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Zein Heflin Frinces
University of Wollongong

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THE EFFECT OF JAPANESE TECHNOLOGY TRANSFER TO INDONESIA

**(A Study of the Effect of Technology Transfer on Managerial
Skill Formation of the Host Country's Employees)**

**A thesis submitted in fulfilment of the
requirements for the award of the degree**

(DOCTOR OF PHILOSOPHY)

FROM

THE UNIVERSITY OF WOLLONGONG

BY

ZEIN HEFLIN FRINCES

BScEcon (Ull) MSc Soc (NSW) MA (Macq.)



**DEPARTMENT OF MANAGEMENT
(1991)**

S T A T E M E N T

No part of the work contained in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or institute of learning.

Except where otherwise indicated, this study is my own work and has not been submitted for a higher degree elsewhere.

ZEIN HEFLIN FRINCES

C O N T E N T S

List of Tables	i
List of Figures	iii
List of Appendices	iv
Abstract	v
Statement	vi
Acknowledgments	vii
CHAPTER 1 INTRODUCTION	1
1.1 The Selection of the Research Area	1
1.2 The Concept of Transfer of Technology	8
1.3 Research Statement	16
CHAPTER 2 THE RESEARCH METHOD AND CONCEPTUAL MODEL	19
2.1 Objectives of the Research	19
2.2 Research Contributions	27
2.3 Formation of Research Questions	28
2.4 Research Methodology	29
2.5 Analysis Method	34
2.6 Statistical Tools Used in Measurement and Testing	38
2.7 Data Collection Method	38
2.8 Limitations and Problems of the Methodology	42
2.9 Type of Investigation	45
2.10 Study Setting	45
2.11 Scope of the Research	45

2.12 Respondents: Sampling Size and Type of Industry	46
2.13 Respondents and Interview	46
2.14 Preliminary Research	52
2.15 Organisation of the Research	52
2.16 Conceptual Model	53
2.16.1 General Research Model	55
(1) The Samli Model	55
(2) The Kosenko and Samli Model	58
(3) The O'Dochartaigh Model	60
(4) A Proposed General Model of Japanese Technology Transfer to Indonesia	62
2.16.2 The Conceptual Model	77
2.17 Limitations of the Dominant Perspective	82
2.17.1 Emphasis on Socio-Cultural Uniqueness	82
2.17.2 Lack of Empirical Data	86
2.17.3 Lack of Orientation Toward a More General Theory of Management	87
2.18 Operationalisation of Variables	88
2.18.1 Technology Transfer and Mechanism of Investment	88
2.18.2 The Moderating Factors	94
2.18.3 Skill Formation and Managerial Skills	98
2.18.4 Training Modes	100

CHAPTER 3 SYNTHESIS OF THE PREVIOUS STUDIES 102

3.1 Research Focus	102
--------------------	-----

3.2	Research of Skill Formation and Technology Transfer	104
3.3	Foreign Investment and Technology Transfer	106
3.4	Japanese Foreign Investment and Its Characteristics	108
3.5	Reasons For Japanese Foreign Investment	115
3.6	Japanese Technology Transfer	120
3.7	Barrier to and Success in Technology Transfer	137
3.8	Skills Transfer and Training	143
3.9	Japanese Skill Formation	157
3.10	Managerial Skills	165
3.11	Japanese Specific Managerial Skills and its Transferability	181

CHAPTER 4 CASE STUDIES	189
-------------------------------	------------

4.1	P.T. POLEKAO INDONESIA CHEMICALS, THE POLEKAO GROUP, (KAO CORPORATION, JAPAN)	189
4.2	P.T. KRAMA YUDHA TIGA BERLIAN MOTORS (MITSUBISHI MOTORS)	222
4.3	P.T. UNICOR PRIMA UTAMA, THE INDOMOBILE GROUP, (SUZUKI and MAZDA CORPORATIONS, JAPAN)	242
4.4	P.T. MESIN ISUZU INDONESIA (ISUZU CORPORATION, C. ITOH & CO.LTD, TOYO MENKA KAISHA LIMITED, JAPAN)	261
4.5	P.T. BRIDGESTONE TIRE INDONESIA (BRIDGESTONE CORPORATION and MITSUI & CO., LTD)	281

4.6	MITSUI & CO., LTD	301
4.7	P.T. INDONESIA SYNTHETIC TEXTILE MILLS (TORAY INDUSTRIES INC., and MITSUI & CO LTD., JAPAN)	317
4.8	P.T. UNILON TEXTILE INDUSTRIES (TOYOBO CO.LTD,JAPAN,and C.ITOH & CO.LTD,JAPAN)	328
4.9	P.T. EASTERNTEX (TORAY INDUSTRIES, INC., JAPAN)	339
4.10	P.T. CENTURY TEXTILE INDUSTRIES (TORAY INDUSTRY, INC., KANEMATSU-GOSHO INC, TOKAI SENKO CO,LTD, KURABO INDUSTRIES LTD., JAPAN)	349
4.11.	P.T. TIGA MANUNGGAL SYNTHETIC INDUSTRIES (MITSUI & CO. LTD., JAPAN, and ICHIMURA SANGYO CO. LTD, JAPAN)	357
4.12	P.T. CAHAYA INABA ELECTRIC (INABA ELECTRIC WORK CO. LTD., JAPAN)	366
4.13	P.T. NIPPON STEEL CONSTRUCTION INDONESIA (NIPPON STEEL CORPORATION, JAPAN)	374
4.14	P.T. INDONESIA ASAHAN ALUMINUM (NIPPON ASAHAN ALUMINIUM CO.LTD, JAPAN)	383
4.15	P.T. SEMEN NUSANTARA (MITSUI & CO. LTD., JAPAN and ONODA CEMENT CO. LTD., JAPAN)	392
4.16	P.T. MEIJI INDONESIA PHARMACEUTICAL INDUSTRIES (MEIJI SEIKA KAISHA LTD., JAPAN and NOMURA TRADING CO.LTD., JAPAN)	402

