertising, coordination of repair shops, etc.

In the service industries, professional abilities consist of the following:

(1) Direct professional capabilities
(a) operational capability: capability to conduct assigned routine work without any assistance
(b) problem-solving capabilities; capability and knowledge to analyses uncommon problems and implement solutions to meet customers' needs.

(2) Indirect professional capabilities
(c) contriving capability: capability to improve processes and the quality of work continuously by collection and analysis of wider range related information, willingness to do better work than one is expected

(d) organizational capability: capability to flexibly change functions of individual employees, sub-originations, and structure of the organization in order to achieve goals of the organization in a changing business environment.

2.3.2 The Process of Learning

Studies around the learning process in companies started with the concept of learning by doing. Lundberg discussed 'the Horndal effect' which refers to the effect of repetition of certain work on the productivity of individuals and a collection of individuals. Lundberg’s study on the Swedish iron works, Horndel, showed that productivity of the company grew 2% annually without any new capital investment. From this study and others showing similar phenomena\textsuperscript{40}, it was suggested that “Learning is the product of experience. Learning can only take place through the attempt to solve a problem and therefore only takes place during activity”.\textsuperscript{41} The process of learning was shaped into a learning curve and management studies suggested that the learning process does not naturally occur but is the collective efforts of many people in an organization and improvement is possible as long as people are encouraged to seek for it.\textsuperscript{42} The study on repetition and learning suggests that the acquisition of technological capabilities will be complete only through the experience of exercising them in an actual working place. But, is repetition enough to upgrade capabilities from a level to another?

The study of technology transfer in South Korea\textsuperscript{43} shows that contacts with foreign sources was important for the development of technological capabilities. Important factors in the acquisition of technological capabilities in Korea included licensing under the leadership of the government, students and researchers educated abroad and the feedback from the export markets. One of a few industries in Korea which started operation with a dependence on foreign investments was the electronics industry. Samsung Electronics began its production with the support of American and Japanese joint ventures or technical assistance partners. In this case, again personal contacts with foreigners led to the development of personnel capabilities in the company. The personnel started to acquire capabilities through training offered by partner companies. The original Samsung employees were able to acquire not only technical skills for operation but also their partner’s quality control system as well as management know-how by On-the-Job


Training at partners companies. Since the company was requested to export 100% at first, satisfying the standard in foreign market took considerable efforts in the improvement of quality and curtailing production cost.\textsuperscript{44}

The example of a steel company (Usiminas) in Brazil shows that foreigners (Japanese in this case) did the required engineering and project management for the initial start-up. After this the Brazilian personnel absorbed capabilities by working closely with the foreigners as well as receiving extensive training, including training in Japan. After the foreign consortium withdrew, the personnel in the company were able to develop their skills in a process that responded to changes in business circumstances. The development of technological capabilities in the company is not from the mere accumulation of experiences but from efforts for further improvement.\textsuperscript{45}

The studies by Mody\textsuperscript{46} and Jaikumar\textsuperscript{47} show that the learning process occurred at a faster speed in the Japanese firms than the American firms in both the semiconductor industry and the machine tool industry. The studies indicate that higher productivity and faster price fall in Japan were due to investment in training in the company. They indicate that learning is not simply a by-product of production which is automatic and costless.

In discussion of this type of company study Bell stressed that more than a mere learning by doing is required for the development of technological capabilities. He argues that upgrading technological capabilities involves learning from processes of change coordinating a systematic feed-back system, training, hiring people who embody technology\textsuperscript{48} and searching further.\textsuperscript{49}

Bell's analysis of the learning process in companies and these empirical studies suggests three major factors that contribute to the development of personnel capabilities in companies. The first point is that learning occurs by contact between those who have particular capabilities and those who not have.\textsuperscript{50} Polanyi argued that there is tacit dimension in human skills which cannot be materialized or codified.\textsuperscript{51} It suggests that active personal contacts between those who transfer capabilities and those who receive are necessary. Joint ventures between companies with higher technological levels and

\textsuperscript{44} Kang, PK, Keizai Ronzo, Jan-Mar. 1993 Kyodai Keizaigaku Kai
\textsuperscript{45} Dhalman C.J., Ross-Larson, B. and L.E. Westphal, \textit{op.cit.} p.760-762
\textsuperscript{48} This seems to be based on Scoville's convection current, which means that skills and technology are simultaneously disseminated when people familiar with them move from one region to another, for instance, by migration. Scoville, W.C., "Minority Migration and the Diffusion of Technology", \textit{Journal of Economic History}, 11 (1951) No.4, p.347-360.
\textsuperscript{49} Bell, R.M., "Learning' and the Accumulation of Industrial Technological Capacity in Developing Countries", Fransman,M. and K. King, \textit{op. cit.} p.187-209
\textsuperscript{50} Koike, K., \textit{op.cit.}, p. 38.
those with lower levels encourage contacts between those who have particular capabilities and those who do not have them. Licensing, technical assistance and even the introduction of turn-key plants often includes certain human contacts such as attached training, maintenance and consultation. Hiring the personnel who embody technologies will increase opportunities for existing employees to have contact with those who have higher level capabilities and can pass on skills.

The second point is that training practice can make a significant change in skills acquisition in a company, even in companies in developed countries. However particularly in developing countries, where personnel tend to lack the capabilities even to operate routine production processes, it is necessary for companies to create the personnel they need. Although skills and technology will be diffused by observing and imitating, it is possible to induce more active learning by training.

The third point is that indigenous capabilities have improved through their own experience of observing problems or opportunities, planning changes and implementing them. This suggests that learners have to be given an opportunity to exercise more capabilities relatively independently in order to acquire capabilities step by step. When the personnel improves their capabilities, what the personnel originally had and what they have accumulated certainly matters.

2.3.3 Conclusion

It seems that these three points have particular relevance for developing countries. It seems that company training accelerates the pace of learning considerably and company training should involve contact between those who embody technological capabilities and the personnel in the developing countries. In order to upgrade capabilities, the personnel in developing countries must learn voluntarily by observing problems, formulating solutions and implementing them. Without this actual execution of capabilities, the acquisition of capabilities cannot be completed.

The three points also suggest important factors for coordinating an effective training system. Company training must offer frequent contacts between trainees and trainers. Trainees have to be supervised carefully so that trainers can offer trainees opportunities to exercise higher capabilities on time. The effect of training and personnel capability development will be considered further in the case studies of the companies in Indonesia in chapter 4.

52 Bell's previous study in Thailand suggests that training is not always effective. In the Thai a galvanizing plant, virtually no technical change occurred during 9 years, although engineers and technicians are trained on-the-job and sent to Japan for some months. This suggest that training has to be coordinated with other channels of companies to obtain technologies

53 Scoville, W.C., *op. cit.*
2.4 Incentives and Disincentives of Training

Section 2.2 showed that companies have to train their employees because there is no pre-education system or labour market which can supply the personnel with qualifications particular company. In addition, it showed that certain capabilities can be only acquired in a particular company.

Section 2.3 examined the development process of personnel capabilities in companies. It suggested that training would accelerate the progress of learning in companies. Two main points to promote learning are that human contact between those who have technological capabilities and those who not have them seem to be important. Those who have less technological capabilities have to execute the capabilities to completely acquire them. That is, they must be given more and more responsibilities in accordance with the progress of their personnel capabilities. As a preparation for company case studies later, this section will consider what will motivate companies to offer effective company training.

2.4.1 Motivation and Dismotivation for Training

Every training activity has two aspects: costs and investment. How much of costs or the necessary investment depends to whom and on what training is given. In both ways, training activities require expenditure to encourage learning which is something even not concrete. Then, what can motivate companies to train the personnel?

2.4.2 Necessary Conditions

In the experience of developed countries, opportunities for or the needs of training have been coming from the development of technology, skill shortage or a shortage of labour and competition creating needs to upgrade quality and productivity.

The relation between technological change and training needs is stressed by Warrer. This relation suggests that the flexible use of technology is required to meet more diversified needs and tastes, which makes production processes more complicated than they used to be. The diversification of products and the increasingly complicated production processes eliminate semi-skilled manufacturing work and create a need to train the personnel who systematically understand production processes as a whole, operate

and improve the complicated production processes according to the diversified needs of markets. Companies must train their employees to keep up with rapid technological changes.

The relation between a shortage of skills or inexpensive labour can be seen in the process of developing multi-skilled workers in Japan. A shortage of inexpensive skilled labour since the 1960s and soaring labour cost made companies introduce automation, while training a limited number of personnel to be multi-skilled. The word 'multi-skilled' does not mean that one does a number of jobs by the same methods. It means that one has to raise productivity per head by utilizing a number of sophisticated capital goods and producing different types of products. The changes in production processes, facilities as well as personnel deployment patterns have required companies to train the personnel.57

The fierce competition in markets encourages companies to invest in people. The investment induced by competition have two characteristics. Competition in the relatively standardized product category encourages training for maintenance of quality and cost-cutting. Training for quality control, waste management and efficient task allocation are important. The other is the investment in human creativity. Since the market needs to become more diversified, creativity is required to meet the needs. This type of investment is common in industries which have experienced rapid technological changes. For example, the training of researchers in the electronics companies seems to receive increasing attention.58

These motivations above all must include one more important incentive within themselves. As Mody suggested, investment in training is "motivated, among other things, by an expectation of demand expansion in the future"59. That is, because of the investment aspect of training, the implementation of training requires at least the expectation of markets. It is natural that training is conducted when it is needed and expected to be worthwhile. The degree of expectation will determine a company's enthusiasm about training activities. When this expectation is small, companies try to minimize their training in order to reduce the cost of training and eliminate low-return investment.

2.4.3 Sufficient Conditions

In addition to these factors, there are conditions which companies can control in order to ensure the return or value of the expenditure on training. Two major conditions are the

58Extensive training activities in two major Japanese companies were reported in Yoshimi, K. (NEC Corporation) "Human Resource Development by Holonic Management" and Hyodo, K."Corporate In-House Program for Toshiba Engineers", papers submitted to PECC S&T Task Force, Jakarta, 1992.
59Mody, A. op.cit. p.496.
way in which a company selects its personnel and how it manages the trained personnel afterwards. Companies must have trainable employees in order to maximize the gain from the investment or to assure the value of the training cost. After training, companies must try to retain the trained employees if they want to receive fair returns on the cost or keep receiving returns on their investment. In order to do so, companies have to control their remuneration system to retain them.

These two aspects are interacting with the development of a training system. If personnel management can support the training by recruiting trainable personnel and retaining them, an expansion of training would be possible. When training is underdeveloped or development is hampered by the lack of the expectation of future business, the two aspects of personnel management should be coordinated to recruit the ready-made experienced by arranging a wage scale.

2.4.4 Conclusion

This short discussion of the incentives and disincentives has pointed out the factors which to be later examined in the case studies later as possible incentives for company training practices in Japanese joint ventures in Indonesia. The incentives which directly encourage companies to offer training are: (1) technical changes to meet the diversified market needs; (2) shortage of labour; (3) quality and productivity consciousness because of competition in markets. They are all supported by the expectation of future markets for the company. For the case studies (Chapter 4), the business prospect will be considered first, in which market conditions such as market competition is included. Then, technical changes caused by diversification of products and production processes will be considered. Training activities are also interacting with the personnel management, so that selection and remuneration system of each company will be considered.

2.5. Conclusion

Chapter 2 discussed what company training is, since the training by companies could be an important measure in creating an efficient work-force in developing countries. The discussion of the nature of personnel capabilities suggest that certain training in company is necessary because the capabilities each company needs are company-specific in some ways. For the case studies in chapter 4, the process of the development of personnel capabilities is described and the positive effect of training on learning was explained. Possible motivations for company training are suggested, which include positive image of market, labour or skill shortages and diversification of products and production.

processes. As appropriate conditions for successful training, competitive recruiting and remuneration systems are suggested. The factors which possibly create training opportunities will be discussed in the case studies of company training in the Japanese companies in Indonesia in chapters 4 and 5.
3. Indonesia: Education and Training System

3.1 Introduction

Pre-employment education and training provides the foundation for further learning in actual work places. As such, it plays an important role in the development of the industrial work force. Pre-employment education and training provides the future work force with basic skills and knowledge, which is useful for the further accumulation of skills and knowledge in the work place. It also teaches workers how to seek improvement of skills and knowledge, in case they recognize the limit of their abilities in the work place. In addition, pre-employment education and training provide particular professional skills, such as in nursing and hairdressing, and also set the skill standards for such professions.

In developing countries, pre-employment personnel development programs often do not match the rate of industrialization, which causes a shortage of personnel with the required technological and managerial capabilities. This mismatch of supply and demand does not only affect the number of personnel in particular fields, but also the quality of personnel. Companies often expect that the supply of personnel with the required skills is better than it actually is, because they underestimate the impact of competitors on the supply of human resources. This chapter will examine the case of the Indonesian education system. The whole Indonesian education system has certainly improved during the last 30 years. However, this study seeks to consider the importance of actors on the demand side of the labour market in personnel development. This chapter will largely be limited to pre-employment education.

3.2 Pre-Employment Education and Training

Table 1 indicates that the general level of education of the Indonesian work force has increased steadily during the last two decades. The establishment of universal primary education has decreased the share of people without education and has encouraged people to pursue further education. For example, the introduction of universal primary education caused the considerable improvement of the literacy rate. Table 2 indicates that

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61 During industrialization, personnel shortages are often found in both production and management positions in corporations.
62 SD Inpres (Sekolah Dasar Instruksi Presiden) started in 1973. This program to boost the provision of primary education was largely financed with the increased public revenues from oil exports. The number of primary schools increased from 65,910 in 1973 to 146,558 in 1990. The number of pupils grew from 13.1 million to 26.5 million. M. Pangestu and M. Oey-Gardiner, Human Resource Development and Management in Indonesia. (Jakarta, CSIS, 1992) p.3-4.
the shares of young people enrolled in primary, secondary and tertiary education has also increased continuously, which implies that the educational attainment of people in the work force will continue to improve. It is expected that the implementation of State Law No.2 of 1989 will further increase the enrollment ratio at junior high schools and the continuation ratio from junior to senior high schools.63

Table 1 Completed Education Level of the Work-Force 1971-1989

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No School</td>
<td>93.0</td>
<td>29.5</td>
<td>21.3</td>
<td>15.8</td>
</tr>
<tr>
<td>Primary</td>
<td>58.8</td>
<td>61.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Secondary</td>
<td>4.1</td>
<td>5.2</td>
<td>7.2</td>
<td>9.0</td>
</tr>
<tr>
<td>Upper Secondary</td>
<td>2.4</td>
<td>5.8</td>
<td>8.8</td>
<td>10.7</td>
</tr>
<tr>
<td>Tertiary</td>
<td>0.4</td>
<td>0.8</td>
<td>0.9</td>
<td>1.1</td>
</tr>
</tbody>
</table>

*No education and primary school together.


Table 2 Enrollment ratio and Continuation of Education 1968/69-1991/92

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>68.7</td>
<td>78.8</td>
<td>122.3</td>
<td>113.8</td>
</tr>
<tr>
<td>Junior High</td>
<td>16.9</td>
<td>17.4</td>
<td>44.4</td>
<td>45.0</td>
</tr>
<tr>
<td>Senior High</td>
<td>8.6</td>
<td>9.3</td>
<td>26.1</td>
<td>33.7</td>
</tr>
<tr>
<td>Tertiary</td>
<td>1.6</td>
<td>1.9</td>
<td>5.3</td>
<td>8.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuation(%)*</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary-J. High</td>
<td>46.0</td>
<td>59.1</td>
<td>71.4</td>
<td>63.6</td>
</tr>
<tr>
<td>J.High-S. High</td>
<td>35.3</td>
<td>78.7</td>
<td>84.4</td>
<td>79.6</td>
</tr>
<tr>
<td>S. High-Tertiary</td>
<td>25.7</td>
<td>25.7</td>
<td>38.0</td>
<td>32.4</td>
</tr>
</tbody>
</table>

*The ratio of graduates who continue to study at a higher level

Source: Ministry of Information, Attachment to the President's Annual Speech to Parliament.

But despite these optimistic trends, there are still some major concerns in the education policies. One are the high drop-out rates, which for instance in primary education was still 28.2% in 1987.64 Another the regional variations in educational development, especially the differences between urban and rural areas.65

63 The law added three years of compulsory education at junior high school to the already compulsory six years of primary education. The law also abolished the vocational high school programs.
65 Composition of the Labour Force by Completed Education

<table>
<thead>
<tr>
<th>Education</th>
<th>1980</th>
<th>1985</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-school</td>
<td>Urban</td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>Primary</td>
<td>14.9</td>
<td>32.9</td>
<td>10.1</td>
</tr>
<tr>
<td>Lower Secondary</td>
<td>51.8</td>
<td>62.4</td>
<td>48.6</td>
</tr>
<tr>
<td>Upper Secondary</td>
<td>12.9</td>
<td>4.3</td>
<td>14.1</td>
</tr>
<tr>
<td>Tertiary</td>
<td>17.2</td>
<td>3.4</td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>3.4</td>
<td>0.3</td>
<td>2.7</td>
</tr>
</tbody>
</table>
A major source of concern is the quality of education and training. It may not be appropriate to assume that the positive trend in primary and secondary education will automatically generate higher enrollments in tertiary education and lead to a further improvement of the quality of the work-force. A major problem in many developing countries is the existing mismatch between the education and skills of graduates of pre-employment education at secondary and tertiary levels and the skills that are actually demanded by private companies. Table 3 suggests that a higher educational attainment does not necessarily improve employment opportunities, given that registered unemployment rates increase with education level and increased during the 1980s. However, this table does not take account of differences in underemployment between groups by educational level. Table 4 shows that underemployment is considerable among all these groups. The mismatch between supply and demand in the Indonesian labour market apparently concerns both the quantity and quality of labour.

Table 3  Unemployment by Educational Level 1971-1989

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary or lower</td>
<td>8.4</td>
<td>2.8</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Lower Secondary</td>
<td>25.5</td>
<td>4.1</td>
<td>11.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Upper Secondary</td>
<td>29.1</td>
<td>4.1</td>
<td>11.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Tertiary</td>
<td>25.6</td>
<td>4.1</td>
<td>11.6</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Source: See Table 1

Table 4  Unemployment and Underemployment by Education Level (%)

<table>
<thead>
<tr>
<th>Education</th>
<th>Urban Unemployed or Underemployed</th>
<th>Rural Unemployed or Underemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>No School</td>
<td>47</td>
<td>61</td>
</tr>
<tr>
<td>Some Primary</td>
<td>37</td>
<td>52</td>
</tr>
<tr>
<td>Primary</td>
<td>26</td>
<td>47</td>
</tr>
<tr>
<td>Junior High General</td>
<td>22</td>
<td>48</td>
</tr>
<tr>
<td>Junior High Vocational</td>
<td>23</td>
<td>43</td>
</tr>
<tr>
<td>Senior High General</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Senior High Vocational</td>
<td>28</td>
<td>45</td>
</tr>
<tr>
<td>Diploma I or II</td>
<td>42</td>
<td>57</td>
</tr>
<tr>
<td>Diploma III</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>University</td>
<td>19.6</td>
<td>37</td>
</tr>
</tbody>
</table>


Table 5 underlines the mismatch further. The expected additional demand for people with educational attainments at the level of senior high school and above was lower than the

Source: M. Pangestu and M. Oey-Gardiner, Human Resource Development and Management in Indonesia, Jakarta, CSIS, p.38.
expected additional supply in recent years. This table suggests that people with higher qualifications are likely to be employed in positions which require lower qualifications.

<table>
<thead>
<tr>
<th>Education</th>
<th>Supply</th>
<th>%</th>
<th>Demand</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-School</td>
<td>-</td>
<td>-</td>
<td>-390,0146</td>
<td>-33.8</td>
</tr>
<tr>
<td>Primary</td>
<td>7,674,800</td>
<td>45.2</td>
<td>9,348,250</td>
<td>60.9</td>
</tr>
<tr>
<td>Junior High</td>
<td>3,009,800</td>
<td>17.7</td>
<td>2,546,855</td>
<td>16.5</td>
</tr>
<tr>
<td>Senior High(G)</td>
<td>2,571,200</td>
<td>15.1</td>
<td>1,411,891</td>
<td>9.5</td>
</tr>
<tr>
<td>Senior High(V)</td>
<td>2,571,800</td>
<td>15.1</td>
<td>1,551,002</td>
<td>10.1</td>
</tr>
<tr>
<td>Diploma</td>
<td>465,000</td>
<td>2.7</td>
<td>343,662</td>
<td>2.2</td>
</tr>
<tr>
<td>University</td>
<td>689,900</td>
<td>4.1</td>
<td>173,220</td>
<td>1.1</td>
</tr>
</tbody>
</table>


There are at least three possible reasons for this vertical mismatch. Firstly, there is no obvious relation between completed educational levels and the required educational levels. Education does not serve to acquire appropriate employment, but to acquire employment in the first place, in particular in relatively well-paid positions which in general do not require a high level of education or training. In the recent past, the public sector and many state-owned companies absorbed large numbers of graduates from secondary and tertiary institutions, because of the rapid expansion of public services on the basis of oil revenues. However, the rate of absorption in this sector has decreased considerably in the 1980s, at a time when the absorption of graduates in the private sector increased. Private companies are likely to put more emphasis on the personal qualities of graduates, rather than on educational attainment only, in particular the suitability of graduates for further training. This may explain the increase in the mismatch during the 1980s and the growth in the unemployment rate among the better educated.

Secondly, the quality of education in Indonesia is variable, especially in tertiary education. People with nominally the same degree do not necessarily have the same skills. According to managers of the companies interviewed for this study, it is difficult to select enough high school graduates whose actual educational background qualifies them for further company training.

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66 For example, Pertamina still employs 23,203 people with a senior high school diploma, 8,015 with a junior high school diploma, as well as 6,932 with only primary school education, of a total of 47,057 employees. But the company now recruits only very capable people with tertiary qualifications for permanent positions and it offers systematic managerial training to these new employees. Vacancies in the lower ranks are now generally filled with contracted part-time workers.

67 All the companies interviewed for this study employed only high school graduates as factory workers. A study into the correlation between education and job levels found that the expected positions for (vocational) high school graduates was ‘skilled workers’. Hadiwartama, *Technical and Vocational Education in Indonesia*. Jakarta, 1982.

Thirdly, the growth of employment in manufacturing industry and the formal services sectors has not been high enough to absorb all graduates at the appropriate levels. Manufacturing accounts for only 8% of total employment in 1989-91. The share of all services sectors in total employment increased from 21% in 1965 to 38% in 1989-91, but most of the absorption of labour in this sector is due to the informal services. This is an additional explanation for the relatively high and growing level of unemployment among people with higher qualifications.

Apart from the vertical mismatch, there is also a clear horizontal mismatch in the Indonesian labour market. This mismatch reveals itself in the fact that the numbers of graduates with specific degrees at each educational level do not match the demand for graduates with such degrees. This is especially obvious in tertiary education. The industrialization process in Indonesia enhances the demand for especially engineers and technicians with higher degrees. But there are only 14 public universities, 20 polytechnics and a few private universities which provide either Sarjana-I or diploma programs in engineering and related subjects. 24% of the graduates and 29% of the students at these institutions were science majors in 1989. On the whole, students majoring in engineering are less than 5% of both graduates and students of all tertiary institutions. Those who major in subjects related to electronics form 4% of all students and less than 1% of all graduates. Hence, most graduates from tertiary institutions have not been trained in disciplines in demand by industrial companies.

A related aspect in this respect are the actual capabilities which pre-employment educational institutions in Indonesia are able to further. According to interviewees at the companies in this study, fresh engineering graduates hardly ever meet the specific requirements of the industries. Graduates often have to be retrained in engineering, because the curriculum at universities tends to focus on theoretical understanding and tends to neglect practical training.

A key issue in understanding the vertical and horizontal mismatch caused by inadequate education and training are the constrains on the public budget for education in Indonesia. Table 6 shows that public expenditure on education has been relatively low in Indonesia, compared to other Asian countries. Especially in the 1980s the availability of public funds for education was impeded by the fall in revenues from oil exports.

The lack of finance resulted in a shortage of proper teaching facilities and text books, and in a poor quality of instruction. The opportunities for upgrading the abilities

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70 Actually, the data in the tables 4 and 5 take insufficient account of the fact that the average number of unpaid family workers has also increased among highly educated people. M. Oey-Gardiner, "Education and Work in Indonesia's Economic Development" in The Impact of Education on Training and Work in Indonesia's Economic Development. (Jakarta, CSIS, 1991) p.59.
of instructors are limited, which means that teaching methods and measures of assessment remain ineffective. We will briefly summarize these three areas of educational shortcomings.  

Table 6  
**Government Expenditure on Education in Asia**, 1981-1990

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>7.9</td>
<td>9.4</td>
<td>8.5</td>
<td>10.0</td>
<td>8.4</td>
</tr>
<tr>
<td>Philippines</td>
<td>14.2</td>
<td>25.6</td>
<td>16.3</td>
<td>15.7</td>
<td>16.9</td>
</tr>
<tr>
<td>Thailand</td>
<td>19.3</td>
<td>19.9</td>
<td>19.5</td>
<td>19.3</td>
<td>20.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>19.1</td>
<td>21.6</td>
<td>21.6</td>
<td>14.4</td>
<td>18.1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>15.9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18.3(b)</td>
</tr>
<tr>
<td>Korea</td>
<td>17.9</td>
<td>20.5</td>
<td>18.1</td>
<td>19.6</td>
<td>22.4</td>
</tr>
</tbody>
</table>

* As percentage of total government expenditure.  

(1) Quality of Teachers  
The quality of teaching staff is a major bottleneck in the improvement of the quality of education. For instance, 86% of teachers at primary schools and 28% of teachers at junior high schools have completed only junior high school education. High schools and institutions for tertiary education also find it difficult to attract sufficient competent personnel and to prevent capable instructors from being lured to better-paying positions at private companies. Indeed, a major problem is that educational institutions are unable to compete with private companies on salaries for teachers and academics.  

Since the budget for public education and training is limited, the growing demand for secondary and tertiary education is to an increasing extent met by private institutions. A large part of the instructors at private educational institutions are only part-time. Most of them even never had any actual work experience in industrial companies. Even at tertiary level, many faculties employ people who have only completed training at teachers colleges. These factors explain why the subjects taught at high schools and universities are often remote from the skills required by private companies.

72 The main source used is M. Godfrey, "Quality of Schooling, Educational Achievement and Labour Market Outcome in Indonesia", in Education and Employment: What Can Planners Do? (Geneva, ILO-ARTEP, 1992) chapter 5. In order to solve the problem of mismatch, the government intends to make the national manpower plan, create a center for market signal analysis, reorganize the vocational training system and establish a national productivity center. (Jakarta Post, 23 November 1993)

73 Nearly half of the lower secondary institutions are private. The number of private upper secondary institutions is now larger than those in the public sector. In 1989 students enrolled at and graduates from private institutions for tertiary education (including diploma level courses) numbered 65% of the total number of students and graduates.
(2) Facilities
Despite the many years that education policy has been concentrated on primary education, the number of total schools is still insufficient throughout the country. There are schools which run two or even three courses per day to meet the obligation of universal primary education. Consequently, in the lower grades the length of the school day is sometimes not more than three hours. Less than 20% of the schools have a laboratory and library. Many junior high schools face similar problems.

The total number of high schools, in particular vocational high schools, and the number of places for students may have been adequate during recent years, largely because of the establishment of many private schools. However, high schools in general, but in particular vocational high schools often lack appropriate facilities for practical training programs. Moreover, existing facilities and equipments have often not been well maintained or upgraded.

(3) Curriculum and Teaching Methods
Largely because of the inadequate training of teaching staff and the lack of facilities and text books, there are still many primary schools with a poor quality methods of teaching. Such methods hardly encourage pupils to use their imagination, to develop skills helpful to solving problems, or to take initiatives. Teaching methods often stress the mere memorization of texts and other teaching materials. Examinations generally test whether material has been memorized, rather than the ability of pupils to solve problems.

The problem at higher levels of education is the curriculum is often too theoretical and less practical. This is not only a matter of inadequate facilities, outdated text books and teaching materials. Teachers at vocational high schools often lack work experience in companies, or have even themselves not received adequate practical training. This leads them to underestimate the relevance of such practical skills.

Moreover, the curriculum at many schools fails to keep up with the international rate of technological change, for instance in academia, more importantly with the rate of technological change in industrial companies in Indonesia. An additional problem is that staff and students at universities are not always conversant in English, which prevents them from keeping up-to-date with the international literature. Foreign text books are translated into Indonesian, but this is insufficient compensation. And although a wide variety of books is available in Indonesian, the cost of books is still a considerable hurdle in many cases.

74 The 1975 National Education Survey found that the government failed to provide technical high schools with a budget for such facilities and for training materials.
3.3 Development of Training outside Formal Education

In March 1992 the Department of Manpower had established 153 public vocational training centers in Indonesia; 33 large centers, 16 of medium size and 104 small centers. The centers had 3,194 instructors and 622 candidate instructors, who had not been trained in special courses for instructors. The centers offer seven main categories of training courses, which are listed in Table 7. The number of participants in courses was 50,000 in 1989/90 and was planned to double by 1994/95. Table 7 suggests that the scheme is on track to achieve that goal.

Table 7  Total Participants at Public Training Centers (1990/92-1991/92)

<table>
<thead>
<tr>
<th>Year</th>
<th>Machinery</th>
<th>Automobile</th>
<th>Electric</th>
<th>Construction</th>
<th>Commerce</th>
<th>Agriculture</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>6,329</td>
<td>8,963</td>
<td>8,796</td>
<td>7,560</td>
<td>2,769</td>
<td>20,620</td>
<td>20,620</td>
<td>75,657</td>
</tr>
<tr>
<td>1991-92</td>
<td>10,004</td>
<td>11,499</td>
<td>11,127</td>
<td>9,061</td>
<td>4,321</td>
<td>15,768</td>
<td>15,790</td>
<td>77,570</td>
</tr>
</tbody>
</table>

Source: Information from the Center for Vocational and Extension Service Training (CEVEST)

Of the total number of participants in 1991/92, 38,465 attended classes at the training centers, while 39,105 took courses provided through Mobile Training Units, which are vans with training facilities. It is often more convenient for participants to take lessons at such mobile units, rather than to commute to the training centers, which are generally situated in distant cities and towns.

Although the development of these training centers is a very encouraging improvement, the courses they run are often not adequate enough to teach participants the skills which workers and technicians at industrial enterprises require. The centers have encountered many problems. One is that potential participants and employers find it difficult to assess the skill level of the participants upon completion of the courses. The quality of the courses was found to be variable and the value of the diplomas issued by the centers was not immediately recognized by employers. Very recently a team at the Ministry of Manpower has developed a system of skill qualification standards, which may soon become a guideline for the standardization of the curriculum of courses at the training centers.

However, the major problem is again the lack of finance. One consequence is that the salaries which the centers can offer are not high enough to attract instructors who are adequately qualified and experienced. Most of the current trainers are graduates from vocational high schools, who followed additional training courses of between 4 months and 2 years. There are some university graduates, who followed additional courses of between 6 months and 1 year. The basic salary of instructors who graduated from a vocational high school and who had followed 2 years of additional training is approximately Rp.129,000 per month. This relatively low salary is the main reason why capable trainers soon move to private companies when they get the opportunity.
The centers also offer special courses to the staff of private companies, at the expense of interested companies. (Table 8)\textsuperscript{75} This helps to optimize the use of the facilities at the training centers and to alleviate the training needs of companies. However, because of the lack of facilities, the types of courses which the centers can provide are limited and do not always suit the requirements of companies.\textsuperscript{76}

### Table 8 Participants from companies at Public Training Centers (1990/91-91/92)

<table>
<thead>
<tr>
<th>Year</th>
<th>Machinery</th>
<th>Automobile</th>
<th>Electric</th>
<th>Construction</th>
<th>Commerce</th>
<th>Agriculture</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>3,930</td>
<td>4,006</td>
<td>2,389</td>
<td>1,277</td>
<td>3,264</td>
<td>1,428</td>
<td>2,139</td>
<td>18,433</td>
</tr>
<tr>
<td>1991-92</td>
<td>7,369</td>
<td>8,358</td>
<td>3,891</td>
<td>1,350</td>
<td>3603</td>
<td>1,100</td>
<td>1,910</td>
<td>27,581</td>
</tr>
</tbody>
</table>

Source: Information from The Center for Vocational and Extension Service Training (CEVEST)

The facilities at the training centers are often out-of-date and poorly maintained. Because of the lack of finance, the centers often depend on the financial assistance of foreign agencies for the improvement of facilities. On the whole, the public training centers in Indonesia receive financial assistance from multinational aid organizations, such as the World Bank and the International Labour Organization, as well as from several individual foreign countries. For instance, both the German and Japanese aid organizations support the upgrading of the instructors at the training centers.\textsuperscript{77}

The centers also suffer from inadequate processes of policy coordination. One of such problems is that many practical decisions are still made by senior officials, rather than officials at lower levels, who are more closely involved in the operation of vocational training activities. Another problem facing the training centers is caused by the more general issue of inadequate communication between institutions in Indonesia. Especially the linkage between the Department of Manpower, which supervises the training centers, the Department of Education, which supervises formal vocational education, and private enterprise is still weak. A National Training Council was established in 1984. This body is supposed to coordinate the contacts between the public institutions involved in education and training and private enterprise. But several interviewees suggested that the council is not functioning effectively. Hence, there does

\textsuperscript{75}There is a range of different courses, lasting from one week to 6 months, depending on the requirements of the companies. According to an interviewee at one of the centers, the cost per person for these courses is Rp.60,000 to Rp.70,000 for a 3-month course.

\textsuperscript{76}The centers have programs for basic skill training for the development of semi-skilled workers. The use of the centers by companies is limited to the training of workers at the level of operation or maintenance of factory facilities, such as air conditioners. Many of the companies which used the facilities offered by the public training centers were dissatisfied with the course contents and the results.

\textsuperscript{77}The German government supported the establishment of BLIB, which trains trainers. The Japanese aid agency JICA supported the establishment of CEVEST for the training of trainers from the centers and for the training of trainers especially for small industries. The aims of these centers go beyond the mere teaching of technical skills. Companies can turn to them for general support in the field of R&D and management. The German and Japanese aid agencies also run overseas practical training programs in Germany and Japan for selected Indonesians.
not appear to be a shared long-term vision on this form of human resource development among the involved institutions in Indonesia.\textsuperscript{7,8}

The lack of coordination has profound significance for the development of the skilled workers and technicians required by industrial companies in Indonesia. This is not only because of the often poor facilities and level of instruction, which means that the training centers can only offer courses at a basic level and some intermediate courses. The main problem is that the Department of Manpower has established the centers largely as an attempt to encourage self-employment and alleviate unemployment, not primarily to meet the demand for skilled labour by private companies.

3.4 Conclusion: Challenge for Improvement

The brief description above indicated that the lack of adequate financial resources and limited coordination between the involved institutions were at the basis of most of the problems experienced in the development of pre-employment education and training facilities in Indonesia. There are several initiatives to improve the situation and expand the facilities. This section will briefly describe the challenges which these initiatives face.

\textbf{(1) Improvement of Teaching Staff}

The main reason for the poor quality of instruction is the compensation system used in the public service. The salary of instructors at the training centers of the Department of Manpower is about half of that for comparable positions in private companies. This makes it difficult for the centers to retain instructors on a full-time basis, which is the main reason why the centers work with a large number of part-time teachers. Other public institutions face similar problems. One attempt to alleviate the situation is to pay a bonus per hour taught on top of the salary. Instructors at institutions of the Ministry of Education and Culture, for instance are subject to a comparable Credit Point System.\textsuperscript{7,9}

\textsuperscript{7,8}We have to acknowledge here that there are other training initiatives. Besides these training centers, the Ministry of Manpower has also established the National Production Center, which heads a network of branches, the Regional Productivity Development Centers (BPPD). The programs at these institutions are largely aimed at the management of companies, at the organization of production procedures. They seek to improve company productivity in all economic sectors, agriculture, manufacturing and services, in particular in small-scale enterprises. However, insufficient data were obtained to provide a detailed discussion of the impact of these institutions on the development of technical skills of workers. In addition, the Ministry of Industry is running the \textit{Balai Besar Industri} (BBI), which organizes training courses in production management skills and also in manufacturing skills. Private companies seem to prefer the services offered by the BBI. Again, lack of available data impedes a more extensive discussion. In addition, there seems to be a myriad of private training institutions. One source suggests that these amount to 5,000, with a capacity of 500,000 pupils per year. (\textit{Vocational Training and the Labour Market: Southeast Asia}. (Bangkok, ILO-ARTEP, 1993) p.29) Most likely this source used a very wide definition, which includes e.g. MBA-type programs, rather than only programs aimed at improving technical skills. Unfortunately, this lead could also not be pursued, for lack of readily available data.

\textsuperscript{7,9}This means that all instructors start their careers with points according to the level of their final education. After becoming instructors, points are added according to the hours of teaching, the training
There are also initiatives to upgrade the quality of instructors. New teachers at vocational high schools are now required to have completed the teacher training college (IKIP). Two specialized institutes, sponsored by the German and Japanese foreign aid agencies, have committed themselves to the training and retraining of instructors at the training centers of the Department of Manpower in courses of between 6 months and 2 years. Some agencies offer support to send Indonesian instructors overseas for further training. Moreover, a Polytechnic Education Development Center is teaching educational skills to graduates from polytechnics intent on becoming instructors. The resources available to improve the quality of instructors are still limited. However slow the improvements, initiatives are being pursued.

(2) Improvement of Facilities and Curriculum
Foreign aid agencies are also heavily involved in the improvement of training facilities, because of the lack of finance and specific know-how of Indonesian public institutions. For example, the Japanese aid agency JICA has planned financial assistance for the upgrading of 5 public training centers.

In another example, the Swiss aid agency has sponsored the establishment of a polytechnic as part of the Institut Teknologi Bandung. This Politeknik Mekanik Swiss uses its facilities not only to provide training courses, but also to produce and develop products. The polytechnic sells courses, products and consultancy services to private companies and uses the revenues to generate and develop further activities in the field of mechanical technology. This initiative has been followed by JICA and has led to the establishment of a similar polytechnic for electronics in Surabaya.

Although there are plans to improve the facilities at existing schools and training institutions, attempts in this direction seem to pale next to the initiatives raised by foreign agencies, which appear to address the needs of private companies more directly.

That is also a major problem in the coordination of the curriculums at public institutions for education and training. They hardly reflected the requirements of private enterprise. Again, there are initiative to address this issue. For instance, the World Bank sponsored a project in 1985 for the establishment of several Inter-University Centers aimed at the improvement of the curriculums, teaching materials, teaching methods and administrations at universities, including the technical universities.

Other examples are the establishment of a Vocational Education Development Center and the Polytechnic Education Development Center, which supervise curriculum programs followed, the contribution to the preparation of text books etc. The accumulated points determine the pay rises.

80CEVEST, the institute sponsored by the Japanese aid agency has relatively new facilities, such as computerized production machinery. Such technology is behind the most advanced technology available internationally, but comparable to similar machinery used in factories in Indonesia.
development, the upgrading and expansion of facilities, the education of teachers and instructors, and the establishment of linkages with private enterprise. Several Indonesian institutions, such as the labour union SPSI, the Chamber of Commerce and Industry KADIN and some universities, are involved in with these centers in the identification of the training requirements. The regional offices of the Ministry of Manpower and the Directorate of Manpower Planning and Information of the ministry are also monitoring the training requirements of private enterprise.

(3) New Trends in Personnel Development Programs
Apart from these ongoing improvements, several educational institutions have started to pay closer attention to other personnel requirements in private enterprise. One major recent change has been the establishment of a large number of MBA courses to alleviate shortages in management personnel at the middle levels. In 1991 7 public universities offered Diploma III courses in Business Administration and 2 offered Diploma II courses. Moreover, 25 private institutions had started MBA courses. Despite the laudability of the initiatives, the quality of the programs varied widely, despite more recent attempts by the Ministry of Education and Culture to regulate the institutions providing these courses.

Besides such MBA courses, private consultancy companies have started to offer a range of seminars and training programs. Private companies seem to prefer these services, rather than the services of the public training centers. There are several other examples to illustrate the point that new initiatives in personnel development programs are being pursued.

In conclusion, it is possible to say that the pre-employment education and training system has improved considerably compared to the situation only two decades ago. Moreover, the system is in constant change. Improvement continues and new initiatives are followed up. However, it is possible to argue that the scale of these changes is still insufficient in the face of the enormous challenge posed by the growth of the Indonesian labour force. The public budget for education and training is certainly insufficient to generate and improve the education and training facilities to produce the numbers of skilled and competent laborers which a more advanced industrial sector in Indonesia will require in the near future. One prediction suggests that 6.1 million new entrants in the labour market have to be trained, at a cost of $900 million.

In the face of the enormity of the issue, it is obvious that the institutions demanding the skilled labour should become more closely involved in the generation of

82Pangestu and Oey-Gardiner, op.cit., p.10-11.
83ILO-ARTEP, op. cit., p.33.
facilities providing the required training. Private companies have to participate more closely in the generation of pre-employment education and training and should contribute more to it as well. The following two chapters will discuss the practical sides of this issue in more detail. Chapter 4 will assess the actual situation related to training provided by a number of Japanese companies, which have been interviewed for this purpose. Chapter 5 will place the experience of these companies in a broader perspective. It will discuss for instance the integration of company training activities into the efforts to further the level of skills in the Indonesian industrial work-force in general.
4. Indonesia: Case Studies

4.1 Introduction

Chapter 3 discussed the pre-employment education and training system in Indonesia. The chapter indicated that there are several problems in this system, amongst others, caused by the lack of finance and interaction between the agencies related to personnel development, which explains why the system largely fails to supply personnel required by private enterprises in Indonesia. The importance of personnel development within industries has been recognized and more participation of the private sector has been called for. Chapter 5 will explain how and why foreign companies act as agencies of technology transfer and personnel development in Indonesia. This chapter will address the data obtained through interviews on the training practices of Japanese companies in Indonesia. The chapter will assess the cases from automotive and electronics industry (consumer electronics) and banking. Each of the three main sectors in this chapter will introduce the reader to the industry and the place of foreign companies in the industry, the type of training offered by the interviewed companies, and the incentives and disincentives which these companies have experienced in developing their training system.

4.2 Automotive Industry

4.2.1 Introduction

The development of automotive industries could be beneficial for the developing countries in several ways. First, production processes are complex and diversified, so that various technologies, skills and technical knowledge could be brought into the developing countries. The production processes range from basic manufacturing processes such as welding, machining and casting to specialized processes such as R&D of new materials for application and designing of new models. Second, the development of automotive industries is expected to induce an evolution of supporting industries. One car normally consists of 20,000 to 30,000 parts. The development of manufacturers of these parts and the sub-contracting of production processes are expected to generate additional employment and income opportunities. For instance, in Japan nearly 80% of parts are made and sub-assembled by sub-contractors and one-tenth of the country's total work-force is said to be directly or indirectly engaged in work related to automotive industry. In Thailand, the automotive industry with 400 parts companies created
employment for 1.2-1.3 million people. Services such as repairing, auto loans, insurance and leasing can be also developed. Third, the development of automotive industry would decrease a possible trade imbalance caused by importing CBU (completely built-up) vehicles and spare parts in a long term.

In Asia many developing countries emphasized the development of automotive industries. Japan and Korea have succeeded in becoming major exporters of automobiles and big three Japanese motorcycle companies (Honda, Yamaha and Suzuki) have a large market share in most of major motorcycle markets in the world. The Malaysian government also made considerable efforts to establish Proton\(^{[85]}\), a joint venture for automobile production between Malaysia and Japan. Malaysia exported some of their national car "Proton Saga" to New Zealand, Ireland, the United Kingdom and several south Asian countries. Thailand has also started to export some cars to North America. Thailand has the largest number of its parts companies in ASEAN and parts are also exported.\(^{[86]}\)

The development of automotive industries virtually started only 20 to 25 years ago in Indonesia. During the last two decades, a number of Japanese companies have established automotive-related companies and they have contributed to the development of technical capabilities of Indonesian automotive industry. The following is a brief overview of the development of automotive industry in Indonesia, which will be followed by an assessment of the training practices and personnel development in the Indonesian automotive industry.

4.2.2 Background

Although American and European companies established joint ventures for assembling cars since 1927, World War II and the stagnation of the economy under Sukarno severely retarded further development of the industry. Less than 2,000 vehicles were assembled in 1967.\(^{[87]}\) The government under Suharto started to revitalize the industry by introducing progressive import substitution policies from 1969.\(^{[88]}\) The policies banned the import of completely assembled cars, encouraged the import of CKD (knock-down) kits of commercial cars, and then promoted local sourcing of parts with the so-called

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85 Perusahaan Otomobil Nasional Sdn.Bhd.
86 For instance, the export of castings drastically increased from 120,000 ton in 1987 to 540,000 ton in 1992. Sakura Institute of Economics, RIM, 4,(1993)
87 Mihira, N. "Indonesia" in N. Mihira (ed.) The Automobile Industry in Developing Countries (Hattentojokukan Jidoushasangyou), Tokyo, Institute of Developing Economics, 1980.
88 About 20,000 vehicles were imported at that moment.
deletion list. The deletion list was announced in 1976 for commercial cars and the deletion list for motorcycles in 1977.

The Japanese automotive companies have responded quickly to these policies and have increased their market share in Indonesia since 1970. Major Indonesian-Japanese joint ventures currently hold more than 90% of the market of both automobile (Table 1) and motorcycles. While most of European and American companies, except Mercedes Benz, limited their activities to assembling CKD kits of passenger cars, eight Japanese joint ventures built factories or installed new facilities for manufacturing engines in the mid 1980s and some key components. Three major Japanese joint venture motorcycle are the only manufacturers which established engine and components factories to meet the deletion list.

Table 1  Market Share of Automobile Industry 1990

<table>
<thead>
<tr>
<th>Business Group</th>
<th>Commercial Vehicle</th>
<th>Passenger Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Toyota</td>
</tr>
<tr>
<td>Astra</td>
<td>Toyota</td>
<td>28.2</td>
</tr>
<tr>
<td></td>
<td>Daihatsu</td>
<td>24.3</td>
</tr>
<tr>
<td></td>
<td>Isuzu</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>Nissan Diesel</td>
<td>1.7</td>
</tr>
<tr>
<td>Group Total</td>
<td></td>
<td>56.6</td>
</tr>
<tr>
<td>Indo Mobile</td>
<td>Suzuki</td>
<td>22.9</td>
</tr>
<tr>
<td></td>
<td>Hino</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Nissan</td>
<td>-</td>
</tr>
<tr>
<td>Group Total</td>
<td></td>
<td>20.7</td>
</tr>
<tr>
<td>Kurama Yudha</td>
<td>Mitsubishi</td>
<td>25.4</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Imora</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Total</td>
<td>Japanese Total</td>
<td>98.0</td>
</tr>
</tbody>
</table>


Following the establishment of automotive assembling companies, several supporting industries started production in Indonesia in the 1970s and 1980s. Technical assistance to local supporting industries has been promoted by major Japanese assemblers. It seems to be difficult to reduce the import of parts from Japan dramatically, although the recent appreciation of the Japanese Yen seems to make Indonesian subsidiaries consider the improvement of local sourcing.

Japanese joint ventures have played an important role in the development of the automotive industry in Indonesia. Considering the lack of up-to-date production technology 20 years ago, one of the significant contributions of the joint ventures has

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Assembly companies are required to delete the parts listed from imported CKD kits, which means that the assembly companies either produce the parts themselves or purchase from parts companies in Indonesia. A number of local parts companies were in fact foreign(Japanese) joint ventures which were requested to come to Indonesia by the assembly companies.
been the development of personnel capabilities, especially technological capabilities, through technology transfer. Currently more than 20,000 Indonesians are employed in the Japanese automotive companies. Since automation tends to dominate changes in the automotive industry, technology transfer in this field is often considered in terms of the introduction of capital goods. However, automation does not necessarily mean that there is no need of for human labour. Any production process still requires human skills and capabilities to plan and organize facilities, procedures and to maintain the production facilities. Companies in developing countries do not just replace human labour with automation because it can be more cost-effective to use human labour. Human skills and knowledge for capital or technology intensive production should not be overlooked. In the following, three issues will be discusses relating to personnel development in the automotive industry: (1) how local personnel are trained to absorb more recent technology; (2) what motivates or discourages training activities in the companies; (3) the contribution of training in companies to the development of the industrial work-force in Indonesia. The third issue will be considered together with two other case studies at the end of the chapter.

The companies interviewed for this case study are all Japanese joint ventures and include two automobile companies (Companies A and B), one motorcycle company (Company C) and one tire company( Company D). Examples from the motorcycle company and the tire company are used to show variable motivations and dismotivations for personnel development within the automotive industries. Motorcycle production and automobile production were both import-substitution productions which require similar technologies. Between these two, the difference of marketing targets leads to different business perspectives and different attitudes towards personnel development issues. The tire company is one of the supporting industries which followed the assemblers.

4.2.3 Training Practice: Common Characteristics

All companies consider it necessary to train their Indonesian employees in order to maintain the current production standard and catch up with model changes or new production processes brought in from Japan. They all introduced the parent company's training practices in Indonesia. Training programs in these four companies have a similar structure to those in Japan. They all offer (1) Introductory Training, (2) In-house On-the-Job Training (OJT) and Off-the-Job (Off-JT), (3) Overseas Training.

(1) Introductory Training

Introductory Training is first of all offered to make new workers aware what it means to work in an organized large scale production system. This type of training starts with
discipline programs, such as explaining work rules in the company and promoting the awareness of safety and quality of work. All the companies realize that many of the Indonesian employees, especially new factory workers, are not ready to take part in large-scale and complex production processes, even though some of them have taken skill training before. Therefore, these companies usually start their training by telling them to come to a production line on time and explaining what would happen if a line starts late.

Secondly, newcomers have to be equipped with the skills and knowledge which are required in the particular section they will join. Introductory training in each company includes a few days or a week basic OJT training before new staff are allocated to a position.

Additionally, newcomers who are expected to be managers are given opportunities to observe or experience entire production or administration processes. It seems important for newcomers to be informed about what is happening in the production site and how functions of sub-organization, such as divisions or sections, are interacting to form a company. Newcomers are expected to realize how their future work will contribute to the organization. For instance, the interviewee from Automobile Company A said that even university-trained engineers must join the introductory training and experience work at the different production lines.

(2) OJT and Off-JT in Indonesia

All companies put great emphasis on OJT, which is expected to encourages transfer of skills and knowledge by personal contacts between senior and junior employees. In order to follow the parent company's style, the companies have made efforts to develop managers first and then encourage them to pass on technical knowledge and skills to their juniors. In the case of these companies in Indonesia, transfer of human skills and knowledge is expected to occur between the Japanese expatriates and the Indonesian managing members first and then from the local managing members to their juniors. Training programs are, though, still heavily concentrated on the development of technical production (engineering and manufacturing) skills required in production rather than managerial skill development.

In all companies Japanese expatriates still supervise the production lines to support local managing staff. Besides the daily OJT at the work places, Indonesian staff also receives OJT from instructors sent from Japan for specific training purposes. These Japanese experts are mostly sent to conduct OJT for the introduction of new models or new production processes. It seems that fostering subordinates is not considered to be a duty of managers in Indonesia. Recently the companies started to realize the need of training Indonesian managers and supervisors to be trainers of their subordinates.
In-house seminars or training seminars outside the company are used to complement OJT. All companies use Off-JT, according to the needs in each department. As part of Off-JT, these companies support employees to take some personal development courses outside the company.

In Automobile Company A, a total of 4,014 employees were trained in-house or Off-JT training programs between 1989 and 1992. Training cost has been increasing and the training budget for 1993 was almost four times that in 1989.\(^{90}\) In the tire company D, every year nearly all workers take some sort of coordinated training programs in Indonesia.\(^{91}\)

(3) Overseas Training
Both OJT and Off-JT in the parent companies are common in all the companies. Most of the overseas training participants are selected technical staff. They are expected to acquire the required technical skills and knowledge as well as managerial skills to coordinate production processes and administration. Training in Japan is also considered as an incentive for Indonesian employees.