CHAPTER 5 A CROSS-CASE ANALYSIS AND RESULTS OF THE	
STUDY	413
5.1 Characteristics of Japanese	
Technology Transfer to Indonesia	413
5.2 Application of the Japanese System of	
Management	426
5.3 Managerial Skill Formation:	438
5.3.1 Japanese specific managerial skills	439
5.3.2 Functional managerial skills	445
5.3.3 General Managerial skills	449
5.4 The Role of Various Factors in Skill	
Transfer	457
5.5 Mechanism of Skill Formation	481
5.6 A Model of Technology Transfer and	
skill Formation	489
5.6.1 The finding and the study and	
the model	491
5.6.2 The importance of the TTSF model	497
 CHAPTER 6 CONCLUSION	 499
 REFERENCES	 518
APPENDICES	536
CONTACT LETTERS	539
QUESTIONNAIRES	542

LIST OF TABLES

1. Recapitulation of Foreign Investment Approvals by Country of Origin in Indonesia From 1967-1990	3
2. The Japanese Foreign Investment in Indonesia by Industry From 1967-1990	9
3. Japanese Firms Operating in Indonesia and Sampling Size of the Research	47
4. Japanese Manufacturing Firms Operating in Indonesia	48
5. Forms of Technology Transfer	130
6. Summary of the Relative Characteristics of Various Forms of Foreign Participation	132
7. Licensing as a Preferred Strategy Under Following Circumstances	136
8. Perceived Sources of Problems in Technology Transfer	140
9. Cases Data Concerning Training	150
10. Work Environment Barriers to Skill Transfer	153
11. Application of Various Components of Japanese System of Management in Indonesia as Perceived by Indonesian Managerial Staff	427
12. Various Types of Managerial Skills Acquired by Indonesian Managerial Staff Working in Japanese Subsidiaries Operating in Indonesia	441
13. The Acquisition of Managerial Skills by the Size of Organisation	459
14. The Acquisition of Managerial Skills by the Level of Educational Background	466

15. The Role of the Host Government Regulations	470
16. The Acquisition of Skills by Industries	474
17. The Acquisition of Managerial Skills by the Sophistication level of the Transferred Technology to Indonesia Compared with the Existing Technology in Indonesia	479
18. Various Modes of Training Participated by Indonesian Managerial Staff to Acquire Managerial Skills	483

L I S T O F F I G U R E S

1. Fundamental Factors Underlying Japanese Management Practices: A Suggested Patter of Causality	22
2. Skill Effect of Japanese Technology Transfer to Indonesia	24
3. Type of Technology Transferred by Industry	25
4. The Basic Model of Technology Transfer	56
5. Technology Transfer Model	59
6. The Process of Technology Transfer: Total View	61
7. The Proposed General Model of the Japanese Technology Transfer to Indonesia	63
8. Factors Contributing to the Success of Technology Transfer	72
9. Conceptual Model of Technology Transfer	79
10.Spiral of Technology Transfer	148
11.Schema of Technology Transfer: Stages of Project and Types and Sources of Technology	156
12.The Elements of the Japanese and the Western System of Management	160
13.The Skills of Top Management: Grouped by Key Factors (The Chief Executive's Role and Other Top-Level Roles)	170
14.The Roles of The Chief Executive: Activities and Skills	171
15.Elements of Conceptual, Human, and Technical Skills	174
16.Relative Skill Emphasis for Different Management Level	178

17.Hierarchy of Management Skills	179
18.A Revised Model of Technology Transfer and skill Formation	492

A P P E N D I C E S

1. The Characteristics of Case Studies	536
2. The Acquisition of Managerial Skills by the Sophistication Level of the Transferred Technology to Indonesia Compared With Technology Being Used in Developed Countries	537
3. The Acquisition of Managerial Skills by the Scale of the Transferred Technology to Indonesia	538
4. Contact Letter of Prof. Julian Lowe	539
5. Contact Letter of Mr. Z.H. Frinces, the researcher	540
6. Contact Letter of Mr. Z.H. Frinces, the researcher	541
7. Questionnaire for Chief Executives	542
8. Questionnaire for Managers / Directors	548

A B S T R A C T

This thesis is a result of an intensive empirical and exploratory field research conducted among Japanese subsidiaries operating in Indonesia based on case studies. This research studies the effect of Japanese technology transfer to Indonesia on the managerial skill formation of Indonesian employees.

This thesis consists of 6 chapters. Chapter 1 contains background reasons for selecting the research topic and a "problem statement" of the research. Chapter 2 sets out the detailed stages of the way this study has been conducted. Chapter 3 provides a review of previous research that forms the basis for the research guidelines for the study. A pilot research or survey of 4 Japanese subsidiaries operating in Indonesia, was undertaken to test various theories found in existing literatures and to formulate further courses of action for this study. Further research was carried out involving 16 Japanese subsidiaries and 21 Indonesian managerial staff working in the Japanese subsidiaries operating in Indonesia.

The review of previous studies in Chapter 3 suggested that there had been very little research on the subject of the effect of technology transfer on managerial skill formation. There had been little research on this subject because, as the review suggests it was perceived that skills had been formed in an automatic fashion and that management could operate smoothly without being concerned much about skill formation. It was also believed that research on the issues was both theoretically and empirically quite difficult to carry out.

In this research the types of managerial skills studied are divided into three components, namely, (1) Japanese specific managerial skills, (2) functional or professional managerial skills, and (3) general managerial skills, consisting of conceptual, human, and technical skills. The Indonesian managerial staff working in Japanese subsidiaries were expected to have acquired these skills. It was predicted that the effect of technology transfer on skill formation and the acquisition of these skills, were associated with the various moderating factors explained in Chapter 2.

Chapter 4 contains detailed case studies which give insight into both the skill formation process and the effects of various moderating variables on the transfer process. Chapter 5 presents various findings of the study and analyses of the findings. It was found that only three of the five moderating variables studied had a significant impact on the skills formation process. On the basis of existing theories and this study's empirical evidence, a model of technology transfer and skill formation was then developed and presented in Chapter 5.

Chapter 6 contains conclusions, policy recommendations, and for further study.

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This thesis is dedicated to my parents, brothers and sisters.

1. INTRODUCTION

The Indonesian government has always maintained an open attitude towards the transfer and importation of technology. Technology transfer in the industrial sector takes place through the acquisition of imported capital equipment, raw materials, technological processes, and through the active participation of foreign nationals in the management of the companies, through the admission of direct foreign investments, and through joint venture investment mechanisms. The promotion of joint-venture investment is expected to give the local partner some shared power and control especially with regard to the choice of technology and the running of the company.