Usually there are three types of training in Japan. One is sporadic up-grading to improve specific skills when new models of products or new production processes are introduced. Another is to improve technical knowledge and skills in general for the future development of the company in Indonesia. The Indonesian technical personnel still lack the abilities to maintain the current standard of production and to modify the organization of production. Lastly, overseas training courses are organized in cooperation with Japanese government organizations. Major training programs include AOTS (the Association for Overseas Technical Scholarship)\(^{92}\) and Overseas Vocational Training Association's programs. These training programs offer not only practical skill training but also Japanese language lessons and lectures for cultural understanding.

Automobile Company A has spent Rp. 9,758 million for overseas training of Indonesian staff, which includes OJT for basic skills and specifics skills, and Intra Company Transfer Program\(^{93}\). Its employees are also sent to several other training programs like AOTS. OJT in Japan and skill-upgrading programs are coordinated to equip trainees with basic production skills and practices such as KAIZEN (Continuous Production Improvement) and Quality Improvement, and to deepen particular skills and knowledge when necessary. Intra Company Transfer, the longest overseas training

\(^{90}\)Training budget in Indonesia was Rp.134.5 million and the plan for 1993 was Rp. 483 million.
\(^{91}\)In 1991 1,000 out of some 1,200 employees followed more than one training program.
\(^{92}\)AOTS has accepted 6,662 Indonesian trainees between 1959 and 1992. Half of them were from Indonesian-Japanese joint venture companies. A number of participants were trained in textiles, industrial machinery, automotive technology and electronics.
\(^{93}\)The Indonesians are loaned to a parent company for 1 to 2 years.
program of Automobile Company A, includes all types of fundamental engineering skills training. In this program participants are actually working in six different factories as employee of the parent company.

Automobile Company B has sent more than 50 Indonesians to Japan for training in the parent company and to AOTS. It has sent most of its overseas training participants to sporadic skill-up training as well. The company considers that operation and maintenance capabilities still have to be upgraded. Since automation has not replaced human labour as much as in Japan, skill-up of workers is crucial for maintaining product quality. Maintenance is still a problem to overcome and the company sent a few employees for 2 years of maintenance training in its parent company.

Motorcycle Company C has sent over 40 employees to Japan for 6 months training. This company also sends 3-4 employees annually to AOTS program. Additional overseas training programs for a few weeks are also coordinated according to training needs. After four companies merged into the current company, there still was a shortage of personnel in the areas such as quality control, production technology and information systems as well as human resource management. Overseas training is therefore used to develop the qualifications in demand. The length of training in Japan varies by purpose from a few weeks to six months. Those who took 6 months training are expected to become core personnel in production.

In Tire Company D, 7 to 8 employees are sent to Japan annually for two to four weeks training. Company D has established its own systematic domestic training system, but overseas training still has a very important role for up-grading skills and technical knowledge of Indonesian employees. It also provides the employees incentives to improve production processes and product quality. The company considered that OJT in the better production system and organization in Japan helps the its Indonesian employees to improve the situation in the subsidiary in Indonesia. However, high turnovers of personnel after overseas training is still a problem for the company.

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94Welding, stamping, assembly, assembly production improvement, mechanics and local content management.

95In order to foster Indonesian automotive companies, foreign companies used to be prohibited to establish an assembly plant and a general agency which imports CKD kits and markets assembled cars. Foreign companies established plants for stamping, welding and manufacturing engines and parts. Recently, major automotive companies started to merge separated companies into one company for more efficient business operation. The government seems to accept it for the further development of the industry. Mihira, N. and Y. Sato (eds.), Industrialization of Indonesia (Full-set Kogyoka no Yukue), Tokyo, Institute of Developing Economies, 1992, p.356-357. The level of technological capabilities varies between the former 100% local assembly plants and the foreign-joint-venture plants. In order to keep the standard of foreign joint venture plants, the newly merged companies consider it necessary to recruit qualified personnel and train existing personnel.
(4) Quality Control Practice

In addition to these training programs, all companies have introduced their quality control programs to Indonesia. Employees form several QC groups and organize QC meetings. As an incentive to promote QC activities, a few teams are often sent to Japan to join a QC competition organized by each parent company. QC activities differ from one company to another but Indonesian employees are said to be quite enthusiastic about making progress by themselves.

Company B holds a QC contest every year and sends its best team to the competition in Japan. The Indonesian staff in Company B are active in QC and are good at presenting results. Company D has introduced the QC program from its parent company and invites QC specialists to promote the activities. QC activities in the interviewed companies draw the attention of Indonesians employees to the issue of continuous improvement of production.

(5) Conclusion

All companies consider training of new employees and further development of the Indonesian personnel to be important. All four companies have developed a training system during the last two decades. Basically, the companies are trying to implement the parent company's training practices in Indonesia. At present, the four companies have quite similar training practices, which are concentrated on technical skill development and the encouragement of on-the-job training through personal contacts.

Operational and maintenance capabilities have not been fully developed yet in many fields of their activities. The Indonesians are capable of making minor modifications of product design and production process. For up-grading the local personnel as a whole, overseas training in Japan or instruction by Japanese expatriates play an important role. Not only managerial personnel or engineers but also technicians and semi-skilled workers are given opportunities to be trained in Japan by OJT. The technical expatriates have been extensively supporting the production in the factories. The training practices of Japanese companies are often criticized for delaying delegation of authority to Indonesian staff. However, in the automotive industry, which requires complex production process and various skills and technologies, 20 years might be too short to judge the result of this form of technology transfer. Personnel capabilities, especially technical capabilities, have definitely improved. Mechanics of the automotive industry are said to be better than those in Japan. The Indonesian engineers and

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96Significantly, in Japan quality circle activities are carried out after office hours and over-time allowance is not paid. In Indonesia, participants of QC are paid over-time allowance.
97Long-term planning such as the introduction of new models and product design (outside and inside vehicles) are done by the parent company and the Japanese expatriates in Indonesia. In order to modify products and product process, the Indonesian staff often needs support and advice from the Japanese advisors.
technicians in Company A have surprised the Japanese staff by developing a high standard design for model change.98

4.2.4 Training Practice: Differences and Different Incentives

The design of the training systems in the four companies has similar characteristics, but the types of skill development programs which companies emphasize and their interest in training differ. The following possible incentives will be considered in this section; (1) business perspectives; (2) diversification of products and amount produced; (3) labour supply will be considered.99

(1) Business Perspective and Training Practice

According to the interviews with the four companies, training of Indonesian employees is promoted when companies expand their markets, especially when entering international markets. The examples of the four companies in Indonesia show that training programs have been coordinated in line with the marketing strategies of the companies. Naturally, when a company started not to depend on the protected domestic markets in Indonesia and to explore export markets, it began paying more attention to training for upgrading personnel capabilities. Low technological standard and productivity tend to be overlooked when companies are supplying only to the protected domestic markets in Indonesia. However, quality and productivity have to be improved in order to produce competitively in the international markets.

The example of Tire Company D shows that training practices are enhanced because it has confidence in the company in Indonesia. Since the late 1980s, the company's quality control activities have advanced considerably. The company's quality control depends on both computerized checking system and skilled workers examination. The current defect rate in 1/1000 but the company aims to up-grade it to 1/1 million, which is the standard in Japan. The company keeps receiving visits of QC experts from Japan for the further improvement of defect rates. The company also established its training section in 1991. Basic training procedures and manuals were brought from its Thai factories. Training programs by job level have been reorganized so that each employee takes intensive up-grading training once about five years in accordance with his progress in terms of technical skills.

Major reasons for the recent development of training practices and the necessity of up-grading personnel are (1) competition in the domestic market and (2) its expansion of

99Concerning possible incentives, see the section 2.4.
export markets. Since the tire industry is a supporting industry for both automobile and motorcycle industries, its domestic market was subject to the growth of production in the assembly companies. Domestic markets of cars and motorcycles are growing, but the production capacities of all tire companies in Indonesian are far exceeding the demands. Since major competitors\textsuperscript{100} have a similar level of production technology and a comparable range of products, competition in order to maintain the market share is quite fierce. This domestic market situation is considered one of the major reasons for the company's consciousness about quality and productivity. The competition in the small domestic market is also one of the drives which urged the company to explore export markets.

The company recently announced that it would increase its exports from the current 25% of total production to 50% within a few years. Production size itself will increase to employ another 300 employees. This expansion is partially from the small domestic market but mainly due to more company specific reasons. Most of conventional tires made in Japan are losing competitiveness because of high production costs, stemming especially from high labour cost in Japan. Because of low labour cost and land price in Indonesia, the product price is about 30% lower. It means, however, that the products from Indonesia have to have a quality acceptable in the export markets, which are currently supplied from Japan. The company's subsidiary in Thailand is not big enough to supply the Thai domestic market. Moreover, it has less attractive conditions for expansion such as less space and higher labour costs. The company does not produce tires for motorcycles. Production growth will, therefore, depend on the growth of car production, which will be steady but not high enough to utilize present production facilities effectively. Therefore, the company seems to have decided to relocate production facilities from Japan to Indonesia and train its Indonesian personnel to achieve the desired export quality.

Motorcycle Company C has been making efforts to formulate systematic training programs after four companies merged into the current body for more efficient business operations. Its introductory training aims to promote the progress of new personnel during an 11 month period. After the merger, the present company also started to send more workers and supervisors to Japan for training. Those who have been trained overseas now lead in each production group. The company is planning to recruit more 'trainable' personnel as manager candidates and to coordinate practical managerial skill training. The company established an applied R&D section recently for modifying designs and production processes, as well as the coordination of procurement. Recruitment and training of R&D personnel is a key issue for the company. In addition,

\textsuperscript{100}Company D is the largest automobile tire company. One of the major competitors is owned by a large local business group and the other is an American company.
the company is considering to support the further development of local supporting industries so that it can conduct more efficient procurement management.

The efforts of the motorcycle company to develop for its personnel coincide with competition in existing markets. The company also expects to expand its market both domestically and within ASEAN. The domestic market for motorcycles was about 311,000 in 1986, 414,700 in 1989. It was expected to be 550,000 in 1993. It is said that the sales of motorcycles drastically increase when a country's GDP per capita reaches some US$1,000, which means that Indonesia and the other ASEAN countries are a quite promising market. Currently, the company produces about 160,000 units a year but it aims to produce over one million units during the next five years. Since four companies recently merged into the company, the company has to train and standardize the quality of personnel in order to keep up with competition.

Company C has already entered export markets and increased them gradually. It used to export only some components and parts, which are about 3% of total production. Last year the company finally started to export end-products. The amount of exports is still, small but the company seems to be willing to explore new possibilities. It has started to export to Greece (2,000 units a year) and Vietnam, and sent samples to Cambodia and Philippines. The reasons are firm-specific in this case. Because of the rapid appreciation of Yen, the company is considering a more efficient and profitable division of labour between the parent company and its subsidiaries. In ASEAN, the company has minority interest in a factory in Malaysia. It plans to develop the Indonesian factory to become a major production site in ASEAN. The recent merger of assembling and engine/parts companies and the establishment of a marketing company suggest that the parent company places high priority on the development of this subsidiary.

Unlike these two companies, expansion and competition in the domestic market for automobile industry are less visible than those for the above examples. The main strategy of the two automobile companies is to incorporate the Indonesian factories into a frame of regional division of labour within Asia. However, this strategy has been disturbed by Indonesian government policies.

101 The figures are from my interviews.
102 There are two other major Japanese joint ventures which the company competes with. The largest one produces about 300,000 and the other around 100,000.
103 The two automobile companies in this study have joined the Brand-to-Brand Complementation scheme in AFTA. Only Indonesia keeps refusing to join it and still pursues full-set development of its automobile industry. This scheme allows the companies to exchange components with very low tariffs or without tariff between each company's subsidiaries in the ASEAN countries. The parts produced in ASEAN will be considered 'locally produced' in the local content regulations. Japanese car companies have made considerable efforts for the establishment of the scheme in order to utilize their overseas subsidiaries more efficiently. Company A is planning to produce diesel engines, stamping parts and electric parts, such as car air-conditioner in Thailand, steering gear and electric parts in Malaysia, transmissions in Philippines and engines and stamping parts in Indonesia. Company B has a plant for transmissions in Philippines, stamping parts in Malaysia and engines in Indonesia.
Company A has made efforts to make the production of parts in larger areas than ASEAN complementary. It started the production of cylinder blocks, which are not on the deletion list, for exports to Japan. Casting plants in Indonesia and Thailand are expected to export products not only to ASEAN countries but also Japan, North America and Australia. 70% of personnel in the casting plant have been trained in Japan and the quality of products is quite high. The capacity of the present factories can be 50% higher if production processes and facilities are improved and mechanics are trained more. However, there is no market to absorb final products. Therefore, the growth of sales and production would be subject to how the parts complementation project will progress.

Automotive Company B also considers more efficient use of existing investments in the region. The company is the first one that joined Brand-to-Brand Complementation scheme. The company considers that more automation followed by further training is a crucial factor for producing quality automobiles. Another important factor is that procurement of parts is inefficient because of restrictions on imports and because of disturbing bureaucratic inefficiency. At this moment the company withholds reinvestments in automation and personnel, because of uncertainty about the future market.\textsuperscript{104}

(2) Diversification of Products and Training Practice

The automobile companies and the motorcycle company produce several components, including engines according to the deletion list. Because of a large technological gap between these foreign companies and the local ones, Companies A, B and C started to produce many types of components and parts internally. Whenever they introduced new components and production processes for components, the necessary training was provided.

Both automobile companies produce several types of commercial and passenger cars. Since around 90% of passenger car components are imported, production of them is subjected to model changes of the parent company. As model changes are so frequent in Japan, the Indonesian employees have to be re-trained to each time when a new model comes to Indonesia. Diversification of products by parts production and passenger car assembling seems to create a need for sporadic training programs only.

Motorcycle Company C produces a limited number of models, which meet the requirements of the deletion list. Training for the production of diversified products and parts occurs for the same reason as the automobile companies. However, as the company is becoming a major production site in ASEAN, serving more markets could lead to diversifying products and promoting further training.

\textsuperscript{104}A source said that the market will be 350,000 by 1995, but that the company produces only one-third of what it expected. It would withdraw and export from Japan if the government reduces import tariffs on completely assembled motor vehicles.
Tire Company D is currently producing conventional tires. Its product designs have not diversified yet. This is because similar commercial cars occupy over 70% of the domestic market and the variety of designs or functions of such cars are limited. When exports start to grow, the situation might change. More training needs might be created in administrative sections, because of administrative processes related to exporting.

These four companies indicate that diversification of products and production processes is a major reason for offering relatively short and intensive skill upgrading training. At this moment, they have little need to respond to changing production processes frequently because the range of products is limited. Most of the workers are trained to do a single job. The Indonesian employees have been learning from experiences gradually but they are still not capable enough to plan the introduction of new models or designs as well as modify production processes. Immature production skills and knowledge is one reason. Another reason can be a lack of multi-skilled personnel, who can see how batches of procedures are interwoven into a production organization and how they interact when a change happens somewhere in the organization. Rotation and training, which make employees more aware of the interaction between their work and that of others, will be important to improve the capabilities of Indonesian personnel.

(3) Labour Shortage and Training Practice
None of the four companies considers it difficult to employ new factory workers. They all pay the wage which, including several allowances, is nearly twice the minimum wage. However, as Automobile Company A suggested, it is not easy to recruit 'trainable' factory workers. Company A has started to train its capable personnel to be able to manage at least two tasks in order to make the best use of its capable workers. In other companies factory workers tend to be single-skilled.

A shortage of qualified workers is found among the middle level managers, technical engineers, and computer-related personnel. This is because of a mismatch between supply from pre-employment education and demands from the highly capital intensive industry. Companies are training personnel to fill the shortages. At the same time, they are competing in poaching the experienced personnel. Since none of the four companies has established systematic training processes for candidate managers, they often recruit middle or senior managers from outside. Otherwise, they depend on the support of Japanese managers.

In order to meet the shortage of technical engineers and computer-related staff, companies have started considering to employ lower qualified personnel, train them in each company's way and provide reasonable compensation. Since all four companies have endured job-hopping of university graduates after extensive training, they now target academy or polytechnic graduates and train them to be core employees in the
company. It is difficult to say that a shortage of highly qualified personnel is a large incentive to training, but at least in these four cases, the way to recruit and train personnel has somehow changed because of the shortages of relatively highly qualified personnel.

(4) Conclusion
The examples above examined three major categories of incentives for providing training to the Indonesian personnel. Motorcycle Company C and Tire Company D are more enthusiastically developing systematic training practices for their personnel, mainly because of the expansion into promising markets. In contrast, the two automobile companies have been developing their personnel to be prepared for a future regional complementation strategy and an increase in the export of components. Their domestic market does not show a very positive perspective. They have difficulties exploring export markets as well. Since they think that they have finished capital investments in the region for the complementation scheme, they maintain a wait-and-see policy before making further efforts to upgrade facilities and training.

4.2.5 Sufficient Conditions for Training

Besides the three major incentives discussed above, there are some factors which should be considered to make training worthwhile. The possible sufficient conditions for efficient training are as follows: (1) Trainees are capable enough to absorb what they are taught and utilize it; (2) The company's compensation system can control its turn-over rate to receive returns from the investment in training; (3) Training labour force is more cost-effective than any other option, such as the introduction of automation.

Since pre-employment education and training have not been developed enough, a lack of the ability to absorb technical skills and knowledge from training is a common problem in developing countries. In Asia job-hopping after training seems to be a large hindrance to the improvement of training in companies. In order to avoid these problems, the four companies have modified the personnel management system in the parent company to suit the situation in Indonesia. In the following, the efforts of companies to meet conditions (1) and (2) will be considered. Concerning condition (3), it seems that introduction of automation is often considered in terms of the improvement of quality and the maintenance of stable quality, rather than of cost-effectiveness.

(1) Recruitment
Automobile Company A has two criteria of recruitment: staff level and worker level. Staff refers to candidate managers in the administrative departments and professionals, such as engineers and managers in production. Company A recruits only graduates from
general and vocational high-school as new factory workers. It recruits polytechnic and university graduates as future engineers and managers. The company finds it difficult to recruit university graduates, because of its location and relatively low salary in the manufacturing industry. In order to keep trainable employees, especially technical staff, the Indonesian partner loans personnel to this automobile company. Still, the high turnover rate of university and polytechnic graduates of around 20% is disturbing the investment in training.

Company A is offering many types of scholarships to maintain good relations with some pre-employment educational institutions. It also opens its facilities for practical training of several pre-employment educational institutions. Equipment for training, such as recent models of engines, are often donated to these institutions as well.

The situation in Automobile Company B is quite similar. The company is very selective about factory workers. The problem is also recruiting trainable engineers or candidate managers from universities and polytechnics. The company has developed many high school graduates to be managers during last two decades. However, the company considers it necessary to have better qualified personnel and develop it in the company in order to improve its production and management. This company pointed at the same reasons as Company A to explain the difficulty.

Company B often opens its facilities to several educational and training institutions for the practical training of students. The Indonesian Human Resources Manager of the company considers it more practical and less risky to employ those who were introduced by the Indonesian partner, the Ministry of Manpower, the Ministry of Industry or BKPM (Badan Koordinasi Penanaman Modal).

Motorcycle Company C also has two personnel categories: staff and workers. This worker level consists of level 1 and level 2. Level 1 personnel are expected to be promoted faster than the other. For direct labour in the factory the company only recruits high school graduates. It does not find any problem to recruit workers. A major problem for this company is also to recruit candidate managers, technical staff and professionals, such as system engineers. Job-hopping of these highly demanded people is also a problem. The company also seeks highly qualified research personnel for its future R&D projects.

In order to improve the situation, the company started to develop close connections with several educational institutions. At this moment the company offers 10 scholarships annually to two major science universities. Since the company has been developing ATV (vehicles for agricultural production), joint research with Bogor Agricultural University is very important.

Tire Company D employs both junior high school graduates and senior high school graduates. The ratio of high school graduates in total personnel is some 80%. The
company also categorizes their personnel into staff and workers. Since the company has experienced difficulties in employing university graduates and keeping them, it recruits more polytechnic graduates to be developed for managerial positions.\textsuperscript{105} The company is willing to employ some Indonesian personnel with Japanese education. Production engineers' positions are occupied by polytechnic graduates and vocational high school graduates. The company opened its facilities to several universities for practical training recently.

\textbf{(2) Compensation System}

The companies suffer from high turn-over rates of personnel after training. The automotive joint-ventures introduced compensation systems which emphasized seniority when they started to operate in Indonesia. However, the compensation system based on seniority has been modified to be more suitable to the conditions in Indonesia, as far as these four companies are concerned. The main change is that the companies now put more emphasis on performance and achievement rather than seniority or diligence. This section describes the efforts to maintain personnel after training.

Automobile Company A has reorganized its human resource management system, when it was founded by four different companies in 1989. In order to reduce the high turn-over rate among highly qualified personnel, the personnel appraisal and promotion system was recently revised to be more performance oriented, although the company still considers age and length of service of employees as factors for compensation and promotion.

The company has 12 job levels and new employees are given different starting levels in accordance with their educational background. The standardized promotion process shows that the following factors are considered to arrange one's promotion: (1) organization need; (2) employee capability or potentiality; (3) performance evaluation; (4) service year in class. The salary gap between levels is quite wide after the 4th level. The rate of pay rise is now between minimum 9.5\% to 17.5\% (within the same grade), depending on performance. When a person continuously achieves high results, he or she can be promoted nearly twice as fast as others. But, those who have achieved only an average performance can be promoted to some extent because of the company's "Life-long Employment"\textsuperscript{106} spirit.

Besides the salary scale by job level, the company offers the position allowance which comes with each job title, such as "group leader" or "section manager". There are also special allowances for computer programmers and for some workers who are

\textsuperscript{105} The factory in Thailand has some 70 employees with BA degrees, but there are only 8 BAs in Indonesia in a factory of the same size of factory.

\textsuperscript{106} Tenure is given all the full-time workers from workers to managers.
engaged in dangerous work. The personnel at section manager level or above are provided with a company car and a driver.\textsuperscript{107}

Automobile Company B usually has a performance appraisal once a year and employees are promoted once a year. There are two types of promotions. One is promotion of job grade and the other is promotion of position. There are over 20 positions and 16 job grades. In this company promotion goes by both seniority and merit. Therefore, a person can be promoted in job grade according to the length of service, even if his position did not change. But it takes relatively a long time to be promoted in positions. It takes at least 10 years for an academy graduate to become a supervisor. The system was based more on seniority before. Because of the low wage for young capable employees, job-hopping occurred very frequently. The company researched the wage system of other automotive companies, and changed the system in 1991 to be more performance-oriented.

Compensation is based on the results of performance appraisal. Besides the basic salary and overtime allowance, employees are given allowances for food, transportation, medical cost, etc. Including everything, factory workers, for instance, should receive twice as much as their minimum basic salary. Bonuses are given twice a year, which is equivalent to some three months salary. The amount of bonuses is subjected to the results of performance appraisal.

Since the four companies merged in 1991, Motorcycle Company C still has not developed a new appraisal system and wage scale. In the new system the company will have three main appraisal items: seniority, ability and actual performance and results. Ability and performance will be the major factors for promotion and pay rise. The average wage for the workers is Rp.200,000 and the starting wage is about Rp. 150,000 to 160,000. In order to expand production, the company recently hired many new young workers, so that the average might go down. Supervisors and foremen receive the

<table>
<thead>
<tr>
<th>Job Class</th>
<th>Number (person)</th>
<th>Minimum (Rupiah)</th>
<th>Maximum (Rupiah)</th>
<th>Average (Rupiah)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29</td>
<td>96,000</td>
<td>183,000</td>
<td>128,000</td>
</tr>
<tr>
<td>2</td>
<td>213</td>
<td>116,000</td>
<td>370,000</td>
<td>171,000</td>
</tr>
<tr>
<td>3</td>
<td>1,708</td>
<td>138,000</td>
<td>498,000</td>
<td>196,000</td>
</tr>
<tr>
<td>4</td>
<td>566</td>
<td>176,000</td>
<td>642,000</td>
<td>305,000</td>
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<tr>
<td>5</td>
<td>499</td>
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<td>6</td>
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<td>834,000</td>
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<tr>
<td>7</td>
<td>233</td>
<td>623,000</td>
<td>968,000</td>
<td>753,000</td>
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<tr>
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<td>69</td>
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<td>1,072,000</td>
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<tr>
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<td>52</td>
<td>1,153,000</td>
<td>2,015,000</td>
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</tr>
<tr>
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<td>2,802,000</td>
<td>2,213,000</td>
</tr>
<tr>
<td>11</td>
<td>18</td>
<td>2,572,000</td>
<td>4,007,000</td>
<td>3,117,000</td>
</tr>
<tr>
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<td>26</td>
<td>4,213,000</td>
<td>6,533,000</td>
<td>5,325,000</td>
</tr>
</tbody>
</table>
allowance of Rp.500,000-600,000 in addition to the average salary of the workers. The managers receive some Rp.1,200,000.

Since the capable employees demand a higher salary, the wage system in Tire Company D is performance-oriented. There is a performance appraisal and also special consideration for those with special skills or abilities. The wage difference between the most capable worker and the marginal one is 20% after 5 years service. In addition to the salary, a company car is provided to those in the position of manager or above. About 5% of the total employees resign. Since there are 7 companies in this industry, employees are often poached by others. Some skills and techniques, like the method to compound the materials should not be leaked by poaching so that the company gives special allowance to keep workers with firm-specialized skills.

(3) Conclusion

All four companies have two personnel groups: staff and worker. Except for the tire company, they only recruit high school graduates as workers. They did not show particular preference for vocational high school graduates. The companies have no problems in hiring people for these positions. Some interviewees suggested that the quality of pre-employment of education is quite low and the new investors will have problems to find trainable workers.

The common problem for these four companies is recruiting highly qualified candidate managers or professionals, such as computer programmers and engineers. The companies pointed at similar reasons for this difficulty. First, university or polytechnic graduates often prefer working close to the city, rather than in an industrial estate. Even engineers prefer to work for banks as investment analysts of manufacturing companies. Second, the salaries in manufacturing companies are relatively low compared to the formal service sector. Third, some university graduates, especially those from prominent public universities, have a strong preference to become a public servant. As mentioned before, these companies have not established systematic managerial skill training yet. The shortage of candidates seems to hamper the development of such training programs. It is sometimes pointed out that a lack of training efforts by companies prevents the delegation of authority to the locals. However, the insufficient and imbalanced labour supply discourages companies to develop the local managerial capabilities and delegate more responsibilities.

108 During the oil boom, the public service sector absorbed a large number of highly educated people. In 1989, nearly 100,000 students were studying public administration at Sarjana and Diploma level. According to my interview with Pertamina employees, (1) job security, (2) good fringe benefits programs and (3) opportunity for self-development (opportunities to obtain scholarships to continue studying, etc.) are the major reasons for their preference for public servant positions.
During the last two decades some companies have trained many high school graduates as section managers or deputy division managers. However, all companies acknowledged the lack of managerial abilities of these managers from worker level and find it necessary to recruit better qualified manager candidates from universities and polytechnics. All companies have started to offer scholarships to several competitive universities and sometimes conduct joint research projects. They also open their factories for practical training of several educational institutions.

The four companies have lately restructured their personnel appraisal system and compensation systems. This is because they all had quite high turn-over rates among highly qualified or experienced personnel. As discussed above, these companies still have difficulties in recruiting professionals and candidate managers and maintain them after training. To improve the situation, they all modified their old wage scale based largely on seniority into more performance or ability-oriented wage scales. These companies also offers special allowances or extremely high salaries to highly demanded personnel recruited from outside, instead of offering training.

Since factory workers are well paid in comparison with other Indonesian companies or other foreign joint ventures, the turn-over rate of such workers is quite low and returns from training are assured. However, the incentives for training highly qualified personnel seem to have weakened, considering the job-hopping situation in the companies.

Thus, all four cases show that they recruit trainable workers and train them gradually in companies. Because of the low labour cost, it does not eliminate much production cost to train workers to be multi-skilled. Since there is no shortage of inexpensive worker level personnel, companies can replace or add workers when necessary. This situation might delay the development of workers as well as set a limit to training practices in companies. Concerning middle-level managers level, the interviewed companies find it difficult to give extensive training. Firstly, it is difficult to recruit trainable candidate managers. Secondly, they prefer to recruit the experienced from outside. In addition to the difficulty in the recruitment of candidate managers, the turn-over rate is high for highly educated candidate managers. Therefore, a large investment in management training may not pay off. Also, the Japanese managers are still in managing positions and it might be more convenient for the Japanese side to keep the company controllable.
4.3. Electronics Industry

4.3.1 Introduction

The development of the electronics industry has contributed significantly to the industrialization in Northeast Asia and ASEAN. Most of the countries in these regions started to develop the electronics industry as an import-substitution industry. As in the case of the automotive industry, the development of the electronics industry was expected to decrease the import of final products and increase domestic production and employment. The establishment of assembly companies was also expected to promote the development of small and medium size industries as suppliers of components or sub-assemblers. Unlike the automotive industry, most of the consumer electronics industries developed on the basis of exports, rather than domestic sales. The electronics industry as a whole contribution significantly to the export earnings in these regions.\(^\text{109}\)

The growth of export-oriented production of electronics products in ASEAN was promoted by a large inflow of foreign investments since the 1960s. Many electronics companies relocated the production of standardized products and parts to developing countries, because of the high labour cost at home. Both major Japanese electronics companies and small supporting industries started to relocate labour intensive production processes to NIEs and later to ASEAN in the 1960s. Nearly 20% of total Japanese overseas investments was from electronics industry in 1989. American companies also started to relocate the production of integrated circuits to Asia in 1970s.

Apart from the promotion of linkages among industries and the contribution to production and employment, another important aspect of the electronics industry is that its technical development can contribute to the general improvement of production and management systems. In an increasingly complicated market, data collection and analysis for marketing as well as flexible arrangement of production systems are crucial for any industry. Information technology and electronic devices have become increasingly important in the coordination of production procedures, procurement, design, research and general administration. The electronics industry can therefore occupy a key position in technological change and industrial development. The development of information and communication network among industries will promote different applications of existing technologies and the integration of various technologies for more efficient and effective production of commodities and services.\(^\text{110}\)

\(^{109}\)The total export value of electronics products from NIEs was about US$3,400 million in 1987. GATT, International Trade 1987/88.

\(^{110}\)Komoda, F. and T. Hayashi, Gijutsukakushin to Gendai Sekai Keizai (Technological innovation and Contemporary International Economics), Tokyo, Minerva, 1993
4.3.2 Background

The Indonesian government has been aware of the key importance of the industry and two state-owned electronics and telecommunication companies have been operating as strategically important industries since 1989. A recent influx of foreign capital in the electronics industry has accelerate the growth of production and exports. But on the whole, electronics industries in Indonesia are still far behind other ASEAN or East Asian countries, especially in terms of technology. This section will provide a brief background of the electronics industry in Indonesia, contribution of companies to the improvement of technical and managerial capabilities of Indonesian employees.

The import substitution policies for the electronics industry used to be similar to those for automotive industry. The import of several final products and generally applicable components were either banned or subjected to import tariffs of up to 60% in the early 1970s. Just like the tariff on CKD units was lowered in the automotive industry, the import tariffs on parts and components were set lower than those for final products. This arrangement was expected to attract assembling production from abroad. Most of the major Japanese assemblers and some European companies, such as Philips came to maintain their presence in the potentially large domestic market. Deletion lists were not developed for the electronics industry because of the relatively large number of different products, which have different structures and components. Imports of electronics goods and parts, as well as production were limited to licensed companies.

| Table 1 Production of Consumer Electronics in Indonesia 1973/74-1991/92 (x1000) |
|----------------------------------------|---|---|---|---|---|
|                                       | 73/74 | 83/84 | 85/86 | 87/88 | 89/90 | 91/92 |
| Radio/Cassettes Recorders             | 900   | 1,503 | 1,883 | 1,080 | 2,339 | 3,788 |
| Televisions                           | 70    | 623   | 772   | 640   | 797   | 1,581 |

Source: Attachment to the annual speech of the President to the Indonesian Parliament

The assembling companies suffered from smuggled electronics products. But, most of them have enjoyed protected domestic markets and gradually increased their production, as Table 1 indicates, especially during the 1980s.

High tariffs and bans on end products and some parts, licensing of production and imports of several products, and lower tariffs on materials and parts helped assemblers to survive in the small domestic market. However, these policies minimized competition and hampered the development of technical capabilities. In addition, the coordination of lower tariffs on parts and materials discouraged the development of

111 PT Industri Telekomunikasi Indonesia and PT LES-BPIS. These state-owned electronics and communication companies are oriented on communication technology and specialize in the production of telecommunication products and parts.
112 Interviewees from three import substitution type companies said that it is really a problem.
components production. Consequently, assemblers tried to make the best of the existing facilities and personnel, rather than investing in capital goods and personnel to compete on quality and differentiated products. Relatively easy access to imported parts and materials made it unnecessary for them to develop a local network of supporting industries.

Unlike other ASEAN countries, the development of the electronics industry in Indonesia was not accelerated by foreign investments in export production in the 1970s and 1980s. Except for the two American semiconductor companies, which contributed to the export performance in the 1980s, there was no large export-oriented electronics company until the very late 1980s.

The business environment for foreign investors was much less attractive in Indonesia than in other ASEAN countries. Singapore, Malaysia and Thailand were the recipients of the relocation of export products started from Japan since the late 1960s, and from Korea and Taiwan in the 1980s. Most of these companies chose Malaysia and Thailand as export production sites of standardized or labour intensive export products. To the Japanese investors, the conditions in Indonesia until the late 1980s were much less attractive than the incentives and facilities which Korea, Taiwan, Malaysia, Thailand and even the Philippines offered.

<table>
<thead>
<tr>
<th>Table 2 Science Personnel in Asia</th>
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<tbody>
<tr>
<td>Country</td>
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<td>---------</td>
</tr>
<tr>
<td>Indonesia</td>
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<tr>
<td>Thailand</td>
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<td>Singapore</td>
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<td>Malaysia</td>
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<td>Korea</td>
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<td>Japan</td>
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</table>

(a) as % of corresponding age group
(b) as % of total graduates between 1988 and 1990

There are some electronics companies with 100% Indonesian ownership, but most of these still require technical assistance from foreign companies and consulting agents. A major reason is that, given current pre-employment education and training, the labour market is unable to supply the personnel to facilitate the development of highly technology-intensive industry. Table 2 illustrates the differences in this respect between Indonesia and other ASEAN countries.

Universities and polytechnics supply only a few hundreds of graduates who majored in information technology or subjects related to computer science. About 10,000
students are enrolled in Sarjana 1 or Diploma in engineering. The country also lacks people with required managerial capabilities. For example, since the cost of materials and parts is around 80% of the total production cost, companies need sophisticated procurement capabilities. Given the small size of the domestic market, it is also necessary to try and seek export opportunities which require good marketing capabilities. General management capabilities such as business planning for production and re-investment, and data collection and analysis are important, because of the fact that market trend and technology are quite changeable in this industry.

Since the late 1980s, a series of deregulations has changed the business environment for foreign investors has changed considerably. This is not the place to elaborate these deregulations, but a few can be mentioned. In 1986, the first EPZ (Export Processing Zone) was established in Jakarta. Companies which export more than 85% of their products are considered export-oriented companies and are allowed to import materials and parts regardless of import quotas and import licences. Those which export less than 85% are allowed to purchase imported products if the price of imported goods is lower than made in Indonesia. In December 1987, the condition of exports changed to 65% except textile industries. Moreover, export-oriented companies are allowed to employ foreign experts for the development of designing capabilities and the improvement of quality. The May package in 1988 reduced import tariffs on electronics parts and components considerably. Another major change was the development of the Indonesian island of Batam as a subsidiary of Singapore. Batam especially attracted foreign electronics companies.

These changes in foreign direct investment policies started to attract the relocation of export production from Japan, Korea and Taiwan to Indonesia in the late 1980s. According to information from BKPM, foreign direct investments in electronics industries have dramatically increased from only US$0.5 million in 1988 to US$271.8 million in 1991. Most of the investments are made to develop new sites for export production of either consumer electronics or components. The exports of electronics products increased significantly from US$64 million in 1986 to US$865 million in 1992. The share of electronics industry in exports has been increasing again since 1987 but it is still only 5.8% in 1992.

It seems that the attention to the electronics industry continues to increase. Jetro (Japan External Trade Organization) has invited a mission of small and medium scale electronics companies several times and helped them to coordinate joint ventures. In 1993, the representative of KADIN called for more foreign investments from Japan in

electronics component industries.\textsuperscript{114} The introduction of EPTE (Entrepot Production for Export) status and improvement of foreign investment procedures aimed at promoting further investments.

But if Indonesia intends to aim at diversifying its manufacturing industries by developing technology-intensive assembling industries, such as the electronics and the automotive industries, important issues such as how to acquire technologies and how to develop technological capabilities in the work-force arise. As mentioned above, the existing pre-employment education and training system in Indonesia is not yet capable of adequate number of qualified workers for a technology intensive industry.

The three major electronics companies interviewed for this study can in principle contribute to overcoming this shortfall in the labour market. All are assembling companies of consumer electronics from Japan. Company A and B have started operation in the early 1970s and both have recently established an export-oriented subsidiaries for VCRs and some components (Company A-I and B-1).

Japanese investment in the electronics industry accounted for only 0.8\% in the total Japanese investments in Indonesia\textsuperscript{115} but Japanese investment accounted for some 43\% of foreign investments in the electronics industry in Indonesia.\textsuperscript{116} Some investments originated from Japanese branch companies in Singapore and Hong Kong. Japanese joint venture electronics companies currently employ more than 10,000 Indonesians. The involvement of Japanese companies seems to be even bigger when technology transfers in the form of technical assistance agreements, licensing, etc. are taken into account. Indonesia was the fourth largest importer of manufacturing technologies from Japan between 1973 and 1988 in Asia.\textsuperscript{117}

Although the number of companies in this study is small, they give an impression of the involvement of Japanese companies in the development of Indonesian personnel. As in the case if the automotive industry, we will assess this involvement in three parts: (1) how local personnel are trained to absorb more recent technology; (2) what motivates or discourages training activities in the companies. This third issue (3) how company training in the companies is connected to the country’s efforts for human resource development, will be considered together with other two industries in Chapter 5.

\begin{itemize}
\item \textsuperscript{114}Business Symposium on 1 September 1993 in Osaka
\item \textsuperscript{115}The Japanese investments in the electronics industry was the largest of the total Japanese overseas investments in manufacturing industries in Asia. In Indonesia, the Japanese investment in the manufacturing sector is about 30\% of the total investments between 1951 and 1989. Source: Central Bureau of Statistics of Japan.
\item \textsuperscript{116}PBDI, Electronics Indonesia, p.151.
\item \textsuperscript{117}The total value of these imports amounted to ¥94,700 million.
\end{itemize}
4.3.3. Training Practice: Common Characteristics

(1) Introductory Training
All companies consider it necessary to give introductory training to new Indonesian personnel. Most of new factory workers have never worked before in a large organization so that an introduction to the discipline of factory work is required.

Company A gives the new workers a 2-week introductory training after a 3 month trial period. This 2 week long training contains the management philosophy of the parent company in Japan, an explanation of the labour agreement of the company, safety, and discipline training. After this training the new workers are allocated to individual departments or sections where they are given a short OJT. There is a job description for each worker and most of the operators are given a limited range of tasks in their production lines, which means that they are not trained to become multi-skilled. University graduates also start with the work at the production lines. Company B and B-1 also offer a short introductory orientation training before new workers are given a position at production lines. After they start to work at lines, OJT will be given if necessary by the senior member. Company C also offers 2 weeks introductory training for everyone. Since most of new workers have no experience to work as a part of a large production process, the trainers start with discipline lessons.

(2) OJT and Off-JT
Companies interviewed conduct OJT after the introductory training at all levels. They plan to educate Indonesian managers or supervisors first by OJT provided by Japanese personnel. Then, the Indonesian managers are expected to conduct OJT for their subordinates. Most of the expatriates are technical staff, who instruct the Indonesians at a production site. Technical staff and manager candidates also receive OJT. If necessary, they take Off-JT elsewhere.

Company A has organized Off-JT training for promotion. Manager or supervisor candidates are required to take a preparation course in the company’s training center. In other companies, Off-JT has not been organized systematically.

The companies experience two common problems. The largest is the language barrier. Company A and C are trying to overcome it by making some manuals in Indonesian. Another problem is the lack of initiative and leadership among managing staff. Even if Indonesian managers have been trained by Japanese staff, they do not necessarily instruct their subordinates in each section or department. In Company A the Japanese senior managers have regular interviews with as many Indonesian subordinates as possible in order to monitor the progress of OJT.
(3) Overseas Training

Company A sends about 100 Indonesian employees to Japan each year. The trainees are expected to see how production processes are organized in Japan and to experience the types of work which supervisors and managers are expected to do. The parent company of Company A has established overseas subsidiaries in several Asian countries. The staff from these Asian countries receive training together sometimes. One object of training together is to encourage competition among these subsidiaries.

Companies B and B-1 also send Indonesian employees to Japan, where the parent company has established a training center for Off-JT. Employees from overseas subsidiaries often receive Off-JT in the center. Candidate managers can follow Boston University's MBA program at this center. Overseas trainees receive OJT in the factory in Japan when new products or production processes are introduced. More than 30 candidate managers have been sent to Japan for training. The company established a new factory in EPZ Kawasan Industri last year. For the inauguration of production, 30 Indonesian engineers and workers were sent to Japan for initial training.

Overseas training has been an important method for Company C in developing the minimum necessary capabilities, especially in its technical divisions. Before production inaugurated, the company sent 150 people to Malaysia. It was considered more practical to train Indonesians in Malaysia because of the size of production, procedures and the products of the Malaysian subsidiary are similar to those in Indonesia. It also avoided the language problem.

Engineers were sent to either Japan or Malaysia for about a month for planning of the production of new models. Production lines have to be completely refurnished to be suitable for the new model, so that the engineers have to learn how to coordinate the changes in the factory in Indonesia. In Indonesia, 7-8 engineers are in charge of making manuals for operators when new production process is implemented, whereas in Japan the operators are instructed face-to-face in OJT. This indicates that the factory still experiences difficulties in planning production process, machinery and equipment for new products or different models.

(4) Conclusion

Companies interviewed are all engaged in the three types of training practices described above. All companies mainly use OJT and overseas training. It appears that all companies still concentrate on developing minimum technical capabilities of Indonesians workers. The Indonesian staff has acquired operation and maintenance capabilities. But these capabilities are not yet advanced for them to modify products, change production processes or organize procurement. Except for Company A, the training of managers is not very advanced.
Company A has its R&D division where the Indonesian engineers have developed radios, black and white TVs, and some audio products. Modification can be managed by the Indonesian engineers. The Indonesians can only make some minor changes of color TVs. The company needs more technicians and engineers from polytechnics or universities, who can absorb transferred technology more efficiently for the further development of local technological capabilities. Company B only started to consider personnel development seriously after the Indonesian partner changed. Company B-1 and Company C have been in Indonesia only for a few years. They are still concentrating on the development of technical capabilities of the Indonesians.

Except Company A, which has training programs for promotion, training for candidate managers is not very common. Company A's middle managers are all Indonesians and one of the local directors was "home-bred" from a factory worker position. Half of the directors are Indonesians and company strategies are decided by agreement between Indonesian and Japanese directors. In Company B, 25 middle management positions are occupied by Indonesian managers. Two-third of director positions are held by the Japanese and there are still 10 advisors from Japan. Company B-1 and Company C are still in the process of recruiting managers or candidate managers from outside. Planning and administration are almost entirely managed by the Japanese. The involvement of the Indonesian partner might delay the development of local managerial capabilities. Company C is planning to give newly recruited experienced managers a re-training despite their planning.

4.3.4 Training Practice: Differences and Incentives

(1) Business Perspectives and Training Practice

There is one major issue which separates these four companies. The difference is clear from the beginning, because two of them are import-substitution type companies and the others are highly export-oriented companies. Company B-1 is exporting 100% to North America. Company C is exporting 99% to North America, Middle East and other Asian countries, including Japan. Both companies are producing relatively standardized products. Both companies are planning to expand the scale of production in the future. Company C is also considering to sell its products domestically.

Companies B-1 and C are producing the standardized products which can no longer be made profitably in Japan because of high labour cost. But productivity is still a major concern for these companies, despite the low cost of labour in Indonesia, because their competitors are also operating from low-wage developing countries.

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118 Design of audio products, some minor changes to speakers.
119 This is mainly because of the high labour cost.
Moreover, the quality of products must meet certain standards in order to marketable overseas. Both companies installed up-to-date machineries and Indonesian technical staff are trained to achieve the required standards of productivity and quality. Company C's staff for production technology has just been trained well to operate and maintain the most recent assembling machines which will be installed in 1994. But whether these companies will be able to maintain and improve the standards of productivity and quality with a growing share of Indonesian personnel, is unclear. One concern is that introduction of sophisticated machinery and automation tends to improve only operation and maintenance capabilities to some extent. Foreign advisors still plan the introduction of new machineries, the modification of production processes and advise on better maintenance.

Unlike the export-oriented companies, the protected domestic market seems to set a limit on the training. In the protected market, companies improve their facilities and technological capabilities little by little. The key strategy of both Companies A and B is to maintain a reasonable market share and remain a major company until Indonesia's domestic demand will start to accelerate in the near future. Their facilities are not the most recent ones and the quality standards are not high. This means that the targets for training of these companies tend to become low as well.

Company A started to export in 1980. Although the share of its exported produce has increased from 0.6% in 1986, it was still about 10% in 1991. The company has been trying to improve the quality of its products to be internationally competitive. But most of its exports are products which production sites of other countries no longer produce for exports. Its main export products are radios, radio-tape recorders, fans and black and white TVs, which are mainly exported to the Middle East. Since late 1980s, the company started to export about 5 million speakers per year. It supplies them to other export oriented companies, like Company C. The company is also looking for opportunities of OEM production. It now considers personnel development as one of the major issues in entering competitive international markets as well as maintaining its share in the domestic market.120

(2) Diversification of Products and Training Practice
Companies A and B are gradually increasing their range of products. Company A, for example, started with the production of radios. Now it has about 20 products in four divisions: audio products, TVs, home appliances and components. Because the products are produced only for the domestic market, the Indonesian engineers are trained to manage modification or changes of product design as well as refurnishing of production

120A new joint venture company was established based on the speaker production department in August, 1993.
processes for any change. Company B has a similar range of products. The products produced in Indonesia are not most recent models but several technologies and skills have been introduced as a consequence of the diversification of the product range.

Because of the recent deregulations, it is more advantageous for companies to establish a separate export-oriented company in an EPZ or obtain EPTE status if the company can export more than 85% of total production. Both Company A and B expanded and diversified their production by establishing export-oriented companies rather than increase their own exports. These export-oriented companies have up-to-date production facilities and its operators are well trained to achieve high export quality and reasonable productivity. This tendency may further enlarge the technological gap between export-oriented companies and import substitution companies.

Companies B-1 and C are producing a limited number of products. In order to catch up with trends in export markets, minor changes and modifications of production processes happen frequently. Training is offered when these changes occur in production. Indonesian staff are either instructed by Japanese trainers or sent to Japan for training.

(3) Labour Shortage and Training Practice
As in the automotive industry, all companies have no difficulties in recruiting high school graduates as factory workers. Because factory workers are usually single-skilled, it does not take long to train new workers and replaced the ones who left. Salary for factory workers is higher in the interviewed companies than many other options.

But all companies experienced a shortage of personnel of the middle management level in general and production technology. Although Companies A and B have developed most of their middle managers from high school graduates through OJT, both of them would like to recruit more personnel with diplomas or university degrees. Company A considers it necessary to employ more highly educated personnel for further technology transfer. Company B-1 and Company C are still recruiting experienced managers from outside.

121 Company A has three companies which produce and export batteries, speakers and VCRs. Company B has B-1, a compressor factory in Kawasan Industri and a battery factory in Batam.
122 Now EPZ or EPTE companies are able to sell 25% of their export performance. Export companies of large companies like Company A and B are producing different products so that there is no competition between export-oriented companies and the import-substitution parent companies. If export companies like Company C produces the products at the same price range to Company A and B and sells them in the domestically, some technical improvement of import-substitution companies can be expected.
123 Company A's starting salary is about Rp.120,000 per month, including overtime and Company C's basic salary without any benefits and allowances is Rp.85,000 as of October, 1993. They also provide bonus(3-3.5 months salary per year).
(4) Conclusion
In general, companies provide training to meet the standards expected at their target markets, which are different for the export companies and the import-substitution companies. In import substitution companies, Indonesian workers have developed operation and maintenance capabilities for producing a variety of products. Some R&D has to be done by the Indonesian engineers because these companies produce largely for the protected domestic market and to a lesser important for the foreign market.\(^\text{124}\) The technological level of the import-substitution companies is low, but it is considered high enough for the production of products for the domestic market. Hence, the required technological capabilities remain low, and incentives for training are limited until the domestic market develops further.\(^\text{125}\)

The export companies have to train the Indonesian personnel to achieve the required product quality and productivity to be competitive in the international markets. Since export production started only recently, it is not possible to judge the progress. So far, Indonesian personnel has been trained to manage routine operation and maintenance. Further training is given when product models change.

Major multi-national electronics companies are considering their strategies in a global perspective, which means that their subsidiaries should complement each other. In order to organize procurement, production and marketing on a global scale, each company has to be controllable. This implies that Japanese parent companies might not invest much in manager training until they clearly see future trends in the Indonesian economy, in particular the Indonesian labour market. All companies see a shortage of middle management personnel and try to recruit experienced Indonesian managers, while training existing employees by OJT or overseas training. Perhaps, the Indonesian partner should be more involved in the management of the companies for the development of local managerial capabilities and the delegation of authority to Indonesian managers.

4.3.5 Training Practice: Sufficient Conditions for Training

Training and Personnel Management are interactive factors. If training has to be successful, a company must employ capable personnel who can absorb and utilize skills and knowledge from training. It also has to pay skilled workers well in order to keep them from moving to other companies, taking the acquired skills with them. Oppositely, if a company training system is not well developed or does not function well, a company

\(^{124}\)For example, both Companies A and B developed a water pump to meet the domestic marker needs. Special low watt products have been developed because of weak electric power.

\(^{125}\)The imported products from Japan have different functions and price range, so that they are not competing with what the import-substitution companies produce. The largest concern of the interviewees is the possible influx of ASEAN goods by AFTA in the future. They consider that it will destroy the domestic electronics industry rather than generate competition.
must compensate for this deficiency by recruiting trained personnel and modify its payroll system to attract highly qualified and experienced personnel. Lastly, the cost of training people to achieve improvement in production has to be lower than the cost of automation, which may achieve similar results. (1) Recruitment, (2) Compensation and (3) Automation will be discussed in brief in this section.

(1) Recruitment
All four companies have two categories of employees, staff and workers. Besides this rough division, there are a number of job levels and categories. For the worker category, all companies employ only high school graduates from both vocational and general schools. Companies A and B produce a number of products which require heavy physical labour work, so that the ratio of male workers is much higher. Oppositely, more than 80% of workers are female in the export-oriented companies, B-1 and C. Female workers are often preferred for manual assembling and insertion jobs. High school graduates are generally considered trainable.

Companies are making efforts to recruit personnel with diplomas or university degrees, especially for the technical divisions. Such highly qualified personnel are often difficult to recruit, because of the location of the factories and the salaries offered. The members of the human resource department staff of Company A visit universities and polytechnics to recruit. The company sometimes offers donations to educational institution in order to establish good relations with them. The company is thinking of offering scholarships to university students. Company A has a special relation with the Surabaya Electronics Polytechnic. The company offers technical assistance to the institute and approximately 10 graduates from the institute join the company each year.

Company C recruits graduates from polytechnics or university to become engineers or technicians. Polytechnic graduates are relatively good at English and after one year of training they are able to manage routine work as an engineer, solve the problems in the machinery, instruct others, negotiate with other departments, etc. The company recruits those who are qualified and suitable to the company's character. It does not recruit from specific universities only. The company, therefore, does not seek to establish connections with specific universities. The company C is planning to replace at least a half of Japanese managers with experienced Indonesians. After the company has enough experienced managers who can instruct their subordinates to some extent, it will start to hire more fresh graduates and train them internally.