The current trend of the Indonesian government's foreign investment policy is to encourage the establishment of joint-venture companies between local and foreign partners. Technology transfer in Indonesia is viewed as part of a larger investment decision. Any decision concerning foreign investment will affect, both directly or indirectly, the nature and transfer of technology into Indonesia. Since 1967, Japan has been Indonesia's largest foreign investor. Therefore, Japan is expected to transfer a great amount of technology and skill to Indonesia.

1.1 The Selection of the Research Areas

The objective of this research is to examine the effect of Japanese technology transfer (TT) to Indonesia. The selection of Japan as a case study is based upon some very important reasons.

First, Japan has been Indonesia's largest foreign investing country since Indonesia liberated its foreign investment policies in the early 1970's ,and as such it is expected that the Japanese are playing an important role in shaping the Indonesian economy. This role has been confirmed in the Indonesian Foreign Investment Board's report (1991) which states that Japanese foreign investment in Indonesia has been the largest in Indonesia from 1967 to 1990, as shown in TABLE 1. Table 1 shows that during that period, 24.9 percent of total foreign investment in Indonesia came from Japan. This figure has placed Japanese at the top for foreign investment in Indonesia. This of course suggests the important, if not dominant, role of Japanese investment in Indonesian economic development. Internationally "Japan [is] by many criteria the most successful industrial economy" (Franko, 1983, p.1) and one of the leading technology exporters in the world. One may therefore expect some degree of Japanese influence on the methods and management of Indonesian national production.

Secondly, Japan is Indonesia's main trading partner in terms of export and import destination.

Thirdly, historically Japan was, briefly, one of Indonesia's former colonialists, and culturally both Indonesia and Japan are Asian countries which have some similarity in cultural behaviour with respect to the concept of consensus in decision making process.

Fourthly, both countries are basically inter-dependent economically as Japan is acting as a supplier of financial aid and technology to Indonesia and Indonesia is functioning as a supplier of raw materials such as timber,

TABLE 1**RECAPITULATION OF FOREIGN INVESMENT APPROVALS BY COUNTRY OF ORIGIN (1967 - 1990*)**

No.	Country of Origin	No. of Project	Value (US\$ Million)	(%)
1.	JAPAN	390	9645.1	24.9
2.	HONG KONG	175	3731.2	9.6
3.	TAIWAN	171	2302.1	6.0
4.	USA	122	2196.8	5.7
5.	NETHERLANDS	81	1962.9	5.1
6.	SOUTH KOREA	197	1863.8	4.8
7.	GERMANY	48	1853.9	4.8
8.	LUXEMBOURG	3	1139.1	3.6
9.	SINGAPORE	100	993.4	2.6
10.	AUSTRALIA	108	863.6	2.2
11.	UNITED KINGDOM	93	733.3	1.9
12.	PANAMA	21	420.5	1.1
13.	FRANCE	29	283.4	0.7
14.	BELGIUM	16	217.2	0.6
15.	NORWAY	6	216.0	0.6
16.	SWITZERLAND	22	211.9	0.5
17.	INDIA	12	187.2	0.5
18.	MALAYSIA	21	130.0	0.4
19.	BRUNEI DARUSSALAM	1	84.1	0.3
20.	DENMARK	11	77.7	0.2
21.	FINLAND	2	56.0	0.1
22.	SWEDEN	4	49.5	0.1
23.	THAILAND	9	39.6	0.1
24.	LYBERIA	8	36.9	0.1
25.	CANADA	11	29.3	0.1
26.	ITALY	3	16.7	0.0
27.	PHILLIPINES	5	12.9	0.0
28.	NEW ZEALAND	4	12.6	0.0
29.	IRELAND	1	9.8	0.0
30.	CHEKOSLOVAKIA	1	8.6	0.0
31.	AUSTRIA	1	6.5	0.0
32.	SPAIN	2	2.7	0.0
33.	BAHAMA/BERMUDA	1	2.0	0.0
34.	PAKISTAN	1	1.0	0.0
35.	GHANA	1	1.0	0.0
36.	NIGERIA	1	1.0	0.0
37.	PAPUA NEW GUINEA	1	1.0	0.0
38.	JOINT COUNTRIES	111	8947.5	23.1
	TOTAL	1794	38677.9	100

NOTE : The figures include new project expansion alteration, merger, change of status as well as revocation;

* Up to December 31, 1990.

Source: BKPM (1991) - Badan Koordinasi Penanaman modal; Jakarta

oil and gas to Japan. Internally, the Japanese economy practices a free market or capitalism market system, while Indonesia's economic system is a mix of both capitalist and central control. Politically both countries have adopted different systems of democracy. The Japanese are following the western democratic system with a parliamentary system of government and are becoming a prominent member of the western block countries. The Indonesians are adopting a **"Pancasila democracy"** which refers to the country's state philosophy which consist of five principles of life and outlook, with a presidential system of government and has become a member of the non-block countries.

Fifthly, Japanese technology transfer to, and so its operation in, Indonesia is considered an example of Japanese world business expansionism which deserves special academic attention in the way it affects the fabric of the host country's socioeconomic and technological development.

Finally, little research of this kind has been conducted in Indonesia despite the fact that foreign investment and foreign technology have been instrumental in promoting and industrializing the Indonesian economy (see Wie 1987, and Evans 1987). This research is expected to (a) describe and analyze the nature of the effect of Japanese TT and (b) to provide some recommendation for policy making and for further research.

The need for this research is urgent as the recipient government must know as to whether the transferred technologies do have some effects on the local technology in terms of the effects of technology transfer on skill

formation. Thus, the core element of this research is to examine and to understand the effects of TT. To do this, it is important to understand (1) the characteristics of Japanese business practices and international business operation, in this case, Japanese foreign investment, and (2) the concept of TT. TT has become a matter of growing interest in the world community, and it is now widely recognized as a major determinant of industrialization and economic development for countries which are in the process of development. As a consequence, there has been wide discussion on the subject of TT both within and outside academic circles.

The reason for this interest stems from the fact that the technological gap between countries is enormous, and the contribution of TT to increased productivity to expedite growth of the local economy has been widely recognized. However, the benefits of transferred technology to the local economy depend upon the applicability of the transferred technology to local conditions and on the maximum utilization of its capacity for production. To realize these benefits, it is therefore important to understand the structures and function of transferred technologies, a question which is within the expertise of technical professionals, and the concepts inherent in TT, an issue which has attracted the attention of social scientists and professionals which is not investigated in this research.

The issues raised in this research relate closely to the domain of studies of international technology transfer (ITT) as the transfer involves crossing the national

boundaries of two nations, Japan and Indonesia.