126For example, in Company A 1,616 (77%) out of 2,099 Indonesian employees are male and only 483 (23%) are female.
127This is an example from the production technology division.
(2) Compensation System

Company A has recently changed its compensation system to be more performance-oriented. There are performance appraisals twice a year. There used to be a seniority system, according to which employees were gradually promoted. In the new system abilities and achievements are to be reflected more in the salary and promotions in the positions above supervisor level. Bonuses depend on the result of the performance appraisals. A bonus worth a month’s salary is given to every worker either for Lebaran or for Christmas. In addition to this bonus, a maximum of 2.5 months salary is given, depending on the level of performance.

Lately, a number of factory workers in Company B were recruited by another Indonesian Japanese company for nearly double their old salary. In order to avoid frequent job-hopping, Company B started to consider a revision of its compensation system.

The personnel structure of Company C has a pyramid-like shape with many middle management positions. This company is quite new but it has already started to consider a modification of its human resource management system. Company C is considering to allocate personnel in the shape of reverse T, that is, the company gives senior positions to a smaller number of capable personnel and cut down on middle level managers. That may mean that both senior employees and the operators can be paid more. This change has been considered because it is difficult in Indonesia to recruit candidate managers and train them gradually for lower or middle management positions. The company aims to develop a compensation and training program, which educates the people in senior positions more quickly and promotes them smoothly to higher positions, whereas the company will be able to offer higher wages than other companies as incentives to the lower level employees. The company also plans to make job descriptions of the available types of jobs, because the Indonesian employees prefer clear job descriptions to the sometimes ambiguous job descriptions, which are common in Japan.

There are only limited data on salary but they suggest that salaries vary widely, according to educational background, qualifications and experiences. The average salary of Company A is Rp.194,400. Its starting salaries are Rp. 100,000 for high school, Rp.215,000 for academy, Rp.350,000 for polytechnic and Rp.485,000 for university graduates. Managers receive Rp. 2-3 million. The starting salary at Company C is Rp.85,000 for operators, Rp.400,000 for polytechnic graduates. University graduates

128 This could be a good option in the current situation in Indonesia. However, the possible problem in a reverse T shape personnel management system is communication between the levels. Moreover, the company will have to recruit highly qualified personnel and coordinate very efficient training programs for senior staff, whose services cannot be wasted.
start with an officer position and salary is about Rp.700,000. Assistant-managers are paid about Rp.3 million and managers are Rp.4 or 5 million.  

(3) Automation
Automation has been introduced in the two export-oriented companies, B-1 and C. Both companies are still using more labour than comparable companies in Japan because of the low labour cost in Indonesia. The main purpose of automation seems to be maintaining the quality and increasing productivity, rather than eliminating labour costs and training costs.

(4) Conclusion
All the companies employ high school graduates, not so much because of their qualifications, but their 'trainability'. As mentioned before, such graduates have to be trained to work in a large-scale production. The structure of quality of workers is generally considered to be good. Companies interviewed find it difficult to recruit and maintain educated personnel. The examples above show that companies lately started to change the personnel management structures, in particular concern of employees with diplomas or university degrees. The main reasons are that supply of engineers and candidate managers is small and the location of manufacturing companies often deters highly educated people. Japanese joint ventures in Indonesia used to base their personnel management systems on seniority. By now most of the companies have introduced performance-oriented elements so as to recruit more trainable personnel and maintain them after training.

4.4 Banking Sector

4.4.1 Introduction
The financial sector is a key sector in the Indonesian economy. Well-developed financial services can be regarded as a prerequisite to the development of other economic sectors, in particular manufacturing industry because of the allocation of credit to feasible projects. The services provided by the Indonesian financial sector have expanded and diversified considerably since the deregulation of the sector started in 1983. The role of the central bank and state banks has become smaller. The number of private banks has increased and their presence in assets, deposits and credits has become more visible. The expansion of export-promotion has diversified the activities in the banking sector. In

In many Japanese companies in Japan the managers earn 4-8 times as much as the workers and junior clerks. In this company the managers earn 50 times as much as the workers and 40 times as much as the clerks.
recent years, the banking system in Indonesia has come under a test to determine whether it will be able to achieve the international banking standards, relating to for instance capital-adequacy and quality of services. It is clear that developing personnel, which can create further change and progress, will be essential to the banking sector. This section discusses personnel development in the banking sector. It will give a brief background, followed by the results from the interviews.

4.4.2 Background

Until the early 1980s, Bank Indonesia and seven state banks dominated the Indonesian financial sector. The basis of the finance sector was formed by Basic Bank Act (ACT No.14 1967), regulation on foreign banks (No. 13 1967) and Central Bank Act (ACT No.13 1968). The central bank and state banks were also involved with a wide range of non-bank financial services. The Central Bank Act of 1968 allowed Bank Indonesia to provide liquidity credits to state banks, instead of lending to the companies directly. The interest rates of liquidity credits were about a half of that the state banks offered to. Each of five state commercial banks concentrated on a few lending target sectors and established a strong relation with the state-owned enterprises in the allocated sectors.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Central Bank Credit</th>
<th>Direct Credit (%)</th>
<th>Liquidity Credits*</th>
<th>State Banks (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>362</td>
<td>97</td>
<td>113</td>
<td>233</td>
</tr>
<tr>
<td>1975</td>
<td>2752</td>
<td>914</td>
<td>565</td>
<td>1,602</td>
</tr>
<tr>
<td>1980</td>
<td>7880</td>
<td>2,454</td>
<td>1,722</td>
<td>4,301</td>
</tr>
<tr>
<td>1985</td>
<td>22,157</td>
<td>964</td>
<td>7,633</td>
<td>15,374</td>
</tr>
<tr>
<td>1988</td>
<td>44,001</td>
<td>1,547</td>
<td>13,427</td>
<td>28,631</td>
</tr>
<tr>
<td>1989</td>
<td>63,606</td>
<td>696</td>
<td>16,228</td>
<td>39,579</td>
</tr>
<tr>
<td>1990</td>
<td>97,696</td>
<td>718</td>
<td>13,668</td>
<td>53,524</td>
</tr>
</tbody>
</table>

*Most of the liquidity credits were provided to Public Commercial Banks.

Source: Bank Indonesia, Annual and Monthly Reports.

130The central bank which has 29 branches in Indonesia and four overseas offices. The bank is directed by the Monetary Board of the Cabinet.

131Five national commercial banks; Bank Negara Indonesia 1946; Bank Bumi Daya; Bank Rakyat Indonesia; Bank Dagang Negara and Bank Ekspor Impor Indonesia, and Bank Pembangunan Indonesia (the national development bank) and Bank Tabungan Negara (the national saving bank).

132Bank Negara Indonesia 1946: Manufacturing and Transportation; Bank Bumi Daya: Plantation and Forestry; Bank Rakyat Indonesia: Agriculture and Livestock industry; Bank Dagang Negara; Mining and Export industries; Bank Ekspor Impor Indonesia: Trading, Export Business.

(Source: Sakura Institute of Economics, A Brief Guide to Investment in Indonesia, Tokyo, 1990)
Table 1 suggests that Bank Indonesia had a strong control in the allocation of finance in the 1970s. Its direct and liquidity credits accounted for more than 50% of all credits provided. In 1980, three quarters of the total deposits were in the state banks. The assets of the central bank and the state banks still accounted for two thirds of the total assets in the banking sector. However, the fall in oil revenues from 1982 made it difficult for the central bank to continue its role as the single major source of credit. It started to encourage deposits and promote competition among private and state commercial banks.

Deregulation of the banking sector started in 1983 with the removal of interest rate controls on the lending activities of state banks and credits ceilings, and the abolition of taxation on interest on foreign currency deposits. The key element in the range of deregulatory measures in the financial sector has been the withdrawal of direct intervention by the central bank in the financial market in favour of indirect controls.\textsuperscript{133} The bank also aimed at gradually reducing its liquidity credits. Although, in fact the volume of liquidity credit provided by the central bank has increased\textsuperscript{134}, the share of private lending has leaped ahead, as Table 2 shows. Credit from private commercial banks and foreign banks was around 10% of total lending in the 1970s but increased to account for nearly 45% by 1988.

The 1988 deregulation package allowed foreign banks to establish joint venture banks and branch offices in seven major cities.\textsuperscript{135} Private Indonesian banks are also allowed to establish branch offices. Table 2 indicates that the number of foreign and private banks, and their branch offices increased. In addition, the Dollar Rupiah Swap System was improved\textsuperscript{136}, reserve requirements were lowered and state-owned companies were allowed to use private banks. Table 2 also shows that both credits and deposits of the private banks increased dramatically.

Because of the deregulation of the finance sector, the Indonesian banking system has come under increasing commercial scrutiny. Increased competition forced banks to improve their service records, while continued commercial development tested the banks on their ability to provide new services. State and private banks had to compete to attract deposits and allocate them as loans to reliable and profitable projects. Moreover, leading private banks are allowed to handle foreign exchange and related business. Large

\textsuperscript{133}In order to control the financial market indirectly, the central bank introduced SBI (\textit{Sertifikat Bank Indonesia}) system in 1984 and SBPU (\textit{Surat Berharga Pasar}) system in 1985.

\textsuperscript{134}Bank Indonesia kept offering liquidity credits for the loans to certain target groups of enterprises. For example, state banks still receive liquidity credits for the investment scheme, as well as the lending to small-scale industries and cooperatives. The schemes for export, fertilizer and pesticide were abolished only in 1991.

\textsuperscript{135}Jakarta, Bandung, Suraman, Surabaya, Medan, Ujung Pandang and Denpasar. The establishment and expansion of foreign banks was prohibited after 1968, when only 10 foreign banks and one joint venture bank were allowed to operate in Jakarta.

\textsuperscript{136}The maximum period became 3 years instead of 6 months. The market interest rate became applied for calculating swap-costs, instead of a fixed rate of 9%.
Indonesian companies now request such Indonesian banks to be able to handle off-shore loans. The growing foreign trade and the diversification of Indonesia's foreign trade requires a well-developed financial sector, which can manage large international transactions.\(^{137}\)

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Development of the Private Banking Sector, 1974-1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Banks</td>
<td>162</td>
</tr>
<tr>
<td>State Banks</td>
<td>5</td>
</tr>
<tr>
<td>Private Banks*</td>
<td>107(10)</td>
</tr>
<tr>
<td>Foreign Banks</td>
<td>11</td>
</tr>
<tr>
<td>Development</td>
<td>28</td>
</tr>
<tr>
<td>Saving</td>
<td>11</td>
</tr>
</tbody>
</table>

| No. of Branches | 6,849 | 7,069 | n.a. | 9,434 | 12,079 | 12,543 |
| State Banks | 604 | 685 | n.a. | 815 | 945 | 960 |
| Private Domestic | 264 | 270 | n.a. | 559 | 2,052 | 2,639 |
| Foreign | 20 | 20 | n.a. | 21 | 48 | 53 |
| Development | 117 | 152 | n.a. | 290 | 396 | 468 |
| Saving | 17 | 14 | n.a. | 43 | 122 | 127 |

| Assets Total (Trillion Rp.) | 6,155 | 9,140 | 16,653 | 63,587 | 132,918 | 155,255 |
| State Banks | 78.5 | 81.0 | 80.0 | 68.1 | 52.8 | 49.8 |
| Private Domestic | 8.4 | 9.0 | 12.3 | 26.4 | 39.2 | 41.6 |
| Foreign Banks | 13.1 | 10.0 | 7.7 | 5.5 | 8.0 | 8.6 |

| Credits Total (Billion Rp.) | 1,574 | 5,324 | 9,894 | 42,805 | 95,394 | 110,992 |
| Bank Indonesia | 14.8 | 36.3 | 21.9 | 3.6 | 0.8 | 0.7 |
| State Banks | 72.1 | 53.2 | 63.4 | 66.9 | 56.1 | 53.9 |
| Private Domestic | 5.7 | 5.5 | 9.5 | 25.5 | 36.7 | 37.7 |
| Foreign Banks | 7.4 | 4.9 | 5.3 | 4.5 | 6.5 | 7.7 |

* No. of banks with the foreign exchange licence


It may be clear that the rapid expansion of the financial sector has put considerable strains on the labour market for qualified and experienced personnel. The recruitment and development of capable personnel are important aspects in the further progress of banking sector. The rest of this section will examine the personnel development of three banks. Two Japanese banks, which have started their operation in Indonesia in the

\(^{137}\)It seems that Indonesia's legal system has not kept up with the growth in international level financial activities. The bank managers interviewed suggested that it is necessary for Indonesia to organize more sophisticated legal system which supports the activities in the financial sector. One example is that a customer can put up land as a mortgage. But, if the owner of the land was successfully challenged in court, the bank loses any right of the land obtained as a mortgage.
1950s, before the foreign investment in banking was prohibited. Most other Japanese banks started operation in Indonesia only four years ago. And their development policies have not crystalized clearly.\textsuperscript{138} Hence, the experience of two older Japanese banks will be compared with that of one Indonesian bank.

Bank A is 100% Japanese owned liaison office of a Japanese bank which specializes in foreign exchange dealings and related business. Bank B is the oldest Indonesian-Japanese joint venture bank which was established in the later 50s. 70\% of its equity is owned by the Japanese partners. Bank C is one of the major Indonesian private banks. Most of major private commercial banks in Indonesia are part of large Chinese-controlled business groups but this bank is pri\textit{bumi}. The rest of this sector is organized as for the cases of the automotive and electronics industries.

4.4.3 Training Practice in General

All three banks consider that most of the personnel recruited is not eligible to start work immediately, but has to be trained first. Hence, new recruits are selected on the basis of their trainability, the banks offer various training programs. The Japanese banks try to transplant their Japanese training systems, which heavily depends on OJT. The Indonesian bank divides its employees into 'officers' and 'non-officers', and offers a very sophisticated intensive training course for the candidate officers.

\textit{(1) Training Practice within Indonesia}

The major method of training in Bank A is OJT. Employees are rotated in their section to be exposed to all the work of the section. The bank considers it to be important that employees understand the role of each employee's work in each section, as well as the function of the section in the bank as a whole. It appears that the Indonesian employees are not familiar with OJT, and prefer Off-JT. Indonesian section managers do still not adequately acknowledge the division of labour within sections and the role of sections within the company as a whole. It is not clear whether OJT has been effective in this respect.\textsuperscript{139} Each year, the bank invites 1-2 specialists from Japan to instruct the administrators in Indonesia. These training specialists work with the Indonesians employees and check how they do their work. By solving problems together with the Indonesians, the Japanese specialists aim to improve the capacity of the Indonesians to effectively solve problems themselves. Bank A has basic work manuals which support

\textsuperscript{138}The situation is similar to electronics Company C. These new banks are still in the process of recruiting personnel which can be the core personnel in later years.

\textsuperscript{139}OJT is effective in the Japanese companies in Japan because both managers and subordinates recognize that they are working as a team which is a part of the same organization. Cooperation for successful operation will benefit both of them in terms of salary and job-security.
OJT. The manuals are being revised to contain more concrete examples, although the difficulty of explaining know-how and administrative skills based largely on experiences is acknowledged.

Bank B seeks to educate its Indonesian employees as generalists with skills to manage basic procedures of three main business activities of bank (deposit; lending and exchange) by OJT, in-house seminars and job rotation. The interviewee stressed that its Indonesian employees are able to do what they are told to do, although it takes longer than it would for equivalent Japanese employees. However, Indonesian employees still lack the ability to improve standardized procedures or cooperate more closely in order to enhance work processes. The bank often sends the employees to outside seminars. Popular courses are lending, foreign exchange and clerical work. The outside seminars are only complementary to the in-house seminars and OJT. The bank financially supports initiatives by its Indonesian employees to seek personal development of the employees through education and courses.

Bank C currently has some 3,250 employees. About 800 to 850 of them are called "officers" and the rest "non-officers". The officers have been or are being trained under the Program Pendidikan Eksektif, an intensive personnel fostering program. The program lasts 11 months, including OJT. The officers have to take examinations every three weeks in the special subjects such as 'concept of bank' and 'culture of bank business'. The bank recruits graduates with degrees in law, engineering, theoretical mathematics and so forth. The program offers a number of economics related subjects. After the lectures, employees are assigned to branch offices for practical training.

The bank offers its employees three categories of training: Technical development programs which include Credit and Marketing, Operation and Technology, Treasury and Capital Market; Managerial training; Personal Development. The bank designed some programs internally, but also sends some employees to outside seminars. A total 34 training programs is available which range from teller operation and book-keeping to international banking management and monetary transactions for import-export business.

(2) Training Practice: Overseas Training
All the banks send a few employees overseas, but overseas training is not a major part of training. That is because understanding the business environment and developing a close relation with customers in Indonesia are considered to be important in banking. Bank A sends some employees to Japan, but the interviewee was not sure about the effect of this overseas training. He suggested that it might be difficult for the Indonesians to acquire

140The course is quite tough and in 1992 21 officers of 26 candidates passed. In 1993, only 11 out of 22 were expected to pass.
practical skills and know-how, because the gap between administrative capabilities of the
Indonesians and the Japanese in Japan is still large.

Bank B sends its Indonesian employees to Singapore and Japan. They are
expected to learn the know-how, skills and experiences which they cannot acquire by
OJT in Indonesia. These overseas training programs are organized on the basis of the
company's needs. For instance, when the bank required some foreign exchange
professionals, it sent some employees for special training to Japan.

Bank C has an overseas training program as well. It started a joint venture with a
major Japanese bank in 1989. The number of officers sent to Japan might increase later.

(3) Consideration
Banks A and B use OJT as a major method of training, because they regard learning from
experience as the most efficient way to acquire know-how and administrative skills in
banking. Indonesian personnel are deemed capable of doing what they are told to do, but
hardly venture beyond that. Despite the importance attached to OJT, both banks find it
difficult to conduct OJT in Indonesia. The first reason is that Indonesian senior
employees are not used to training their juniors. They do not consider training
subordinates as part of their work. Moreover, they themselves do not understand how
the work of each section is related to that of other sections and to the business of whole
bank. It is, therefore, difficult for them to transmit the idea that the work of the individual
and of sections are part of the larger organization, and that the quality of work by
individuals and sections affect the whole organization. Secondly, Japanese expatriates
stay for only 3-5 years. It is difficult for them to take leadership in conducting OJT. Even
though Japanese staff developed the system of OJT, there are apparent difficulties in
Indonesian employees continuing it by themselves.

Shortages and difficulties in training employees are met in the categories of loan
and legal officers, which require the experience, instruction and close supervision by
senior staff. Even in routine operations, Indonesian staff sometimes have to handle
unusual problems. Since the major customers of the Japanese banks in Indonesia are
Japanese joint venture companies, it is relatively easy for Japanese nationals to sort out
the issues. But Indonesian staff has to be closely guided in liaising with Japanese
customers.

4.4.4 Training Practice: Differences and Incentives

There is no major difference in terms of training practice between Bank A and B. They
both try to develop Indonesian employees as they would do in Japan and educate these
employees so that they will be able to attend to Japanese customers in Indonesia. As
Bank B also has Indonesian companies and public institutions as its clients, it requires Indonesian personnel with the abilities and initiative to attend to Indonesian-speaking clients. Bank B was originally established to promote *pribumi* business but 1988, 65% of its loans were to Japanese joint venture companies.

Bank A is a 100% Japanese bank and 70% of the equity of Bank B is owned by Japanese partners. Their offices exist in Indonesia to serve their major customers branches which were established in Indonesia by production relocation. Both banks consider it too costly to accommodate a number of Japanese expatriates in Indonesia so that both banks would like to improve the capabilities of Indonesian staff and extend their responsibilities. Bank B intends to involve Indonesian managers in the decision-making processes. But at the moment, a major task of Indonesian staff is to assist the implementation of decisions about planning and operation strategy made by Japanese staff.

Bank C does not have the option of expatriate staff to run the business. It has to develop all types of personnel in order to maintain and improve productivity and quality of service. This is the main reason why Bank C has coordinated a systematic training program. The bank is now organizing its employees into teams and units in order to further “team spirit” for among employees. They are expected to learn the concept of *Kaizen* (continual improvement). Obviously, Bank C is feeling the growing pressure of competition among private banks in Indonesia and anticipates a growing role of private commercial banks in the Indonesian economy. The training program of Bank C clearly has a key role in Bank C’s corporate strategy.

4.4.5 Training Practices: Sufficient Conditions

Banking has changed rapidly in Indonesian since 1980s. One important issue in this sector is that employees are taught to be flexible and keep up with drastic changes in their work. This section will consider how the interviewed banks seek to enhance the flexibility of their employees.

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141 Bank A has 13 Indonesian and 5 Japanese managers. Below manager level there are 8 Japanese staff. The controller is a Japanese person. The highest position occupied by Indonesian staff is the section manager who is treated as a deputy department manager. There are a Japanese General manager and Japanese deputy general managers who are in charge of the operation of branch offices. In Bank B, two directors out of three and 9 managers are Indonesian. There are one Japanese director and 9 Japanese managers.

142 The bank has 54 branch offices. Each area and branch has human resource administration section for all types of personnel related issues, including training.
(1) Recruitment
Banks A and B do not find it difficult to recruit 'trainable' employees. They do not recruit new people regularly but keep records of uninvited applications by university, academy and high school graduates for general starting positions.143 Once in a while the banks select candidates from these records. Bank A only advertises for the positions which require professional skills and know-how. Proficiency in English is considered an essential prerequisite. Bank B has not advertisement for four and half years.

The officers of Bank C are recruited only from the outstanding Indonesian universities. The bank recruits graduates with various backgrounds, including Humanities and Social Sciences.144 Universities often invite the bank to present itself to students. The bank also selects candidates from the general allocations it received from graduates. It rarely advertises job vacancies. It also considers fluency in English to be important. Applicants for an officer position have to take aptitude and psychological tests. Only the graduates with Sarjana 1 or above are eligible to apply for a position. Non-officer positions are open to those who with Diploma 3 or higher.

(2) Compensation System
The rapid expansion of the banking system has increased the phenomenon of job-hopping of trained personnel. The exact scale is not known, but a few employees from Bank A and B moved to another bank each year, while the turn-over rate of Bank C is around 10%. In order to attract and maintain highly qualified personnel, the banks have kept modifying their compensation systems to reflect capabilities and achievements of employees in wage and job status.

Bank A divides its managers and candidates manager into a “capable” group and a “less-capable” group. People in the first group are usually required to do more work. But higher capabilities and performance are both reflected in higher salaries. In this respect it appears that the compensation system in Japan of Bank A is still more influenced by seniority. The compensation system in Japan has more influence of seniority than in Indonesia. Bank A has modified its compensation system to include performance related pay. Except by increasing wages, the bank finds it difficult to motivate its Indonesian personnel. The interviewee suggested that Indonesian personnel in general do not have a concrete image of success in career and life, which means incentives such as increasing responsibilities and providing new challenges hardly work.

143Half of the Indonesian staff in Bank B are university graduates and a majority are from public universities.
144The universities include: University of Indonesia, Institute of Technology, Bandung, Pajajaran University, Airlangga University, Diponegoro University, Brawijaya University, IPB, Prahyangan University, Trisakti University, Tarumanegara University, Unkris Satya Wacana, MBA in UI/IMG/IPB/LPPI/IPPM/Widaya Wiyata, Luar Negeri University, Gajah Mada University
Bank B uses a performance appraisal system which it brought in from Japan. A major problem here is that some Indonesian managers find it difficult to evaluate the performance of their subordinates. The problem is overcome by having Japanese staff as third appraisers. One or two of the most capable Indonesian employees are poached each year. In order to prevent this, Bank B modified its wage scale to contain a considerable increase of salary after three years of service, according to performance. But, that still leaves the problem that the bank does not value the problem-solving or decision-making abilities of its Indonesian staff very highly, which means that opportunities are limited for Indonesian staff.

Bank C assesses staff performance at least once a year. In case of extremely good performance, positions and salaries are revised twice a year to meet performance. The bank offers the employees a basic salary, bonuses, special housing and car loans, pension plan, medical fees, insurance company cars, etc. Appraisal and compensation are mainly performance-oriented, but salaries continue to increase even if performance is considered to be average. However, chances of promotion are limited.

Bank C is now organizing two projects for better personnel management. One intends to improve the working environment, build function teams, promote employees' morale, modify the personnel structure according to requirement. The other is the establishment of an Assessment Center, which will specialize in assessing the quality of candidate managers for fair promotion. The center will assess knowledge, skills and behavior and will report to the director concerned.

4.4.6 Conclusion

Personnel training is conducted in all three banks interviewed. The banking sector is able to attract well qualified trainable personnel, because of relatively high salary145 and the convenient work locations. Hence, job-hopping among highly educated people in the banking sector is now not as serious as in the past and in the manufacturing industries discussed earlier. Since Banks A and B mainly serve Japanese customers in Indonesia, there is a limit to training and the delegation of authority to Indonesian staff. It means that organizational skills, which Japanese companies often consider to be important, are not diffused among Indonesian staff. In contrast, the Indonesian bank C has steadily developed its personnel through carefully managed training programs. But then it most likely felt the competition in the banking sector much more than the other banks.

While offering training, all three banks are making efforts to keep capable personnel by coordinating salaries and promotions according to performance and

145Interviewees suggested that average salary in the banking sector would be between Rp. 1 million and Rp. 1.5 million.
capabilities. Administrative skills and know-how in the banking business are difficult to acquire without practical experience. The general level of skills required in the banking business are: Firstly, understanding how the structure of a bank is organized. It is important to know how divisions, sections and units are interacting to run the business, as well as to learn certain steps and rules to conduct one's work in the organization. Secondly, employees have to acquire administrative skills and know-how to cope with various unusual situations. Successful employees must have problem-solving and decision-making abilities, while considering the influences of their work on other parts of the company. In addition to these basic factors, certain positions such as loan officers require the abilities to grasp the recent developments and future trends in industrial sectors and to develop a close relationships with major customers. In general, it takes a long time to foster a bank officer so that the banks have to acquire these specific abilities, which means that the banks have to continue their efforts to maintain trained and trainable personnel.

The Indonesian bank in this study is more actively and systematically pursuing personnel training. The main reason is that Banks A and B function as a special bank for Japanese joint ventures. Their operations and expectations are more limited than those of Bank C. This bank faces considerable domestic competition, which forces it to engage itself in personnel training. The Indonesian banking sector has been still adjusting itself after a number of dramatic changes since the early 1980s. The Japanese banks function as a special bank for the Japanese companies. In contrast, private Indonesian banks such as Bank C must compete with one another to survive the uncertain period. It is natural that they should develop their own leaders in the finance sector.

With reference to Table 2, it is possible to say that Bank C is more representative of the situation in which financial institutions find themselves in Indonesia today. Fierce competition in a rapidly growing economy occurs at a time when the banking sector is under increasing political pressure to improve its record. Most of the criticism is directed at the poor performance of state banks, which suffer from high shares of non-performing outstanding loans. But this critique indicates that the banking sector as a whole is required to improve to meet the higher standards of service which its customers have come to expect. Adequate training of personnel appears to be a key element in the efforts of banks to meet these present expectations and face the challenge of the future in domestic and international financial markets.
4.5 Conclusion

4.5.1 Training and Personnel Development

*Development of Technical Capabilities*

Indonesian personnel in the manufacturing companies interviewed for this study are able to manage routine operation and maintenance by themselves. After they were instructed, they are able to carry on the same production processes as well as to maintain the facilities and production organizations. All of the companies interviewed organized training for the development of local technological capabilities in Indonesia and in Japan. A major method for the transfer of technological capabilities is On-the-Job Training (OJT), which stresses the importance of direct contacts between those who have acquired certain technological capabilities and those who have not. However, technological capabilities beyond mere operation and maintenance still have to be developed further. At this moment, Japanese experts are still required to support Indonesian personnel and to repeat the instruction processes when standardized procedures have to be re-organized for changing product models and production processes changes.

*Development of Managerial Capabilities*

Unlike the development of technological capabilities, training for the development of managerial capabilities has not been fully organized in both the automotive and the electronics industries. Most of the positions of section managers are occupied by Indonesians who have been educated within the companies by OJT. But that does not mean that their performance matches that of Japanese managers in the same positions. Two automotive companies and one electronics company have recently started to pay more attention to the development of managerial capabilities by offering more systematic training. Compared with some of other foreign joint ventures, it seems that Japanese joint ventures are lagging behind in the development of the managerial skills of their Indonesian employees. These companies are expected to emphasize this shortfall in the near future.\(^\text{146}\)

\(^{146}\)International Development Center (Japan), *Survey for Development Planning*, March, 1992. My interview with Unilever: Unilever seems to be cooperative for educating personnel in developing countries. Their active training activities were reported in ILO, *Multinational's Training Practices and Development*, Geneva, ILO, 1981. My interview showed that the company has organized managerial training programs well. It offers an intensive training program which is similar to Bank C's. The program lasts 11 months, including 3 month OJT. After that, the company sends its personnel regularly to the training centers in London and in the United States. It also holds a training seminar in ASEAN and in-house. A total of 184 managers and assistant managers (68%) have attended at least one managerial training course. Unilever, a mature multi-national company, has its multi-cultural management style "Cross Fertilization Management". 10% of the managers in Indonesia are foreigners and 7 Indonesian managers are appointed to positions overseas.
Development of Professional Capabilities in Banking

Two of the interviewed banks have operated in Jakarta for nearly forty years and professional capabilities in banking have been gradually developed there. The Indonesian staff can manage routine work such as serving customers for deposits, transfers and withdrawals, and exchanging foreign currency. However, the Indonesian staff often need the support of foreign managers when unusual problems occur. Moreover, Indonesian managers lack the ability to re-organize their subordinates when the amount and types of allocated work change. In addition, the Indonesian staff are not fully aware how their work and that of others are connected. The banks offer both OJT and Off-JT programs to the Indonesian staff. The Japanese managers consider OJT as the most important training because crucial positions such as those of loan officer and a legal officers can only be occupied by only those who have relatively long experience in banking and who have been trained by OJT.

4.5.2 Incentives and Disincentives for Training

There are several factors which can be identified as incentives or disincentives for training activities by companies. We will distinguish four major factors and three complementary factors.

**Major Factors**

(1) The most influential factor are the future business perspectives of the industry involved. It is natural that companies are willing to invest in production technology and in the development of the technological capabilities of personnel when it expects an expansion of markets, or when competitive pressure forces it.

The manufacturing firms only experienced one of these two factors when they produced for export. Even though many of the export-oriented companies are producing standardized products, they acknowledge that upgrading the abilities of Indonesian personnel is a necessary prerequisite for entering international markets successfully. Their products have meet international quality standards and often have to be competitive in price, based on productivity, as well, because competitors are also located in low-wage countries.

Oppositely, most of the import-substitution type assembling companies see only uncertain market conditions. It is unclear whether they will continue to enjoy the same level of government protection. On the other hand, they face little competition in the domestic market. Both factors are reasons for them to withhold investments in furthering production technology and human capabilities. They rather try to make the best out of their investments in the past.
The two Japanese banks are an exception. They have been in Indonesia for a long time and have experienced a gradual growth of business during the past 25 years. They have little reasons to assume that their growth of business will end in the near future. Still, it is possible to note in these cases that the training and promotion opportunities of Indonesian staff is limited, because the banks target Japanese customers in Indonesia. The customers seem to prefer to handle matters with Japanese staff, which contributes to the fact that the involvement of Indonesian staff in decision-making processes is limited.

(2) Diversification of production processes is also a common incentive for establishing training facilities. The variation in the products of the manufacturing companies may still be low, but production processes have been diversified. Either because government policies forced companies to replace imported parts with domestically produced parts, or because companies have entered new types of business. Banks, especially Indonesian banks, also try to create new financial services and expand their business domestically by establishing new branch offices. The interviewed companies usually invite experts from Japan to provide intensive training for the introduction of changes in products and production procedures.

(3) Relative shortage of labour followed by increasing wages can be a major reason for training the skills and improve the productivity of existing Indonesian personnel. None of the interviewed companies found it really difficult to recruit enough trainable Indonesian employees for low-level jobs, prepare these people for specified jobs by training them internally, and improve their skills later for jobs which require more skills.

However, the manufacturing companies experienced personnel shortages in middle and upper-level positions, such as in production technology, quality control and administrative management. The acute shortages make it very difficult for companies to establish training programs. It generally takes a long time to train people for these positions and they can easily be poached by other companies, given that the turn-over rate of highly qualified personnel in the interviewed manufacturing companies is around 20%. The shortages appear to have encouraged head-hunting through higher wages rather than the reinforcement of training programs for managerial skills.

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147 For example, motorcycle company C established a water-pump division. Many consumer electronics companies in Indonesia have also started the production of water-pumps in the late 1980s.

148 Although most of the companies interviewed in October and November 1993 were generally worried about the impact of the increase of minimum wages in 1994, most were actually paying nearly twice the current minimum wage to factory workers. Apart from the fact that workers may perhaps expect some increase in wages, it is difficult to see how the increase of the minimum wages would affect companies as those interviewed.
The banks appear to be in a favorable situation in this respect. They generally offer a relatively high wage and are located in major cities, which seem more appealing places to live than remote industrial sites.

(4) Specific strategies of multinational corporations, which are common in both of the industries studied, encourage the establishment of training opportunities in specific field or processes. The global operations of the parent companies often allocate specific tasks to subsidiaries, which require companies to establish training facilities.

For instance, one strategy of Japanese automobile companies is to make the production of parts in the ASEAN countries more complementary. They have increased their efforts to develop the local technical capabilities for the production of engines and related parts.

A similar major strategy of electronics companies is to allocate the production of different products to different subsidiaries in different countries. These companies often aim to make the Asian region as a whole self-sufficient in consumer electronics and encourage the exchange of products between Asian countries, rather than have factories in each different Asian country produce a large range of different products. For instance, two major companies are considering to develop a branch company for the production of refrigerators and refrigerator parts in Indonesia, because they do not yet have a refrigerator production site in ASEAN, which can meet the demand in the ASEAN countries together.

Complementary factors
(1) Needless to say, a competitive recruitment and compensation system can be a major complementary factor in proceeding with advanced training facilities, because it can assure that a company will indeed reap the full benefits of investments in such training facilities. Most of the Japanese joint ventures in this study have recently restructured human resource management systems in order to be able to withstand the fact that other companies seek to poach their qualified and experienced managers. An adequate compensation system may therefore encourage training practices.

(2) The past development of the global operations of companies is a factor which encourages a company to expand its operations in a particular location. The location and operations of previous investments influence the way a company considers the operations in Indonesia. The case of the tire company illustrates this point best. The two main aspects which made the company decide to invest in Indonesia were the fact that it had already developed a procurement network in the Southeast Asian region and the fact that

149Such a strategy is often reflected in the management style. For example, the parent company of electronics company A has divisions for specific products, which each operate like single companies in the global strategic planning of the parent company.
150Electronics company B has established a compressor plant in Indonesia on the basis of this strategy.
it could control the operations of branch companies in other parts of the world. Indonesia fitted the options of the company best, when it decided where to invest in establishing a production plant and in the training of local workers.

(3) Active participation of Indonesian personnel can facilitate the development of training programs. The cases of the electronics companies A and B showed that the differences in the management style of the Indonesian partner companies and in particular their perceptions of the use of human resources in production had a different impact on the establishment of training practices. Further details from the other interviewed companies confirmed the point that an active involvement of capable Indonesian personnel in the establishment of training programs enhances the results.151

4.5.3 Consideration

All companies discussed in this chapter conducted training of their Indonesian employees. They are required to do so, because new employees generally do not have the capabilities which are required. The pre-employment education and training system is not able to overcome this problem.

The companies have different experiences in the training of Indonesian employees. Several possible specific incentives and disincentives have been discussed. A major factor looming in the background is the global operations of the parent companies. How these companies see the position of their subsidiaries in Indonesia in these global operations depends very much on the business environment in Indonesia. Several interviewees suggested that the current business environment in Indonesia is still insufficient to enhance Indonesia's importance in the strategic plans of parent companies. This refers to economic policies as well as the available infrastructure, and in particular Indonesia's policies relating to human resource development. The wider Indonesian business environment is one factor impeding the involvement of companies in training beyond training Indonesian employees to manage routine jobs.

However, it is undeniable that the interviewed companies have contributed to the development of Indonesian personnel through company training programs. One may expect that when the government starts to provide further incentives and guidelines for company training, that private companies will be encouraged to provide facilities in this field. For that to happen it is important to recognize how company training programs have actually contributed to the development of the Indonesian work-force and how it has

151For example, a comparison of local technological capabilities by Samsung Electronics and electronics company C's branch in South Korea suggests that an enthusiastic and active involvement of the local partner in the establishment of training facilities is important. Both partner companies had an employee with an engineering background in charge of personnel management and in both cases these managers successfully stressed the importance of human technological capabilities in developing the production of goods with export quality.
actually benefited companies. The next chapter will discuss this in more detail and will briefly outline the potential role of companies in the further development of the Indonesian work-force.
5. Contribution of Company Training

5.1 Introduction

As industrialization progressed, the total value of production of the manufacturing sector increased in developing countries and a diversification of production activities occurred. When principal industries of a country shift from low value-added labour-intensive industries towards more diversified technology or capital-intensive industries, the quality of labour becomes more important. Two important quality aspects of labour are managerial and technological capabilities. With better managerial capabilities one can enhance business opportunities, coordinate production factors to produce profits and maintain or improve a production system. Managerial capabilities are necessary for allocating limited production factors effectively and utilizing accumulated capital to diversify production activities into production with higher value-added during industrialization. With better technological capabilities it is possible to absorb and modify various technologies to be applied to production processes. In that case an entrepreneur can coordinate the different use of technologies or invent new technologies for more efficient production. For a smooth transition from an agrarian society to an industrial society, the upgrading of manufacturing skills and technical knowledge is crucial to a developing country.

In the process of industrialization, developing countries often find it difficult to continuously supply the workforce with the technological capabilities and managerial capabilities in demand. They often take a supply-oriented personnel development approach. In this approach, the supply of personnel and assumptions about the types of education and training which would generate higher returns determine the coordination of the education and training system. However, the supply-oriented approach often resulted in a mismatch in quantity and quality between the workers produced by the education and training system and the type of workers industries actually demand.\footnote{The reasons for this mismatch are discussed in chapter 1. In short, the reasons are as follows. First, developing countries have limited resources for personnel training in pre-employment education to keep up with rapid industrialization. Second, the prediction of labour market trend is often not reliable because of poor data collection and analysis in the developing countries. Third, since the linkage between education and industries is often weak in developing countries, it is difficult for this approach to predict the quality and the quantity of the workforce in demand. Even if the prediction can be made, it is not easy for the supply-oriented approach to flexibly coordinate the pre-employment education system according to continually changing needs on the demand side. In addition, developing countries have no stock of experienced workers who can adjust their capabilities before the supply oriented approach reorganizes the education and training system. Unlike developed countries with a long history of industrialization, a labour market of a developing country does not supply the experienced people who can modify their capabilities to meet the qualifications in demand.}
One possible way to improve the situation is to encourage the participation of those on the demand side in training, and to integrate their existing training practices into a vocational training system. When developing countries enter new industries, especially technology or capital-intensive industries, foreign companies often play an important role as a channel of technology and as an agent, conducting training of local personnel.\(^{153}\) Singapore has succeeded in mobilizing those on the demand side, especially foreign companies, in its technological development. Malaysia has already started to promote training activities by the companies. If Indonesia would like to utilize foreign companies in a similar way, it might be useful to see what capabilities its industrial workers have acquired and how they have been trained. What can motivate the training of personnel in foreign companies must be considered in order to utilize the training resources of such companies more effectively. This chapter will elaborate that it would be efficient to combine training activities of foreign companies, and then local companies, with the national vocational training system to promote the wide diffusion of technological and managerial capabilities.

Three case studies have been conducted, described in Chapter 4, on the basis of the idea that an integration of company training practices into a vocational training system is an important process in developing the industrial work-force, especially in developing countries. The case studies aim to show how Japanese companies\(^{154}\) have been involved in training Indonesian workers in the automotive industry, the electronics industry and the banking sector. The case studies show that company training of Indonesian employees is common among all the companies interviewed. They also illustrate what factors could be the incentives for the training provided by companies. The results suggest that the current business environment in Indonesia fails to offer strong incentives for company training, so that a rapid expansion of company training activities cannot be expected. Indonesia lacks the physical, human and financial resources to conduct vocational training to develop its industrial work-force. It only uses the supply side's finance, which means that more efforts can be expected when the resources at the demand side of the labour market can be mobilized. Especially

\(^{153}\)For example, the spin-offs from foreign companies contributed significantly to the development of technological capabilities in Taiwan. Simon, D.F. Taiwan, Technology Transfer and Transnationalism: The political Management of Dependency, Berkeley, University of California Press, 1980. A study by ESCAP on Thailand shows that a major actor of technology transfer is the foreign companies. Foreign joint ventures in which more than 50% is owned by foreign partners. They spent 57% of total expenditure on the introduction of new technologies in Thailand. ESCAP-UNCTC, Cost and Conditions of Technology Transfer through Transnational Corporations, Bangkok, ESCAP-UNCTC 1984. The diffusion from Export Processing Zones in several developing countries was also discussed in ILO-UNCTC, Economic and Social Effects of Multinational Enterprises in Export Processing Zones, Geneva, ILO, 1988.

when industries are in their infancy, the presence of foreign companies can be used effectively for the development of local technological and managerial capabilities. In this chapter we will first examine the contributions of company training to the local work-force development. Then, a future role of company training and better utilization of training resources by foreign companies will be considered.

5.2 Company Training and Its Contribution

When the effects of foreign investments are considered in terms of personnel development, there are at least three major channels to contribute to a country's personnel training. One is the formation of a stock of personnel familiar with relatively new facilities and more sophisticated working processes. Another is diffusion of recent technical and managerial capabilities as well as organizational capabilities. The diffusion happens by means of turn-overs, imitating and subcontracting. The last are companies' efforts as corporate citizens. Each of three channels will be discussed below.155

5.2.1 Formation of the Industrial Work-Force

Between 1967 and 1990, a total 790,000 Indonesians have worked for foreign joint venture companies.156 In 1993, more than 100,000 local personnel are employed in Japanese joint-ventures. Japanese joint-venture companies employ over 20,000 in the automotive and parts companies, while the electronics companies employ slightly over 10,000. Japanese joint-venture banks have about 1,500 employees.157 Considering that Indonesia has a labour force of more than 75 million people and that 2.3 to 2.4 million people will join the labour market annually during the next five years, the employment created by these joint ventures seems to be very small. However, the contributions of the companies, in terms of improving technical and managerial capabilities, should not be overlooked. What the local work-force could learn from the training and experiences in the foreign joint-ventures cannot be easily acquired in pre-employment education or vocational training courses. One advantage of company training is that workers learn technical capabilities together with managerial capabilities.

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155 Concerning imitation, sub-contracting and corporate citizenship activities, only the cases of manufacturing companies will be examined. There is no equivalent system to sub-contracting in the banking sector. Regarding imitation, the importance of team-spirit and a banking syndicate were mentioned by the Indonesian manager interviewed for the Case Study 3. There is no corporate citizenship activities in the banks interviewed.

156 Source: BKPM (Capital Investment Coordinating Board in Indonesia).

157 All data about Japanese companies are based on information from the Japan External Trade Organization (Jetro).
The latter coordinate the organizational production process for the application of the former.

As mentioned in the case studies, some assembly industries may lead to the development of numerous types of technical skills as well as managerial skills, such as efficient procurement. The experiences of industrialization of Japan, NIEs and some ASEAN countries have indicated that international competitiveness increased in a wider range of products during the process of industrialization. The dependency on a small number of export products gradually decreased. This diversification of products, especially export products, often occurred by shifting from labour-intensive production to capital or technology-intensive production. This shift is usually supported by the use of accumulated capital from the labour intensive sectors as well as an accumulated stock of personnel with upgraded technological and managerial capabilities.

Indonesia’s competitiveness is still in labour intensive industries. A major portion of the value added in the manufacturing sector comes from labour intensive industries.\(^\text{158}\) Two industries in this study were requested to establish a factory two decades ago because of import-substitution policies. They still depend heavily on the protection of the domestic market against imports. Little competition in the domestic market has helped these companies to sustain themselves in the small domestic markets. In a way, it hampered the improvement of cost management, productivity and quality. Consequently, local capabilities, especially technological capabilities, have not been developed as much as they could have been.\(^\text{159}\)

If Indonesia intends to follow its neighboring industrializing countries, the accumulation of quality personnel is as important as capital accumulation. Even though the foreign investment projects account for a small portion of total invested capital, they have been contributing to the development of Indonesia by introducing different

\(^{158}\) Major Industries in Indonesia, 1989

<table>
<thead>
<tr>
<th>Value Added</th>
<th>%</th>
<th>Exports</th>
<th>%</th>
<th>RCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>14.8</td>
<td>Wood Products</td>
<td>9.1</td>
<td>Wood Products</td>
</tr>
<tr>
<td>Textile</td>
<td>11.6</td>
<td>Garments</td>
<td>7.1</td>
<td>Footwear</td>
</tr>
<tr>
<td>Wood Products</td>
<td>11.6</td>
<td>Footwear</td>
<td>2.7</td>
<td>Garments</td>
</tr>
<tr>
<td>Food</td>
<td>10.8</td>
<td>Textile</td>
<td>2.6</td>
<td>Furniture</td>
</tr>
<tr>
<td>Basic Metal</td>
<td>8.3</td>
<td>Nonsteal Metal</td>
<td>1.6</td>
<td>Textile</td>
</tr>
</tbody>
</table>


\(^{159}\) For instance, Automobile Company A could achieve higher productivity and quality if several processes and facilities are changed. However, the current market trend does not allow the company to do make reinvestments or plan refurnishing.
production technologies and managerial techniques to the manufacturing sector.\textsuperscript{160} Technology transfer in these technology intensive industries is expected to facilitate future transition of industrial structure in Indonesia. It seems that Indonesia needs to reconsider and adjust its import-substitution policies and the protection of the domestic market for stimulating technical progress. In order to improve infant industries, they have to be 'shocked' once in a while by the introduction of limited competition.\textsuperscript{161}

As mentioned in the case study 3, the improvement of the formal service sector, including banking, insurance, transportation, storage and trading and so on, is interacting with the growth of the manufacturing sector in the process of industrialization. The example of the banking sector shows that, because of a series of deregulations, the central bank's control over the entire banking business was loosened and both the state banks and private banks were encouraged to operate independently. The growth in private manufacturing industries, especially export-oriented industries, has changed the demand for banking services. Bankers consider that upgrading of banking services to international standards is a necessity for the further development of industries and enhancement of exports. In order to meet the needs for better services, learning from experienced foreign experts would help the formation of professional personnel in the banking sector.

5.2.2 Diffusion of Personnel Capabilities

The diffusion of technological capabilities and managerial capabilities from a company occurs by means of turn-overs, imitations and subcontracting. For each company, which invests in the training of personnel, turn-overs are a loss of return on its investments. However, it is beneficial to a developing country as a whole if those workers with skills and knowledge move to another company and pass them on to a whole, total foreign investment is small in comparison with domestic investment. A series of deregulations promoted a rapid inflow of foreign investment since 1987. However, the value of foreign investment value is still one-third of the total investment between 1987 and 1990. A large portion of foreign investments entered several highly technology or capital intensive industries, where Indonesia still needs higher technologies.

Investments in Machinery and Electronics Industries by 1990 (million US$)

<table>
<thead>
<tr>
<th></th>
<th>Total Investment Value(1)</th>
<th>Foreign Investment Value(2)</th>
<th>Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Machineries</td>
<td>35,836</td>
<td>19,706</td>
<td>55.0</td>
</tr>
<tr>
<td>Electric Machineries</td>
<td>34,071</td>
<td>23,389</td>
<td>68.6</td>
</tr>
<tr>
<td>Electronics</td>
<td>53,228</td>
<td>17,800</td>
<td>33.4</td>
</tr>
<tr>
<td>Engines</td>
<td>66,916</td>
<td>66,558</td>
<td>99.5</td>
</tr>
<tr>
<td>Automotive Parts</td>
<td>62,402</td>
<td>21,247</td>
<td>34.0</td>
</tr>
</tbody>
</table>


\textsuperscript{160}On a whole, total foreign investment is small in comparison with domestic investment. A series of deregulations promoted a rapid inflow of foreign investment since 1987. However, the value of foreign investment value is still one-third of the total investment between 1987 and 1990. A large portion of foreign investments entered several highly technology or capital intensive industries, where Indonesia still needs higher technologies.

\textsuperscript{161}For example, the import tariffs of completely built-up motor vehicles and parts were dramatically reduced in Thailand in 1991.
untrained personnel. Skills and know-how can also be acquired or developed by imitation. Imitation often depends on licensing contracts and technical assistance agreements. Sub-contracting encourages technology transfer, including upgrading the personnel of sub-contractors. Fair competition between sub-contractors will also lead to the improvement of both the quality of products and productivity. These three channels of the diffusion of personnel capabilities will be discussed in the following section on the basis of my own interviews and some written materials about several other companies.

**Turn-over**

A turn-over rate of 5% is generally considered 'natural'. Turn-over rates differ largely according to job level. Most of the companies interviewed have no difficulty maintaining factory workers or mechanics. A few of the most capable and productive workers resign and move to another company each year. In other, more labour-intensive industries such as textile or parts manufacturing, the monthly wage is lower than that by the assembly companies by Rp.20,000 to Rp.50,000. Such companies have more competitors, including East Asian companies. They therefore endure more frequent job-hopping than the large-scale assembly companies. Since most of the interviewed companies do not experience a labour shortage at the level of factory workers, they replace people who resigned with new-comers and provide necessary training.

The main concerns of the companies are the turn-over of technicians, engineers, computer programmers, QC professionals and candidate managers. In manufacturing companies the turn-over rate of the personnel with tertiary education during first five years constantly exceeds 20%. The turn-over rate after overseas training is about 15 %. In the banking sector, the turn-over rates are not as high as in the manufacturing industries, but one or two of the most capable managers or candidate managers resign each year. Because the local staff use excuses to resign, there were no complete data to show where they moved to. As far as the interviewees know, most of them either found a job with a higher salary in the same or similar industries, or in the formal service sector, especially in banking. When they moved within the similar industries, they often preferred American and European companies which usually offer a higher salary than Japanese joint ventures. Since 1988, the movement of personnel from the manufacturing sector to banks has been very common. Many company accountants were poached to become bank officers and many engineers to be loan analysts for the loans to manufacturing companies. The rest were invited to become an executive in small local firms and were offered higher salaries and a company car.
Personnel mobility in the interviewed companies seems to be still limited to a small area of large foreign companies, which compete to pay more and maintain better personnel. The diffusion effect by personnel mobilization is probably still small. In the sector of the interviewed companies, some case studies show that several workers or technicians, who resigned from Japanese joint ventures in Thailand and Malaysia, established a parts company, which started to supply to the companies they previously worked for. In Indonesia, this type of connection between the former employees and employers has not been reported. Trading corporations suggested that there are very few indigenous Indonesian business-minded people, who are willing to establish a business after they gain work experience in a large company.

However, according to the Jetro's report on technology transfer, many spin-offs from Japanese joint ventures are contributing to the upgrading of product quality, if a wider range of industries is examined. Especially some Japanese textile companies do not mind being called 'a training center' for East Asian and Indonesian textile and garments companies. Not only manufacturing skills and technological capabilities, but also working discipline like safety and quality consciousness, are considered important factors which former workers of a Japanese joint venture could transfer to others when they move to another company.

**Imitation**

The diffusion of technological and managerial capabilities has improved through the imitation of what other companies have demonstrated. This imitation process varies from simply disassembling an article and copying it, to introducing large-scale plant facilities coordinated by a foreign partner with whom a technical assistant agreement is reached. The experience of some Japanese investors indicates that the ability of imitating has improved in Indonesia. One case is a company which started as a repair shop and now has 26 branches all over the country.