International technology transfer has been a subject of considerable interest to several diverse groups, including government policy makers, international civil servants, business executives, and business and academic researchers. Despite all this attention, the concept of ITT remains vague, controversial, and inadequately operationalized (Erdilek and Rapoport 1985).

This research is undertaken to consider how technology transfer from Japanese multinational corporations (MNCs) has taken place under the Indonesian government's industrial policy of promoting domestic production, taking the manufacturing industry as a main case study.

One of the important characteristics of Indonesian industrialization policy that emerged in the seventies and eighties was the concrete results achieved by the policy of encouraging domestic production. In this case, the policy meant import substitution of intermediate goods such as transportation equipment and electrical appliances. In other words, although both the old and new domestic production policies had import substitution as their common denominator, the aim of the Indonesian government's new industrial policy was to widen the scope of import substitution to include intermediate goods as well as finished consumer goods. In this sense the new domestic production policy clearly shows a further development of the already established policy of industrialization for import substitution.

In implementing this new domestic production policy,

the Indonesian government has planned a broadening of the base of the country's industrialization through technology transfer and through the encouragement of peripheral supporting industries. The reality of the matter, however, is that the success or failure of the new domestic production policy hinges on the way in which foreign-affiliated firms respond in terms of technology, since all of the industries involved in that policy are under strong foreign-capital influence. In other words, it depends on the extent to which foreign-affiliates are willing and able to accomplish inter-firm technology transfer. Of course, another choice with respect to the necessity of domestic production is intra-firm technology transfer (technology transfer between enterprises without capital or technological tie-ups) in the form of 'in-house production', which is quite feasible as a technological response, but the fact that the aim of the Indonesian government lies in the inter-firm model is evident in the new domestic production policy which involves the development of peripheral supporting industries.

Besides the vector of technology transfer that is influenced by domestic production policy, there is also the vector of skill transfer by MNCs in responding to the technology transfer or requirements imposed by that policy.

In view of the existence of that policy, this research will focus on the effects of technology transfer on the domestic social economy, particularly on skill formation of Indonesian local employees. Technology transfer referred to here is the transfer of various industry-related technology of Japanese multinational

Corporations (MNCs) to their subsidiaries through various mechanisms of technology transfer in Indonesia.

The choice of Japanese technology transfer as the focus of this research stems from the above discussed dominant Japanese presence in the Indonesian economy. The Indonesian Foreign Investment Board's 1991 report also indicated that most Japanese foreign investment has been in the manufacturing sector, and details of Japanese foreign investment can be seen in TABLE 2 which shows that the largest areas of Japanese foreign investment in Indonesia are in textile, chemical, and basic metal industries. It is upon these manufacturing related industries that most of this study's research is focused. Globally the Japanese have also been recognized as one of the most important and largest exporters of technology to both developed and developing countries.

1.2 The Concept of Transfer of Technology

The word 'transfer' literally means the moving of something from one place to another by some means of transport and communications. There must be some kind of intentional force which leads to the movement process of something until it gets to certain destination from a certain point of departure. Transfer of technology is therefore literally a moving of technology (knowledge, process or techniques) from a point of departure to a destination. However, conceptually the definitions of technology transfer (TT) are varied. Each writer theorizes the concept of TT according to his/her perspective and subject being studied. Thus, TT means different thing to

TABLE 2
THE JAPANESE FOREIGN INVESMENT IN INDONESIA BY INDUSTRY
FROM 1967 - 1990*

No	SECTOR	PROJECT	Value (US\$ Million)	(%)
1.	FOOD CROPS	2	4.8	0.1
2.	PLANTATION	5	12.3	0.1
3.	LIVESTOCK	1	2.2	0.0
4.	FISHERY	24	90.4	1.0
5.	FORESTRY	3	22.9	0.2
6.	MINING	1	0.3	0.0
7.	FOOD IND.	10	223.6	2.4
8.	TEXTILE IND.	38	1127.3	12.1
9.	WOOD IND.	26	166.3	1.8
10.	PAPER IND.	3	36.1	0.4
11.	PHARMACEUTICAL IND.	5	22.4	0.2
12.	CHEMICAL IND.	50	1166.5	12.5
13.	NON METALLIC MIN. IND.	9	702.1	7.5
14.	BASIC METAL IND.	11	2225.6	23.9
15.	METAL GOODS IND.	96	2095.9	22.5
16.	OTHER IND.	5	102.8	1.1
17.	CONSTRUCTION	21	28.0	0.3
18.	HOTEL	11	88.3	0.9
19.	OFFICE BUILDING	3	115.3	1.2
20.	HOUSING	11	439.4	4.7
21.	TRANSPORTATION	7	353.5	3.8
22.	OTHER SERVICES	31	304.6	3.3
	TOTAL	373	9330.6	100.0

* Up to October 31, 1990

Source: BPKM (1991) - Bahan Koordinasi Penanaman Modal, Jakarta.

different people.

Most discussion of TT in the literatures relates generally to foreign investment, the operation of the multinational corporation (MNCs) and R&D activities, as well as development planning and strategy in developing countries. The variation of definition given has produced various sets of TT issues. Such variation reflects a different approach to the problem of TT. Although there are variations in defining and theorizing TT, their aims are the same, that is , (1) to clarify the meaning of TT, (2) to develop the concept of TT to be more relevant to the conditions of today and (3) to proliferate advanced technical knowledge and use of methods and devices.

Technology utilization describes those cases where little or no modification is necessary. A further elaboration of this notion is that the concept of TT varies in accordance with the terms by which it is defined. For example, TT may be thought of in terms of the mechanism involved, i.e., information dissemination techniques, technical services, symposia, conferences and study institutes. It may also be considered in terms of active stages of the process, i.e., technological generation, information dissemination, technological adaptation and application to new problem situations (Doscher 1974). So TT is a series of processes of moving 'something' associated with the notion of 'technology' from one boundary (of a laboratory, firm, region or state) to another.