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162 This is partly because the electronics industry and the automotive industry are dominated by foreign companies.
164 This point is based on the experience of Japanese trading houses, engaged in a number of trading deals with both Chinese and indigenous business people.
166 One distinctive example is PT Texmaco Tahan which has tried to develop production technology by recruiting experienced engineers from Japanese joint ventures and importing machinery. One of the most successful case is PT Gajah Tunggal and Yokohama Rubber Co. for automotive tire production. PT Gajah Tunggal has the largest share in the commercial vehicles tire market in Indonesia. The company has been increasing its exports to 50 overseas markets.
167 Data from the Japanese Bureau of Statistics.
workers there can duplicate any type of casting parts if they have an actual article. This company has made a large investment in capital goods and started OEM of cog-wheels. The other case is of a local small company, which borrowed some casting dies from a Japanese joint venture, copied them first and arranged different models for variable applications. Jetro’s information to potential Japanese investors in Indonesia suggests that the local business groups are capable enough to imitate and compete if the required capital is small and technological level is low.

Several industries also developed their technological and managerial capabilities by licensing contracts, technical assistance agreements, OEM and consultation. The technologies and managerial capabilities available through these ways are relatively standardized but arrangements are sometimes once for all. The Indonesian personnel have to be capable to use new technology as well as up-grade or modify it if necessary. Since Indonesia does not have a complete record of the imports of technology or intellectual property, it is difficult to examine the effects of technical support by foreign companies. Japanese exports of technology to the manufacturing sector of Indonesia was valued at some US$800 million between 1973 and 1988. The textile industry, the electronics industry, the automotive industry accounted for a large portion of the imports.\(^\text{168}\)

It is difficult to generalize but it seems that licensing and technical assistance agreements were used to complement the lack of relatively higher technologies in Indonesia. For example, local companies in the synthetics industry have acquired their technological capabilities by a technical assistance agreement from Taiwan and contributed to the rapid increase of textile production and exports since 1980s.\(^\text{169}\) A major reason of this success was that the production technology of synthetics was relatively standardized when the local companies entered the market. Many local automotive parts companies also have a technical assistance agreement with foreign companies, mainly with Japanese companies.\(^\text{170}\) The Japanese parts companies were often requested to offer technical assistance to the local companies by the assemblers.

Thus, the efforts by the local companies in catching-up by imitation have improved their technological level for production. Although it is difficult to describe how the local work-force has developed own technological and managerial capabilities by imitating what other companies have developed, presence of foreign companies as


\(^{169}\)For example, polyester staple was produced only by three major Japanese joint ventures until 1982. Until 1988 three local companies had started their production and their total production was 134 ton per day, compared to 174 ton per day by three Japanese companies. Polyester filament was produced only by a major Japanese joint venture until 1979. By 1988 five local companies had entered the market which produced nearly 200 ton per day.

\(^{170}\)One of the most successful cases is PT Gajah Tunggal and Yokohama Rubber Co. for automotive tire production. PT Gajah Tunggal has the largest share in the commercial vehicles tire market in Indonesia. The company has been increasing its exports to 50 overseas markets.
well as technical assistance seem to have contributed to the improvement. Licensing, technical assistance as well as OEM from foreign companies often offer personnel training programs.

**The development of supporting industries**

The development of supporting industries is one of the major effects expected from the establishment of assembling industries. Sub-contract networks often create a chance for small scale companies to acquire technology and training in order to be able to produce what is expected by assembly companies. In developing countries, where a large technological gap tends to exist between large-scale industries and small-scale industries, sub-contracting is assumed to promote the diffusion of higher technology. Sub-contracting is also expected to happen across regions and encourage regional development. Domestic parts production is expected to decrease the imports of parts and increase domestic value added.

The *Bapak Angkat System* (Foster Father System) is a major policy aimed at developing a sub-contract network in Indonesia. The purpose of the system is to encourage large-scale companies to support small companies technically and financially, and to develop them as supporting industries. However, it is said that this program has not been fully successful. Large state-owned companies and a limited number of large business groups, such as Astra Group are active in this system. Still, this program lacks a function as a match-maker between assemblers and potential supporting industries. Thailand recently started the BUILD system, which collects and analyzes data on the needs of assembling companies and recommends possible local suppliers of the parts. The Foster Father System needs to

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171 For the diffusion of technology, human resources development, and financial support of 1-5% net profit of state owned companies is used for the development of small scale industries. Conglomerates have been asked to sell a part of their shares to cooperatives of small-scale industries.


173 Astra Group's PT Astra Mitra Ventura and state-run company PT Bahana Mitra Usaha announced to offer technical assistance with Rp. 2.4 billion loan to six small scale industries. *Indonesia Business Weekly*, vol. 1, No. 41 (24 September, 1993). The group's joint venture in the automobile industry also offers training programs, especially for small-scale industries. Gobel Group's electronics company received the "Upakati" award for its support to small-scale industries acting as suppliers. Gajah Tunugal Group has two-third of ownership of PT Andayani Megah and Gajah Tunugal and its technical assistance partner, Yokohama Rubber Company Ltd. offer technical assistance to the companies.

174 For example, some of Japanese joint ventures were quite dismayed when they are asked to instruct local companies which would not be their subcontractors, because they are located in the same industrial park.

175 BUILD: Board of Investment, Unit for Industrial Linkage Development.
reinforce this type of function to strengthen the linkage between the large assemblers and the small-scale industries.

The interviews with the companies in this study did not provide many positive indications of development of supporting industries and sub-segment personnel development through sub-contracting activities. The lack of supporting industries is a major bottle-neck in the assembly industries interviewed in this study. The production lines of import-substitution type assemblers have been coordinated to simply assemble CKD (knock-down) kits. The import of mass-produced CKD kits is less costly than sourcing from local small manufacturers. Most small scale manufacturing industries categorised as 'manufacturing companies' in Indonesia are light industries, such as food processing and garments. Most of them have very little to do with other industries and other regions. At this moment, the technological gap between the assembly companies interviewed and most of the local companies is quite large so that it is considered difficult to develop them as supporting industries.

In terms of the diffusion of technology to small countries and further workforce formation by increasing employment, the development of supporting industries is as important as the personnel development for the assembly industries interviewed. In Japan before 1985, training, close information exchange and financial support by the assembly companies upgraded the technological capabilities surprisingly and developed highly skilled personnel among the small-scale supporting industries. Most of the automobile companies have a number of sub-contractors and 80% of parts were manufactured and semi-assembled by sub-contractors. The parent company of Electronics Company A in this study does only 30% of total production by itself. It has parts offices in overseas and procurement is carried out at global level. The following section will first describe the current situation of supporting industries in the automotive industry and the electronics industry. Then, it will consider whether Indonesia will be able to upgrade technological capabilities by the development of supporting industries.

Automotive Industry

In the automotive companies in this study, components are from local companies, other Asian countries and Japan. Because of the deletion list,176 about officially 75% of the parts of 1 ton commercial vehicles have to be made in Indonesia. The motorcycle company obtains about 50% of its parts in Indonesia, but the cost of imported materials and parts accounts for 60%. Since the purchase of parts constitutes more than 80% of total production costs, it is crucial for companies to manage procurement efficiently.

176The list specifies when and what parts have to be locally produced or purchased. The listed parts have to be deleted from imported CKD kits.
The investments from automotive-related industries accounted for a large portion of Japanese investments in the manufacturing sector in Indonesia in the 1980s. It is undeniable that more and more components, which were previously imported, have been replaced by locally-made products during the last two decades.

However, increasing local sourcing does not mean the development of a subcontracting network between the assembly companies and the local small-scale industries. The suppliers of major components are either Japanese joint ventures or subsidiaries of large business groups which have a technical assistance agreement with a Japanese parts company. The subsidiaries of business groups have been given a licence for the production of certain parts. A few parts companies are supplying to most of the major assembly companies. These parts companies still import materials and parts for the production major components. Second and third degree sub-contractors have not been developed in Indonesia. The diffusion of technology and of technological and managerial capabilities through sub-contracting has happened only a limited area of joint ventures and of local business groups which could afford a technical assistance agreement.

**Electronics Industry**

The development of supporting industries in the electronics industry is far behind other ASEAN countries. Most of the companies interviewed have three sources for their parts; local companies, local Japanese or Korean joint ventures and imports. The number of foreign joint venture parts companies is small and the number products locally sourced is very limited. Examples of procurement by two export-oriented companies will be briefly described will follow.

Electronics Company B-1 exports a standardized type VCR to North America. One VCR consists of between 700-800 parts. Since the cost of parts and materials is about 80% of production cost efficient parts, sourcing is a crucial factor in achieving a competitive price. The company imports 73% of parts from overseas.\\(^{177}\) Highly value added products such as integrated circuits (IC), capacitors and most of the mechanical parts are either from Singapore or Japan. Local companies only supply plastic parts or packing materials. In order to replace the imports from Thailand, the company's engineers have started to look for more local parts suppliers.

Electronics Company C mainly produces audio products, which are exported to Europe, North America and Asia, including Japan. Currently, only 30% of parts are purchased from some local suppliers and the rest is from parts offices in Japan and Singapore as well as its subsidiary and suppliers in Malaysia.\\(^{178}\) Local suppliers

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17738% from Singapore, 24% Japan, 9% from Thailand, 3% from Korea and 2% from Hong Kong.
178Japan 13.5%, Singapore 17.1%, Malaysia 40.7%.
include Korean, Singaporean and Japanese joint-ventures. The company purchases from local companies parts which do not require large machinery and much technical capabilities. The company is planning to source 80% of parts from 60 local suppliers in future. At this moment the company tries to produce the parts imported from Malaysia within the company in Indonesia. The company welcomes the recent relocation of electronics parts production from Japan.

The supporting industries of the electronics industry are not well developed and the diffusion of technology and human capabilities to small-scale industries has not occurred. The electronics industry in East Asia, Malaysia and Singapore started to develop by producing standardized components and end-products. Indonesia has started to go on the same path of development by receiving the relocation of the production of standardized products and parts from East Asia and Japan. Indonesia's inexpensive labour is an attractive factor to the companies but this advantage would be offset if procurement proves to be too costly.

Obstacles to the Development of Supporting Industries
The development of a linkage between the large assembly companies and small supporting industries encourages a wider diffusion of technology, technological and managerial skills. Those technology and skills accumulated in the work-force would lead to industrial development in other fields. At present, Indonesia lacks eligible small-scale industries which can be supporting industries of the technology or capital-intensive assembly industries. The sub-contracting linkage has not been developed in Indonesia. The diffusion of technology and the personnel development are not really promoted by the development of supporting industries. There are several factors which might discourage investments in supporting industries in Indonesia. This section will examine five of such obstacles, followed by a consideration of a possible way to promote supporting industries for the diffusion of technological and managerial capabilities to small-scale industries.

(1) Market Size
Supporting industries in Indonesia have to operate in relatively small markets. There are several regulations which seem to hamper companies in creating larger markets. For instance, a parts company outside the EPZ area without obtaining an EPTE status, must pay a number of taxes in order to supply the assembly companies. When the company would like to supply the companies in the EPZ, it is not certain whether its products are considered export goods or not. It is, therefore, virtually impossible to exempt their products from a series of taxes. It is not able to take advantage of import tariff
exemption on materials and parts for export products. If the company tries to export directly, it can only use the Drawback System which is not functioning efficiently.\textsuperscript{179}

When companies are located in an EPZ, they can be exempted from the restrictions of local sourcing and from import tariffs for parts/materials used for export goods. The deregulation of October 1993 allows the companies in an EPZ to supply 25\% of their export performance\textsuperscript{180}, paying back exempted import duties and other taxes. However, it is not clear what this 25\% of the export performance is based on. The products demanded locally and in the international market can be very different, which means that the companies find it difficult to market products domestically if they are not exported. Sales among EPZ and EPTE companies are exempted from import duties and other taxes. This indirect export is not considered 'export performance', so it is not counted when 25\% of exports is calculated.

The small domestic market and the difficulty to create larger markets seem to have kept investors away from supporting industries. The domestic market may currently be small, but it has a big potential. Hence, supporting industry type small companies should be given special attention which may allow them to access a big enough markets to survive. Some parts companies seem to prefer establishing a 100\% ownership company in Batam and try to expand export markets. This situation discourage new investments in supporting industries which supply the domestic market. It will enlarge the technological gap between the export-oriented companies and the import substitution companies.

(2) Finance for Small and Middle Size Companies

Special credit programs such as KIK (small scale investment credit) and KMKP (permanent working capital credit)\textsuperscript{181} started in 1974 for the development of small scale industries. However, these programs have not been targeting supporting industries. 70\% of total subsidized credit was given for equity reasons and a large portion was directed to short term and trading activities rather than longer-term manufacturing activities.\textsuperscript{182} Because of the decrease of the government oil revenue, the government decided to eliminate these directed credit programs.

The government started to reduce the amount of its liquidity credit with the June 1983 deregulation package. Because of the October 1988 package, the number of banks increased from 110 in 1988 to 184 in 1992. And the number of bank offices

\textsuperscript{179}It sometimes takes 6 months to 2 years to receive refunds. Paying interest over a loan for two years creates a considerable cost for such companies.
\textsuperscript{180}Companies in an EPZ must export more than 80\% of their products.
\textsuperscript{181}These programs offer a low interest rate because of subsidies from Bank Indonesia. The rate was 12\% compared to about 20\% from ordinary banks.
increased from 9,181 to 12,543. This change means that modern banking services are now much more widespread, reaching into the rural areas, where the smaller industries are. It is said that the quality of service has also improved because of the competition for deposits and credits. In 1990, the government created KUK (Kredit Usaha Kecil) for the development of small-scale business. All the banks, except the foreign branches and joint ventures banks, are obliged to provide 20% of their credit to small scale business. The definition of small scale enterprises was also changed to those which own assets up to the maximum of Rp.600 million, excluding land and buildings.

It seems that parts manufacturers were disadvantaged in using KUK facilities. The maximum company assets of Rp.600 million and the elimination of conditions about the percentage of pribumi ownership should have helped for supporting industries in capital intensive assembly industries. But the 20% quota of credits seems to discourage the lending to manufacturing industries. In order to avoid risks, banks tend to charge a higher interest with a 1-3% risk premium to small scale business. The banks tend to try earning the profits in a short period. Hence, the loans for small business are going to the service industries like trading, restaurants and hotels, rather than the manufacturing industries which often need larger investment capital for a longer term.

In addition, Indonesia's taxation system sometimes makes it difficult for small-scale companies finance their business. If assemblers in an EPZ lend machineries to supporting industries outside which cannot afford the machinery, they have to pay import tax which companies inside an EPZ or EPTE are exempted. Thus, sometimes the taxation system disturbs cost-effective production and the improvement of production technology in the small-scale industries.

(3) Technology and Managerial Capability
The basic idea of sub-contracting parts production is to obtain less expensive parts with the quality which assemblers require. Parts companies can only operate profitably when they can take advantage of economies of scale, which allow them to offer lower prices than the cost of parts to assembly companies, when these need to produce the

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183Pangestu, op. cit. p.87
184Foreign banks are requested to provide 50% of their credit for export related business. In this regulation, the status of indirectly exporting supporting industries is not clear and banks are discouraged to offer loans to supporting industries outside EPZ.
185It used to be 300 million in KIK and KMKP.
186The conditions used to be: (1) at least 50% pribumi ownership of shares, and a majority of pribumi in the board members; or (2) more than 75% pribumi ownership of shares.
187Half of the KUK has gone into the service sector such as trading, hotels restaurants. Of the rest, 16% was provided as consumer loans for housing, etc. The manufacturing sector received only around 10%. Most of it went to the textile industries and the food processing industries. Pangestu, op.cit. p.92.
parts themselves. Reasonable capital goods are required. They have to have access to technological and marketing information in order to produce the products in demand with the expected quality. In the highly capital intensive assembling industries, the original technological gap is too large for the local producers to produce parts for the assemblers.\textsuperscript{188} As mentioned above, it is also difficult to obtain loans to install up-to-date machinery.

Keeping deadlines is important, because assemblers would like to avoid over-purchasing and storage cost. However, local companies are not used to producing as a supporting industry and might not realize the importance of supplying on time. Supporting industries for the highly technology or capital intensive industries probably require managers with an engineering background, who have experienced the industry enough to have an overall understanding of technical aspects. However, since these assembling industries are premature, it is still uncertain whether this type of entrepreneurs will emerge from the existing companies.

In comparison with some other countries, technical support for small scale industries in Indonesia seems to lag. For example, Thailand has developed more supporting industries in electronics and automotive industries. Thailand seems to be more active in providing support, especially in technical assistance. The Sixth Five-Year Development Plan of Thailand addressed the promotion of small and medium scale industries. The engineering industries are considered the main focus of support in the plan. The Thai Management Development and Productivity Center (TMDPC) and Industrial Service Institute (ISI) were established under the Industrialization Promotion Bureau in 1962 and 1966 respectively. TMDPC offers instruction of management to entrepreneurs and ISI offers instruction and consultation to small and medium scale companies on both technology and skills. The Metal Industry Development Institute (MIDI) was established in 1989. It organizes skill training programs and processes policy issues. The Thai Industrial Standardization and Industrial Measurement Test Center organizes industrial standards and industrial measurement methods.\textsuperscript{189}

In Indonesia, the Agency for the Assessment and application of Technology (BPPT)\textsuperscript{190} is the main institution which supports industries in issues of technological development. State-owned companies are required to consult with BPPT, but private

\textsuperscript{188}For example, sub-contracting in rattan manufacturing has been common. Technology, skills and production system in large companies and small companies are virtually the same. Large companies often have more orders than they can manage to produce so that some production processed are sub-contracted to smaller companies. Hanafiah, D. \textit{Kajian Pelaksanaan Sistem Sub-Kontrak pada Industri Rotan Tegalwangi, Bogor}, Program Studi Ekonomi Sumberdaya, Jurusan Ilmu-ilmu Sosial Ekonomi Pertanian, Fakultas Pertanian, Institut Pertanian Bogor, 1989, quoted in Sato and Mihira, \textit{op. cit.} p.173-180.

\textsuperscript{189}Information on the development of the supporting industries in Thailand is from the Sakura Institute of Economics.

\textsuperscript{190}LIPI and BPPT have established several research and development institutes but a linkage between these institutes and private companies seems to be weak.
companies and foreign companies rarely consult this agency. BPPT has not established linkages with other major departments, such as Ministry of Industry. It seems not to function as a coordinator of technological development in industries. Concerning workforce development, each of the industrial associations are very active in coordinating training programs for the member companies in each industry.\(^\text{191}\) However, these training programs have not been developed in a way comparable to, for instance, the German apprenticeship program has been organized.

For *pribumi* small-scale industries, the Ministry of Industry coordinates the BIPIK-Sentra.\(^\text{192}\) These are the result of three main programs, *Sentra Industri Kecil* (small industry center), TPL (*Tenaga Penyuluh Industri Kecil*: technical trainers) and UPT (*Unit Pelayaan Teknis*: technical service units). The targeted industries are food, leather, hand craft, garment, building material and metal. When more than 20 companies of each industry exist in one area, a small industry center is built. TPL offers management and technical instruction, product test, assistance for designing, engineering and development of new products. According to the statistics from Ministry of Industry, 7,117 centers were established by 1990. These center contribute to the upgrading of technical capabilities in small companies. However, their role is supporting the self-employment in rural areas rather than coordinating industrial linkages.

(4) Transportation and Communication Systems
It is necessary for sub-contractors to have the raw or intermediate products on time and to deliver the processed products without any delay. For example, in Japan the production sites of parts are often located in semi-rural areas where the labour cost and the land price are lower. The provincial companies can still function as supporting industries to the assemblers in the industrial areas because communication and transportation are well developed. In Indonesia, most of the companies in Jakarta area are sourcing parts only within the Jabotabek region.\(^\text{193}\) Roads around in this region are rough and traffic jams disturb smooth transportation of products. Moreover, telecommunications systems are underdeveloped, which keeps small-industries outside the main industrial areas from participating in larger production linkages.

\(^{191}\)For instance, GAIKINDO (an association for automotive industries) offers QC seminars and management counseling. API (association for textile industries) has a training center for member companies and organizes seminars by Singaporean instructors. APSFI (association for synthetic producers) has a training facilities for members. GAMMA (association for metal and machinery industries) also organizes seminars, exhibitions and promotes the investments in production of metallic materials.

\(^{192}\)BIPIK: *Bimbingan dan Pengembangan Industri Kecil*.

\(^{193}\)The Jabotabek region includes Jakarta, Bogor, Tangerang and Bekasi.
Indonesia has a potential to spread supporting industries to less developed areas, provided transportation is improved further. Unlike Thailand and Malaysia where industrialization is concentrated around capital cities, Indonesia has steadily developed roads, ports and airports in regional industrial centers such as Bandung, Medan and Surabaya. Further development of regional infrastructure and the establishment of industrial linkages between the regional industrial centers are important issues for the country.

(5) Policies for foreign investment in supporting industries
Since Indonesia still lacks the technologies to produce particular parts and components and services, foreign investment can be a useful channel to obtain both capital and technology to expand supporting industries. At present, several regulations have kept foreign investment away from supporting industries, as follows. In order to promote foreign investment, some government organizations have started to contact foreign companies for feedback on which to bases their foreign investment policies.\(^{194}\)

(a) The minimum paid-up capital was too large for many supporting industries. The very recent deregulation abolished the minimum paid-up capital restriction for foreign investors this year. However, the minimum investment amount was US$500,000 until 1989, which was too risky to invest for many small and medium scale foreign companies. The October 1993 deregulation set minimum paid-up capital US$200,000 for supporting industries.

(b) Although Indonesia finally announced very recently that it would allow 100% foreign ownership in local companies, the conditions under which 100% foreign ownership used to be too restrictive.\(^{195}\) Moreover, small and medium scale companies were reluctant to divest quickly because they were afraid of that the company in Indonesia would use its technology and experience to challenge the foreign company in foreign markets.\(^{196}\)

(c) The domestic market is small and supplying both import-substitution companies and export oriented companies seems to be difficult and costly.

\(^{194}\)For example, the associations of Japanese companies and that of Korean companies in Indonesia submitted papers on the business environment for foreign investors to BKPM in 1993.

\(^{195}\)EPZ companies had to export 100% of production and 5% of equity had to be transferred to Indonesian owner(s) 5 years after the inauguration of commercial operation. The export requirement was changed to 80% with the deregulation in October 1993, but 20% of equity has to be transferred to local partner(s) in 20 years from the start of operation. Divestment starts after 10 years of commercial operation. Outside an EPZ, the minimum paid-up-capital for supporting industries was reduced to US$2 million but 51% of equity must be transferred to local partners within 20 years. Divestment should start 10 years after commercial production.

\(^{196}\)When foreign companies offer technical assistance, they often restrict the exports of products produced under the assistance program.
(d) The high interest rates in Indonesia made it difficult for small foreign companies to obtain decent returns in a short time. The technological level and business know-how of small supporting industries are not very elaborate, which means that local companies can easily catch up. Hence, small foreign companies must gain reasonable profits in a short time before their production technology and business know-how are diffused. However, the high interest rates in Indonesia make it very difficult for the small companies to obtain loans and to be confident in gaining profits in a short time. In addition, procedures involved in inviting foreign expatriates are complicated.

5.2.3 Corporate Citizenship Activities
Governments in developing countries expect large-scale companies, including foreign joint ventures, to contribute to the development of human resources as corporate citizens. There are several ways for companies to become voluntarily involved with the national development of the industrial work-force. Firstly, the largest contribution is that twelve large-scale companies in Indonesia have established a training center which organizes training programs for the public. Some of these centers give theoretical lectures as well as practical training at polytechnic level. Secondly, several companies support vocational training institutions by sending lecturers and providing facilities. Thirdly, they open their production facilities for practical training programs of public vocational training institutions. In addition, some companies are providing scholarships to both students and academics. They also conduct joint research projects with Indonesian educational institutions.

This section will briefly describe some corporate citizenship personnel training projects. The account is largely based on the experience of the interviewed companies. The interviewed companies include three banks and two trading houses. But the interviews indicated that these companies were hardly involved in training for the public as a part of corporate citizenship activities. The discussion will therefore be limited to the manufacturing sector.

Automotive Industry
Three out of the four companies have established a training center which is open to the public. These companies started their public training programs long before the government started consider the regulation which requires a large enterprise to establish apprenticeship schools.198 Automobile Company A has established a training center in

197 Most of the scholarships are for university students and academics. Automobile Company A also offers support to the single parent children or the poor for education.
198 A draft law was developed by the Ministry of Industry, Ministry of Finance and Department of Manpower for consideration in 1990.
the 1970s. Motorcycle Company C and Tire Company D also opened a training school in the early 1980s.

The training center of Company A offers training to its employees and to the public. Some programs for the public are specially coordinated on request by KADIN, universities and other training institutions. The center offered mechanic training to 540 participants, excluding 378 of the dealers of the company, between 1989 and 1992. 1,272 students from high schools, academies and universities took practical training during the same period. Apprenticeship programs (Vacation Job Program) for university graduates are organized in cooperation with the Ministry of Manpower, the Ministry of Education and Culture, KADIN and individual universities. The center also runs courses for vocational high school teachers, small industries, drivers and so on. In addition, the center cooperates with Ministry of Manpower to organize a national skill contest.

Company C's training center trains local high school graduates from both vocational and general schools. This center is accredited by the Ministry of Manpower so that participants receive a graduate certificate endorsed by the ministry. There have been more than 200 participants so far. The courses are run 2-3 times a week in the evening for a year. The participants in the course of this center learn not only the skills for repairing services but also how to participate in the production organization of a factory, or to apply quality control methods. They are not required to work for the company after they finish. The number of participants who later joined the company was less than 10. They have been sent to Japan for further training.

Company D's center has 20 positions each year and had 193 graduates by 1993. The company has about 500 applicants a year for some 20 positions. The participants are usually the graduates from vocational high schools. The course lasts for 2 years and there are four categories: electronic engineering, machinery, engine repair and assembling and other maintenance skills. The lectures of theory account for 20%, practical training sessions 70% and other 10%. The company uses its employees as instructors and practical training are held in the class rooms and in the factory. After two years students take a graduation exam. All those who passed have been employed immediately by several companies. A few graduates were employed by the company itself.

In addition to the establishment of the centers, companies A and C provide scholarships. Companies A and B open their facilities for practical training of students from pre-employment educational institutions. Company C, which aims to expand its R&D division, has been engaged in joint research projects with some universities.
Electronics Industry

Of the four companies interviewed, only company A has established a training center in 1983. For planning and operation, the center receives supports from training division of its parent company and from Singapore training center of the company. The main purpose of the center is to develop Indonesian personnel of 17 group companies. However, this center is also open to other companies and educational institutions and it coordinates special programmes in cooperation with KADIN and the Ministry of Manpower. About 30% of trainees are from outside the group companies. The center has established a close connection with the Surabaya electronics polytechnic. It supports the polytechnic to continuously upgrade its programs and facilities. The company is considering scholarships program.

Companies B-1 and C have started production very recently and it seems to be difficult for them to start corporate citizenship activities. Electronics Company B-1 often receives missions from governmental organizations and cooperates with them in the further development of the industry. Company C's production technology section seems to be very interested in organizing training facilities for improving the technical abilities of local personnel.

(1) Benefits to the local work-force development

The programs of the centers are focused on providing general technical skills and working experiences in large-scale production system. Most of the general training facilities in Indonesia, especially those at vocational high schools and public training centers, are out-of-date. They also lack qualified instructors. The centers of the companies, therefore, contribute to fostering the work-force with more practical skills and technical knowledge. Because the company employees are instructing participants in an actual work place, participants can learn not only the required manufacturing skills but also certain managerial abilities such as production process planning, personnel deployment, and quality and waste management. The cases of Automobile Company A, Motorcycle Company C and Electronics Company A showed that several governmental organizations have started to utilize training resources in the companies as a part of the national industrial work-force development. By upgrading high school graduates, the company training centers at least contribute to relieving the shortage of the personnel at the level of technicians.

199 Its investment in training was financed with a US$1 million donation offered by the owner of the Japanese partner company.

200 This polytechnic operates on the financial and technical support from Company A. In return, the polytechnic is obliged to offer some of its graduates to Company A each year.
(2) Benefits to the companies

A major benefit to the companies is the good relationships with educational institutions and government agencies. Another benefit is that a good reputation enhances the popularity of the products of the companies. However, the incentives for improving the programs are few, if the situation of corporate citizenship training programs is compared with the company training programs regulated in Japan in the late 1950s and later, or with the German apprenticeship system. In Japan, companies were regulated to coordinate apprenticeship programs and to train their own employees because the workforce then lacked basic production skills and technical knowledge. The German system is based on the idea that it is beneficial for all member companies in an industry to pool personnel who have already acquired common general skills and knowledge. In the corporate citizenship activity training in Indonesia, their programs are neither aimed at development of the personnel which companies do not have, nor the development of personnel for the industry as a whole. Hence, an improvement and an expansion of these programs can be difficult without any incentives by policies or coordination between companies and other institutions involved.

5.3 Policy Support for Company Training

There are several regulations to coordinate and standardize vocational training in Indonesia. Since 1974 the Education and Training Guidance Coordination Team had discussed legislation for vocational training. The National Training Council was established to support the Minister of Industry for vocational training issues. Since policy support for the development of a vocational training system started quite recently, the situation has improved steadily. This section will describe major regulations. Then, it will consider the progress in the formation of vocational training system in comparison with Malaysia and Singapore.

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201 For example, in 1985 Electronics Company A received a government prize for its training programs, especially the training for the small industries. This company is one of a few companies which both Indonesian and Japanese interviewees mentioned first when they were asked about in-company training in Indonesia.

202 In 1958 the first vocational training law was enacted in Japan, which requested companies to report to the governor in each prefecture about company training and show their training met the national standard of company training.

203 More than 70% of the personnel had stayed with the company where they took the training after they completed the course.

204 It contains training specialists, businessmen, representatives of government organizations. According to my interview with an advisor in the Ministry of Manpower, this council is not very active.
5.3.1 Policy Support for Company Training in Indonesia

Apart from the basic labour law from 1969, no legislation was passed for personnel training activities until 1987. In 1987 a regulation from the Ministry of Industry declared the establishment of a national-wide vocational system. Following this regulation, government regulation No. 71 in 1991 provided a framework for training activities and offered guidelines for training purposes, methods of instruction, the issuing of training certificates, the activities of training centers, occupational tests and licences for particular jobs. The Ministry of Manpower and KADIN started to organize the national apprenticeship programs in 1990. For the pilot program in 1990/91, 39 companies cooperated to train 1,167 people. The National Training Council's Occupational Skill Standard System started from 1985.

In order to encourage better utilization of existing training resources, several regulations have been passed to encourage training activities on both the supply and the demand side of the labour force. A Ministry of Manpower regulation in 1988 allowed corporations, companies and individuals to use the public vocational training facilities at their own expense. A Ministry of Finance regulation in 1990 announced that expenditure for personnel training will be deducted from the corporate profits which are subject to income taxation. In order to encourage training in the small-scale industries, a Ministry of Finance regulation in 1989 required state-owned companies to offer training and instruction as well as financial support to small-scale industries.

In addition to these incentives for training activities, there is a pilot case of training levy-tax system in the province of East Java. The East Java Provincial Regulation No.4 of 1991 referred to (a) companies which employ more than 25 people, (b) companies which employ less than 25 people but use more than 5 machines, (c) companies which do not come under (a) or (b) but whose total monthly payroll exceeds Rp. 2.5 million. These companies are required to pay a training levy of 0.25-0.5% of the total payroll. The fund is used to cover a part of training costs by the companies. This system was one of the recommendations by the World Bank in its report on vocational training system in Indonesia. Many of other provinces are willing to introduce the system, including the Jakarta area. A feasibility study and seminars have been conducted for nation wide implementation of the system.

205 Decree No. KEP.285/MEN/1991. From 1991, the program was implemented in every province.
207 Decree No.1232/1989 of the Minister of Finance.
209 ILO/ARTEP, op.cit., p.33.
A series of recent regulations illustrates that Indonesia is now more seriously tackling the issue of vocational training. The regulations are expected to provide guidelines and a framework for integration and standardization of vocational training activities. Especially the Occupational Skill Standard project has been one of the satisfactory aspects in the recent development of vocational training system in Indonesia.

In addition to the legislation, government agencies cooperate with the United Nations and with overseas aid organizations for the work-force development. With the United Nations, government agencies coordinate a number of work-force development projects such as the Rehabilitation and Improvement of Production Operation of Industries under Local Government Control project, the East-Java Manpower Development project, two self-employment related projects, the Telecommunication Human Resource Development project and so forth. The United States is involved in the development of management abilities in Indonesia. It also offers training and consultations through American NGOs in Indonesia. Canada emphasizes the human resource development in Indonesia in its aid projects. The programs include promoting a business linkage between Canadian and Indonesian companies and supporting in-company training in Canadian Indonesian joint ventures.

5.4.2 Policy Support for Company Training: Comparison

In order to assess Indonesia’s progress so far and to stress the need for company training policies in Indonesia, it is possible to briefly compare the situation in Indonesia with the work-force development in Malaysia and Singapore.

The Penang Skills Development Center in Malaysia is a successful case of a joint personnel training project in which multi-national companies played a central coordinator role. The Penang state government and the Penang Development Corporation organized the center as a joint project. They coordinated the communication and cooperation between private companies (mainly multinationals), state governmental organizations, and educational institutions. The center is operated by the operational council which consists of the representatives of the member companies and the Penang Development Corporation, the State Government Secretariat, Universiti Sains Malaysia and the Standards and Industrial Research Institute.

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211 Training for the instructors at IPPM (Institute of Management Education and Development) and training of Indonesian businessmen from Indonesia in the United States.
Institute of Malaysia. The member companies employ 45% of the work-force in the region and cooperate to up-grade their employees in the Penang industrial estate.  

In 1990, the Economic Planning Unit organized the Cabinet Committee on Training, an inter-departmental committee, for the systematic development of a personnel training system. This committee has been promoting the linkages between government agencies, public education and training institutions and industries. The Malaysia Industrial Development Agency has been encouraging further participation of private companies in vocational training activities. The Human Resource Development Act was passed in 1992. The Human Resource Development Fund was created following the example of the Skills Development Levy Act. Companies which employ more than 50 employees have to pay 1% of their total payroll to the Human Resource Development Fund.

The Economic Development Bureau of Singapore started to coordinate several personnel development programs in cooperation with foreign companies and foreign governments. Two major training programs of the bureau and foreign companies are the Precision Engineering Institute and the Philips Government Training Center. Both of them were founded in the early 1970s. The precision engineering center has been supported by several German companies for the development of supporting industries. The Philips center has been supported by Philips, the largest Dutch consumer electronics company. In addition to industry-based training projects, overseas aid projects for training have been effectively combined with other vocational training programs in Singapore.

Singapore passed the Skills Development Levy Act in 1979. It orders the collection of 1% of the company payroll of employees earning less than S$750. Subsidies for training activities are given from this fund when companies conduct personnel training. In 1979 the Vocational and Industrial Training Board (VITB) was established by the merger of Industrial Training Board and the Adult Education Board in order to systematically plan vocational training programs, develop training standards and training materials and organize upgrading training programs for the employed personnel.

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212 International Development Center (Japan), *op. cit.* The training center is operated by 12 American, 5 Malaysian, 5 German, 4 Japanese, 1 Dutch, 1 Taiwanese, 1 French and 1 American-Japanese joint venture companies. 14 companies are in the electronics industry, 5 in IC, 3 in the pharmaceuticals and 2 in engineering and machinery. The training courses include technical, manufacturing and managerial skill development and continuing education. The training center has managed to generate a profit within 2 years of operation. The member companies can benefit from formation on a stock of middle management personnel, cost-effectiveness and the exchange of training resources with other companies.


214 Japan-Singapore Technical Institute, Germany-Singapore Institute and the France-Singapore Institute. Many of the courses in these institutes are given at polytechnic level.
An approved Training Center Scheme started in 1981 in order to provide a framework for the establishment of training centers by companies and industrial groups. Since 1990 the New Apprenticeship System encourages upgrading training of industry trainers and the incorporation of academic studies in apprenticeship training. It also arranges financial support by Skills Development Fund. Over 340 companies have participated so far. The Institute of Technical Education (ITE), which replaced the VITB in 1992, promotes further progress of apprenticeship and industry based training in Singapore.

Policy support for training activities in Indonesia has improved during the last ten years. However, when the situation in Indonesia is compared with Malaysia and Singapore for example, it appears to be still lagging. If the experiences in other countries are any help, Indonesia may consider establishing a better data collection system for training needs. It may also seek to coordinate training activities by different agencies into a more systematic national training system. Further utilization of training abilities and resources in companies will promote the development of the industrial work-force in Indonesia. In order to do so, it is necessary for government agencies to play a role of an organizer.

5.5 Conclusion: Future Role of Company Training

As industrialization advances, a large part of technologies and know-how used in companies becomes more standardized and also becomes more widely available. In this situation, training is not only relevant in the coordination of human capabilities for production in a particular company, but also for the development of human capabilities which may help to modify and innovate in order to enhance productivity and product quality. Unlike in industrialized countries, modern technology is not widely spread in developing countries and human capabilities regarding the creative use of such technology has not been fully developed. When new industries are inaugurated in developing countries, the required technology is brought in from the developed countries. Domestic companies acquire technologies and skills through written information, domestic R&D and recruitment of people who have been educated overseas. However, a major part of technology is transferred through the contacts on a company basis, such as joint ventures with foreign companies or arrangements with

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2156 centers have been accredited with about 4600 places. Source: ILO, op. cit., p.87-89. The Textile Garment Training Center was established in 1982 as the first center organized by an industry group. Singapore Hotel Association Training Center and Electronics Industry Training Center were established in 1983 and in 1987 respectively.

216This program attempts to develop more practical skills and capabilities of highly educated personnel. In Germany, university students are required to take internships for developing their competence in actual working places. This program seems to have a similar goal.
foreign companies about licensing, technical assistance agreement, OEM production, etc. In terms of technological development, companies are a major channel in the introduction of more diversified technologies. The personnel development in companies, therefore, could be an important part of the development of the industrial work-force in a developing country.

The case studies concerned three industries, which are still in an early phase of development. They illustrate the involvement of Japanese companies in the personnel development which accompanies the introduction of new technology and business know-how into Indonesia. This chapter described the contributions of company training in upgrading the local technological and managerial capabilities in Indonesia. The contributions of companies are described in three categories: (1) Formation of a stock of the capable work-force; (2) Diffusion of technology and skills from companies; (3) Training as a part of cooperate citizenship activities. The chapter suggests that the integration of training practices, including those in companies, by various agencies concerned would be an important step to develop the industrial work-force more efficiently in developing countries like Indonesia.

All companies interviewed in this study conducted training. The number of Indonesian staff in the joint ventures has steadily increased. The training and working experiences which accumulated in Indonesian staff at least contributed to the improvement of technical and managerial capabilities as well as to work discipline. The progress of workers in the interviewed companies was described in detail in the previous part. To give a small example, most of foreign section managers in the interviewed companies have been replaced by the Indonesian personnel trained internally.217 Despite the fact that more remains to be achieved, the training systems in foreign companies have become more systematically organized and now provide a basis for further development.

The diffusion of human capabilities has started in the industries from which companies were interviewed. But the movement of personnel to other companies seems to be limited to these two branches of industries. Movement to other branches was hardly observed except for the banking sector. In the assembling industries, the mobility of personnel218 has hardly led to the personnel development of supporting industries. The diffusion of technology may therefore be impeded but the quality of the personnel in the assembly companies improved. There are some reasons why mobility is limited. Firstly, higher wage is the largest incentive for the local staff to move but the number of companies which can offer such high compensation is limited to foreign

217 Most of the companies in this study often developed managers from fresh high school graduates.
218 This includes personnel contacts through training organized between large assembly companies and supporting industries.
joint ventures companies or the banking sector. Relatively highly qualified employees have been able to make use of the situation by moving from one company to another.\textsuperscript{219} Secondly, as mentioned above, there are few incentives to start a small manufacturing company as a supporting industry in Indonesia. Thirdly, the standard of technological and managerial capabilities required in these two industries and that in most of other industries are still widely different, which impedes the diffusion of these capabilities.

The only significant movement of personnel was from the manufacturing companies to the banking sector after 1988. This movement must have accelerated the personnel development in the banking sector. Especially former company engineers must have been more capable to assess the feasibility and profitability of new ventures of manufacturing companies. The interviews did not mention the movement from the banks to the manufacturing sector. The personnel of the banks are mobile within the banking sector, in response to opportunities for promotion and higher salaries.

The two industries, especially the automotive industry, offer training to the general public as part of their corporate citizenship activities. These activities are increasingly based on cooperation between the governmental organizations, educational institutions and several business organizations. These activities contribute to the upgrading of the industrial work-force and to the improvement of the practical training curriculum of some educational and training institutions.

The discussion of training activities suggests that companies are expected to contribute more to the development of the work-force in Indonesia.\textsuperscript{220} The interviewed companies are already conducting training programs and some of them have started to cooperate with supply-side training facilities. Companies outside this study have started a joint training program for the development of local managerial capabilities.\textsuperscript{221} This program is an interesting attempt to transplant the German apprenticeship system to

\textsuperscript{219}For example, one manager of Motorcycle Company C moved to another after he developed his career in Company C. But he was recruited again by Company C after a few years with promotion and a higher salary.

\textsuperscript{220}For example, \textit{Jakarta Post} (9 October 1993) contained an article 'Companies urged to train workers'. The representative of the Bekasi Manpower Office, Ahmad Daud, suggested that companies should set funds aside for the training of new workers, rather than competing for experienced workers.

\textsuperscript{221}Yayasan Bina Eksekutif Program. Indonesian German joint ventures in Indonesia established a fund for the training of local middle managers. The participants, selected by the member companies, take theoretical and practical training in subjects such as marketing, procurement, production control and planning, accounting, personnel management and data analysis. The course takes two years. Participants who completed the course successfully are given a certificate accredited by \textit{Deutsche Industrie und Handelsstag}, which is an organizer of German vocational training schools. This training course is also accredited by the Indonesian government.
Indonesia. Based on this system, member companies cooperate to develop the local capabilities which are useful to all the member companies together.\textsuperscript{222}

Large Indonesian companies have also become more aware of the importance of personnel development. The largest local tire company, for instance, started a training program in 1981 for approximately 120 fresh high school graduates each year. The training school receives no financial support from any public institutions but manages to allocate Rp.20 million per person for the three year program. Participants have to sign a contract to work for the company for five years. They are free to move after 5 years but so far 90\% of the graduates stayed with the company.\textsuperscript{223} PT Astra and Bank Danamon also established a training school in the 1980s. Two state owned companies, PT Telkom and OT Pupuk Sriwidjaja, also organize an in-house MBA program.\textsuperscript{224}

As described above, companies, especially private foreign companies and large domestic companies, contribute to the personnel development in Indonesia. However, there are at least two factors which could impede the further integration of training by private companies, especially foreign companies, in the national vocational training activities in Indonesia.

Firstly, even though the governmental organizations have often emphasized the effective use of training renounces in the private sector, policy support for this issue is still minimal in Indonesia. Government regulations for vocational training and an accumulated growth of the non-oil manufacturing sector have occurred only during the last 15 to 20 years in Indonesia. Indonesia is still behind other ASEAN countries when it comes to organizing a tripartite vocational training system by governmental organizations, educational & training institutions and industries. Communication between the related agencies have to be strengthened more to reflect the pace of industrialization better. Better utilization of training resources in the private companies, including foreign companies, could be an effective first step.\textsuperscript{225}

Secondly and more importantly, the business environment in Indonesia has not yet created many incentives for companies to take up training. If the economic circumstances do not yet make it necessary for most individual companies to use their

\textsuperscript{223}This school has a strong connection with renown universities such as ITB. Academic staff are sometimes invited to give a lecture at the school. The participants receive free accommodation, meals, text books and a uniform as well as Rp.70,000-90,000 monthly. The course consists for 30 \% of theoretical lectures and 70\% of practical training, including the training in the company's factory. This company has already developed quite systematic training programs for the development of managerial capabilities and for upgrading technical abilities.
\textsuperscript{224}Pangestu and Oey-Gardiner, op. cit., p.21.
\textsuperscript{225}Business associations like APINDO (Asosiasi Pengusaha Indonesia; the Employers Association of Indonesia) have already started to discuss with the governmental organizations like Department of Manpower about education and vocational training issues. Since 1991, the Indonesian planning bureau Bappenas has taken the role of coordinator of the agencies involved in human resource development, including the private sector.
limited resources for the training of personnel, it is unlikely that companies will join their resources to that end. Joint training projects by the private sector, especially by foreign companies, are only possible if companies recognize that upgrading local human capabilities will benefit their results. In the case of the Penang Industrial Estate discussed above, both the private companies and the district government were concerned about a shortage of labour and the underdevelopment of personnel. Once a company established a large production site, it found it difficult to relocate in search of less expensive labour or more capable personnel. In this situation of relative labour scarcity, companies are forced to pool resources and consider to establish joint training facilities which benefit a group of companies in the area. Then, that type of joint training was considered beneficial for a group of companies in the area.\textsuperscript{226} It seems, therefore, that a similar situation of relative labour scarcity does not yet exist in Indonesia.\textsuperscript{227}

As discussed in the case studies, heavy protections of the domestic market and special treatments for a few companies often resulted in the creation of domestic seller's markets. In such markets, companies tend to compete on marketing skills to acquire a larger portion of the small market. Considering the small size of the market, companies tend to minimize reinvestment in capital goods as well as in human capital.

The involvement of companies in training and business confidence in Indonesia are likely to go side by side. A series of recent deregulations and further reform will hopefully create the business environment which is beneficial and practical not just for a limited number of companies but for a larger and wider range of companies. At the same time, public agencies should also be expected to systematically organize the sharing of the financial burden, which training facilities generate between institutions on both the supply side and the demand side of the labour market.

\textsuperscript{226} According to an interviewee at one of the electronics companies, some companies even invite mountain tribe people or bring factory workers from Bangladesh.
\textsuperscript{227} As discussed in the case studies, companies prefer to complement the underdevelopment of training by recruiting experienced personnel. In order to recruit experienced personnel and maintain them, most of the companies have modified their compensation systems.
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Appendix: List of Interviews

Interviews for this study took place from 25 September to 10 December 1993 in Jakarta, Bekasi, Tangerang and Bandung. 22 companies were interviewed: the eleven companies examined in Chapter 4, several individual companies involved in human resource development in Indonesia.

The interviewed company executives were usually either Japanese financial managers or managers of production technology. The Japanese interviewee was often accompanied by the Indonesian human resource manager of the company.1 The Indonesian managers interviewed were fluent in either English or Japanese. In the interviews with Indonesian companies and with an American company, the interviewee was an Indonesian human resource manager.

The interviews were not conducted with a standard questionnaire. Rather, interviewees were asked the same questions, which can be grouped in the following categories:

1 Training, including the training for the public
2 Recruitment
3 Promotion and compensation
4 Progress of the Indonesian employees
5 Operation of the company in general

Each interview usually took 2 to 3 hours, including a short visit to the factory and the training center of the company. Different managers in the same company often spared time for another interview. The company managers often introduced me to advisors in government agencies, non-government agencies as well as academics, who are involved in the human development issues in Indonesia. Some of these people were also interviewed. The following is general information about the companies interviewed.

Automotive Industry

1. Automobile Company A
   Establishment: 1971
   Paid-up Capital:
   Indonesian 51%  
   Japanese 49%
   Personnel 4,078 (22)2
   Sales: Rp. 1.2 billion in 1991
   Products: Passengers and commercial cars, automobile components

2. Automotive Company B
   Establishment: 1973
   Paid-up Capital: US$ 25.4 million

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1 Foreigners are not allowed to take the position of human resource manager in Indonesia. In the Japanese joint-ventures interviewed, Japanese finance managers are cooperating Indonesian human resource managers about personnel issues.
2 Between brackets the number of Japanese employees
3. Motorcycle Company C
   Establishment: 1974
   Paid-up Capital: US$61.8 million
   Indonesian Personnel: 798 (11)
   Japanese Personnel: 2970 (27)
   Sales: Rp. 218.5 billion in 1991
   Products: Motorcycle and components, water-pumps, water purifiers

4. Tire Company D
   Establishment: 1973
   Paid-up Capital: US$20.8 million
   Indonesian Personnel: 1414 (14)
   Japanese Personnel: 1414 (14)
   Sales: Rp. 114.2 billion in 1988
   Products: Automotive tires, tubes, flaps

5. Tire Company E (not in Chapter 4)
   Establishment: 1951 (manufacturing bicycle tires)
   Capital: 100% Indonesian
   Personnel: 4,650, including 60 managers,
   180 middle managers, and 6 technical advisors
   from a Japanese tire company
   Revenue: US$110 million
   Products: Tires for automobiles, motorcycles

Electronics Industry

6. Company A
   Establishment: 1970
   Paid-up Capital: US$16.5 million
   Indonesian Personnel: 180
   Japanese Personnel: 6 technical advisors
   Sales: Rp. 218.5 billion in 1991
   Products: Radios, cassettes, cassette recorders, car audio, TVs,
   fans, telephones, refrigerators, water pumps, irons,
   air-conditioners
7. Company A-1 (not in Chapter 4)
   Establishment: 1991
   Paid-up Capital: US$20 million
      Indonesian  5%
      Japanese  95%
   Personnel: 776 (20)
   Products: VCRs

8. Company B
   Establishment: 1969
   Paid-up Capital: US$15 million
      Indonesian  35%
      Japanese  65%
   Personnel: 1,318 (15)
   Products: Air-conditioners, refrigerators, freezers, electric fans, rice cookers, ventilating fans, ovens, washing machines, color TVs, water pumps

9. Company B-1
   Establishment: 1989
   Paid-up Capital: US$23 million
      Indonesian  32%
      Japanese  68%
   Personnel: 1,269 (26)
   Products: Electronic tuners, flyback transformers, video-heads, VCRs

10. Company C
    Establishment: 1991
    Paid-up Capital: US$20 million
       Indonesian  5%
       Japanese  95%
    Personnel: 1,300 (18)
    Products: Stereo sets, radio cassette recorders

11. Company D (not in Chapter 4)
    Establishment: 1991
    Paid-up Capital: Rp. 1100 million
       Indonesian  52.73%
       Japanese  47.23%
    Personnel: 
    Products: Consumer Electronics
Banking

12. Company A
   Establishment: 1950s
   Capital: 100% Japanese
   Personnel: 297 (14)

13. Company B
   Establishment: 1953
   Paid-up Capital: Rp. 6,000 million
     Indonesian 30.22%
     Japanese 69.78%
   Personnel: 230 (11)

14. Company C
   Establishment: 1953
   Capital: 100% Indonesian
   Personnel: 3,250 (800-850 Officers)

Textile (not in Chapter 4)

15. Company A
   Establishment: 1973
   Paid-up Capital: US$ 34.8 million
     Indonesian 27.6%
     Japanese 72.4%
   Personnel: 869 (18)
   Sales: Rp. 259.2 billion in 1990
     (6 group companies then)
   Products: Polyester staple fibre, nylon filament,
     polyester filament

Trade (not in Chapter 4)

16. Company A (Liaison Office)
   Activities: Export and import services
     Joint contribution to more than 30 Japanese joint ventures
   Personnel: Indonesians 100
     Japanese 24
     33 Japanese in related companies

17. Company B (Liaison Representative Office)
   Activities: Export and import services
   Personnel: Indonesian 130
     Japanese 34
Consumer Products (not in Chapter 4)

18. Unilever
   Establishment: 1933
   Products: Consumer products such as soap, shampoo and conditioner, processed food

Oil Industry (not in Chapter 4)

19. Pertamina
   Establishment: 1968
   Activities: Development of oil wells, production of crude oil, refining crude oil, transportation and sales
   Personnel: 47,057

21. Oil trading company of Pertamina (a joint venture with Japan)
   Establishment: 1970s
   Activities: Trading of oil to Japan
   Personnel: 12 (3)

Chemicals (not in Chapter 4)

22. Company A
   Establishment: 1986
   Paid-up Capital
     Indonesian 45%
     Japanese 55%
   Personnel: 52 (4)
   Products: Water treatment chemicals

Individuals

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