It should be made clear however that TT is not 'technology importation and technology diffusion'. TT has a wider understanding and concept than that of **technology**

importation or of technology diffusion. Technology importation, according to Choi (1986, p.138), ".....is a type of technology transfer consciously designed to meet a certain objective", while TT has a notion of a comprehensive concept of a transfer destined toward various objectives. Because TT, as argued by Doscher (1974, p.270) is "a highly complex process involving a wide variety of interactive elements". Meanwhile, technology diffusion, according to Wells (1974, p. 422), is "the process by which science and technology flows through human activities and eventually becomes applied" (Wells 1974, p.422). The concept of this flow process includes the narrow concept of TT. TT is the process by which science and technology is developed and used by second user, not necessarily for different purposes. This is to suggest that TT is in a strict sense neither technology importation nor technology diffusion, although these three terms are often used interchangeably

However, it is recognized that TT has a connotation of technology importation, that is, "the importation of technological factors" as defined by UNCTAD (see Choi 1986, p. 139). But UNCTAD itself indicated that such a definition was taken as "a narrow sense of the term". This infers that TT has a wider understanding and concept than technological importation. Such an understanding has provided room for a variety of definitions, and interpretations, of TT. This variation depends very much upon the perspective of the viewer. OECD (1981, pp. 19-20) in its publication entitled 'North / South Technology Transfer - The Adjustment' states that "technology transfer is usually seen in the context of

trading objectives such as the sales of product or services". Moreover, OECD further points out that transfer technology does not involve irreversibility in the use of technology for the seller. Others, such as Wells, define TT as "the process by which science and technology developed by one group or organization for a specific purpose becomes adopted or adapted and applied by another group or organization often, but not necessarily, for different purpose. For technology to be transferred, in this usage, it must be actually applied by a secondary user" (Wells 1974, p. 422). Similar definitions are also offered by Willenbrook (1974), Doscher (1974), The National Science Foundation - 1974 (in Roman and Puett Jr., 1983), Doctors (1969) and Utterback (1975). Samuel Doctors (1969, p. 3) for example describes TT as "...the process where by technical information originating in one institutional setting is adopted for use in another institutional setting. The transfer typically requires active participation imply more than dissemination of technical information, it implies the adoption of new technology through creative transformation and application to different end use".

The National Science Foundation (1979) explicitly defines TT as

"the process of collection documentation and successful dissemination of scientific and technical information to a receiver through a number of mechanism, both formal and informal, passive and active. The transfer process begins when it has been established that a technological advance has significant relevancy in a direct or different application and that a necessary adaptation can be made. The process occurs naturally between participants who understand what has to be done to permit effective utilization"

The most rigorous and most often quoted definitions are those definitions offered by Brooks (1967) and Gruber and Marquis (1969). Brooks said that

"technology transfer is the process by which science and technology are diffused through out human activity. Wherever systematic rational knowledge developed by one group or institution as embodied in a way of doing things by other institutions or group we have technology transfer. This can be either from more basic scientific knowledge in to technology or adaptation of an existing technology to a new use. Technology transfer differs from ordinary scientific information transfer in fact that to be really transferred it must be embodied in an actual operation of some kind." (Jervis and Sinclair, 1974, pp. 141-42).

And Gruber and Marquis (1969, pp. 255-56) offered the following TT definition: "technology may be defined as the means or capacity to perform a particular activity. The transfer of technology must then mean the utilization of existing technique in an instance where it has not previously been used".

The above cited definitions of TT generally imply that TT takes place when technology produced in one place is moved to another place for similar or different utilization. The transferred technology is regarded as the capacity to produce for the recipient. And the above definitions only provide a concept of TT in which the recipient (firm or organization) plays a role only as "adopter" or "adaptor" of the technology developed elsewhere (overseas). There is no explicit indication as to whether the recipient has the ability to master the transferred technology as well as capacity to produce the

technology that produces the goods. As such, the above definitions are limited to what Francois Chesnais (1986, p. 105) calls as "the strict sense" concept of TT as contrasted to the fullest sense of TT.

Chesnais (1986, p. 105) points out that 'the strict sense' concept of TT is "the transfer of technology to the recipient firm as organization of capacity to produce the products embodying the new technology, which inevitably means according the recipient firm some degree of access to technology itself," and Chesnais' "fullest meaning" concept of TT implies "the transfer to the recipient of not only the technical knowledge needed to produce the product, but also the capacity to master, develop and later produce autonomously, the technology lying behind their products". Chesnais' reference to the recipient's capacity to 'master, develop and produce the technology lying behind these products' is essential to the fullest concept of TT and distinguishes it from other definitions. The Chesnais' fullest meaning concept of TT appears to be similar to a concept of TT as defined by James Emery, et al (1986) which emphasizes the creation of technology that produce the products. In fact Emery goes even further and explicitly suggests that TT "in the broadest sense must encompass the development of indigenous technological capability sufficient to sustain economic performance in line with the host country's goals, and ultimately with global development in the areas or sectors concerned" (Emery, et al 1986, p.4). Emery's concept of TT is not limited to the supply of equipment and training of locals, or the production of products utilizing outside

technology, TT should also be able to affect positively the development of the recipient's economy.

In conclusion, it is held here that the term **transfer of technology** consists of two separate elements, that is, **technology** and **transfer**. The term **technology** is taken here to mean **"Industrial Technology"** or the accumulated knowledge and know-how required for either manufacturing a final product or processing intermediate inputs. That accumulated knowledge and know-how include product designs, production techniques, and related managerial systems. **Technology transfer** means the transmission, revision (adaptation), and implantation (absorption) of such accumulated knowledge and know-how that are actually put to productive use (Erdilek and Rapoport 1985). The transmission of this accumulated knowledge and know-how includes a transmission of skills from the technology transferor to the technology transferee. It is emphasized here that the technology transfer includes the transfer of skills as suggested by Komoda (1986). Komoda said that "Japanese technology transfer is closely wedded to particular Japanese managerial skills and know-how that can be transferred through close contact. The managerial skills aspect is particularly important in the case of Japanese technology transfer" (Komoda 1986, p.412). Kono adds that "the success of multinational management of Japanese subsidiaries is partly the result of transplanting the philosophy of respect for people" (Kono 1984/2985, p192). **"Respect for people"**, according to Kono, "is the original source of all the other characteristics" (Kono 1984/1985, p.190). It is

at this end that Cavusgil (1985, p.218) concludes that "to a great extent, the transfer is a people-oriented phenomenon". In this, the issue of managerial skills is viewed here as a people-oriented phenomenon. The intention of this research is to answer questions raised in this study as indicated in the research statement.

1.3 Research Statement

In recent years there has been witnessed a growing controversy, both here and overseas, over the role of foreign technologies in the development of a host country's economy, especially in the economy of a developing country. (DC). The foreign technologies transferred into the host developing country have been criticised for their inappropriateness to the economic environment of the host developing country. Simultaneously they have been recognized and appreciated for their contribution to creating and developing the host country's economy as measured by employment opportunities, and technological and skill formation (see Purcal 1981).

More recently, transferred technologies, especially those from developed nations (DNs), have been accused by some theorists as instrumental in making them dependent upon such foreign technologies. The inability of host country firms to compete with foreign technological superiority, depresses local creativity and ability to innovate. On the positive side, transferred technologies have been perceived as the only means available to provide tools to solve the host country's economic backwardness and stagnation in terms of business growth. Proponents of such

views believe transferred technologies to be instrumental in industrializing the host DCs.

In the present stage of the world's business and technological development, Japan has been singled out as one of the most important players in transferring technologies to DCs such as Indonesia. Japanese technologies and their transfer are believed to have certain distinct characteristics compared with those from the United States and other industrialized country's technologies, especially with respect to the way the technology is embodied and transferred to the host developing countries, such as Indonesia. In Indonesia such characteristics will have distinct effects on the Indonesian socio- economic and technological development. The primary objective of this research is to examine, identify and analyse the effects of Japanese technology transfer to Indonesia. In more specific terms, the research examines the following main research question : What are the effects of Japanese TT to Indonesia on Indonesian skill formation, that is, to what extent does the Japanese technology and skills transfer affect the skill formation of the Indonesian population ?

When the effects of Japanese technology transfer to Indonesia have been identified and examined, this research is expected to provide some policy recommendations for the government and to construct a theoretical model of technology and skill transfer. The recommendations are expected to answer the following questions :

1. What type of technologies / MNCs are most beneficial in terms of local skill formation ?.

2. What training should they do to make Indonesians receptive to Japanese technology ?.
3. What kind of infrastructure should be provided ?.
4. What sort of policy and incentive measures should be adopted by the Indonesian government to encourage greater and more meaningful technology transfer, particularly skill transfer to the local people.

With this objective in mind this study attempts to answer some secondary research questions, that is,

1. To what extent does Japanese technology transfer to Indonesia raise the levels of skills and knowledge of Indonesian employees ?
2. How are the skills and knowledge of Indonesian employees formed ?
3. What types of skill are provided to Indonesian employees?
4. Will the effect of technology transfer on skill formation by organizational size differ significantly different ?
5. Will the effect of technology transfer on skill formation differ significantly by types of industry ?.
6. Will the effect of technology transfer on skill formation differ significantly by level of sophistication of technology transferred ?.
7. Will the effect of technology transfer on skill formation differ significantly by level of educational background of employees ?.
8. To what extent will different forms of technology transfer or industry influence skill formation ?

2. THE RESEARCH METHOD AND CONCEPTUAL MODEL

2.1 Objectives of the Research

While the macroeconomic aspect of technology transfer by multinational corporations (MNCs) in general and Japanese MNCs in particular have already received considerable research, albeit often based on limited information, relatively little attention has been paid to the way in which this transfer of technology may have affected skill formation, in terms of the development and organization of human resources in the host country.

It should be noted firstly that the term **skill formation** is a new one in the study of business management and industrial democracy. The concept of skill formation was originally initiated in (formerly West) Germany and then was developed by the Japanese in Japan. The essence of the concept, as noted by Ford (1985,pp.1-19), is to embrace the idea of education, training, experience, and personal development. This concept is broad and covers all aspects of the skilling and development of all human potential. It is therefore different from the Western traditional concept of vocational training.

Basic to the concept of **skill formation** is training and its management system. A core feature of training in Japanese firms in Japan, is **job rotation**, that is, the movement of trainees (or workers) from job to job for a variety of job assignments. This practice is given to the trainees "to gain experience not only within a specific work site but also at related work sites as well" (Koike,1981,p.26). Koike (1981,p.26) further states that

"these movements from job to job may seem to have little to do with formal training, but in fact, they form the true nucleus of Japanese style skill formation". Another Japanese author Fujimori (1986,p.356) argues that job rotation, i.e., the movement from one job to another, is seen as "the Japanese way of forming skills". The same argument is also offered by Washio (1986,p.330-31) who sees quality control (QC) circles and the development of production know-how in the firm's factory as part of skill formation.

The Japanese methods of skill formation have played an important role in improving Japanese economic growth (Keiko 1981) and most writers point to "training" as instrumental in developing the skill of Japanese employees. And according to Kono in his article **Strategy and structure of Japanese Enterprise** (1984-85,p.181) "the need for training comes from necessity for the company, but it also derives from the idea of respect for people". In fact "in the way of training ," as argued by Fujimori (1986,p.357) it "is [an] essential factor of technology transfer".

Training or the methods of skill acquisition, in the Japanese system, as identified by Kono (1984-85), consists of two elements, (1) functional technical skills and (2) human skills. Training is conducted through (i) on-the-job training (OJT), (ii) self development (SD), and (iii) off-the-job training (off-JT). OJT is most emphasized in training and so in skill formation, and is carried out under planned instruction by supervisors. Along with technical training there is also a management training. This is carried out within the framework of the management

system adopted. The characteristics and main features of the Japanese system of management will be discussed in coming Chapters 3.9 and 3.11.

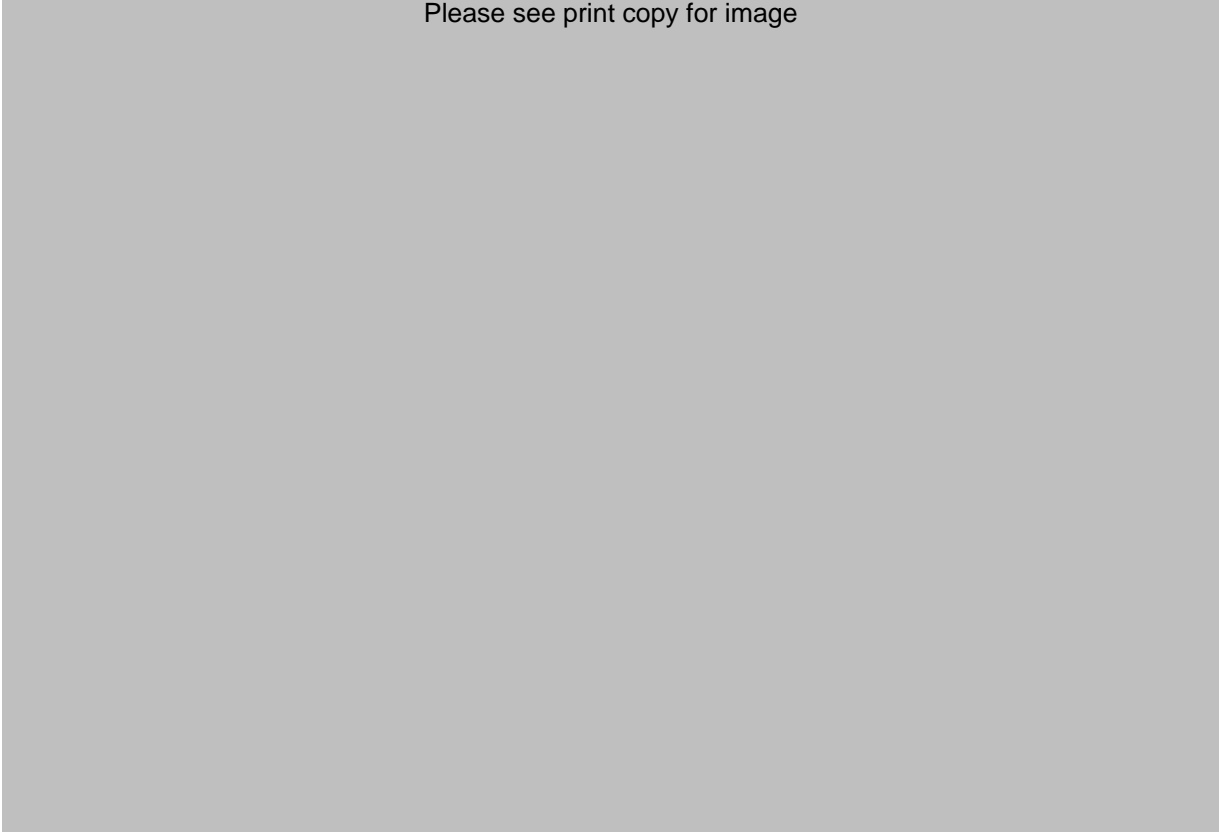
To encapsulate the various aspects of the Japanese system, Keys and Miller (1986) have analysed them in terms of factors underlying those practices as shown in FIGURE 1. Figure 1 depicts a pattern of causality underlying such factors as a long-run planning horizon, a commitment to life-long employment and collective responsibility, which are regarded as characterizing the Japanese management system.

It is commonly held that the Japanese management system, along with training, is responsible for forming required skill. In the case of the Japanese, the skill has been developed through various types of training, and training itself has been regarded as an essential factor in technology transfer. The questions that this research wishes to address are set out in the research statement.

So far there have been very little study undertaken to find out the effect of TT on skill formation in the host country and therefore, there is no instrument or model available to be used in this study. Although researches conducted by Alam (1978) on technology transfer to less developed countries, and by Greshenberg (1983) on multinational enterprises, transfer of know-how, technology choice and employment effect, were based on case studies, these researches did not touch the crucial issues of skills formation. Nevertheless, these two researches provide some valuable guideline for the basis of conducting this current study. A framework has been designed for use in this study

FIGURE 1
**Fundamental Factors Underlying Japanese Management Practices:
A Suggested Pattern of Casuality***

Please see print copy for image



**Source: Keys, J.B and Miller, T.R. (1984) "The Japanese Management Theory Jundi".
Figure 1. p.349.**

consisting of 3 elements, as shown in FIGURE 2. There are :

- (1) skill elements which consist of (a) Japanese specific managerial skills, (b) professional or functional skills, and (c) general managerial skills (conceptual, human and technical skills),
- (2) training modes (On-the-job training / in house training, off-the-job training, formal training (diploma / degree / certificate), conferences, short courses, counter system, etc.), and
- (3) occupational elements (Top leadership in the company, managerial positions, supervisory positions, administration positions, scientist / researcher position.

It is predicted here that the effect of TT on skill formation in the host country is determined by the moderating factors and industrial type of technology transferred (see Chapter 17.1). The industrial type of technology transferred will play an important role in determining the type of skill or knowledge transferred, because each type of technology will require a different kind of skill, and therefore need a different type of training. For instance chemical related technology will have different requirements for skills and training compared to those technologies related to the transport or textile industries in the manufacturing sector. The type of technology selected for this research is mostly manufacturing related technologies, as indicated in Table 2 and FIGURE 3, and together with the type of skills acquired, as well as the type of training provided to Indonesian nationals to acquire these skills, are the

FIGURE 2

**SKILL EFFECT OF JAPANESE TECHNOLOGY
TRANSFER TO INDONESIA (ISSUES INVOLVED)**

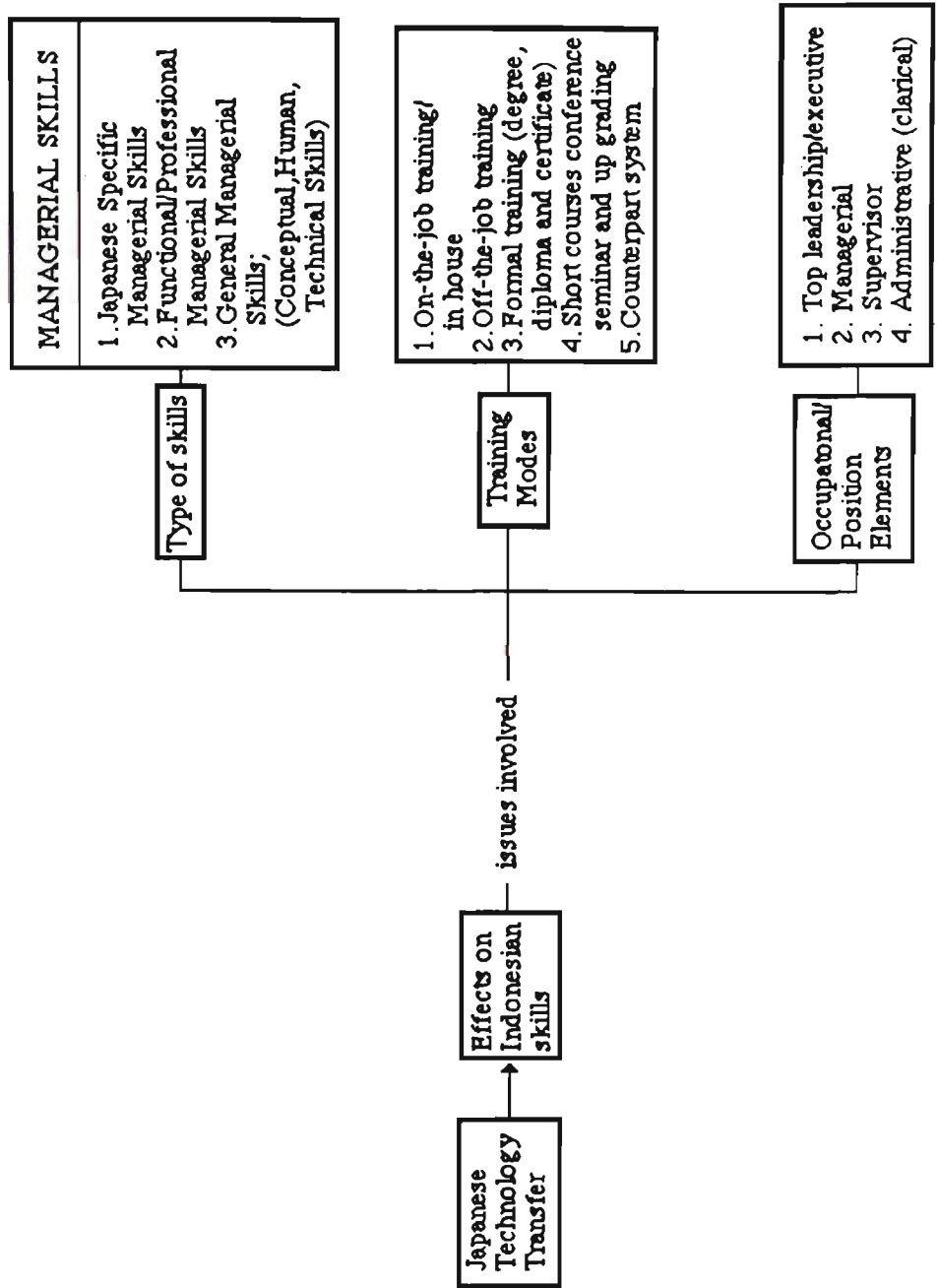
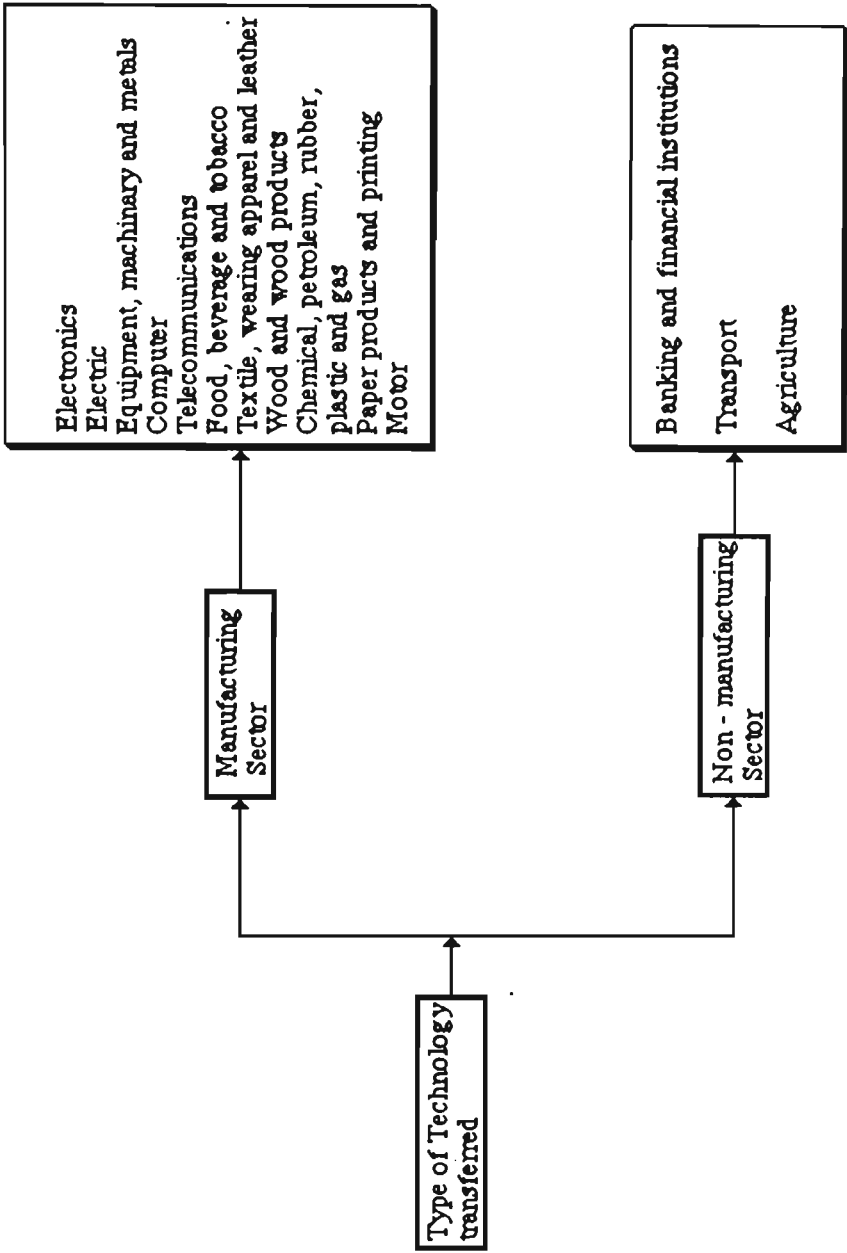


FIGURE 3
TYPE OF TECHNOLOGY TRANSFERRED BY INDUSTRY



subjects of this study.

It is important to note here that skill acquisition will be influenced by moderating factors especially, by the element of equity participation and 'control'. The issue is 'who controls the company ?'. The question of control is very much related to the amount of subsidiary autonomy given by the parent company and the ownership of the company. Control, which is regarded as an environmental factors, depends upon one of more of the following factors : 1. the intention of the donor, 2. the agreement between the two parties, 3. equity share, 4. the complexity of technology transferred and the transfer process, 5. local regulations. It is predicted or hypothesised here that 1. the greater the control possessed by the donor, the less skills are provided or transferred by the donor, meaning the lower the effect on the development of local skills, 2. the higher the technology sophistication or complexity (process) the higher the levels of skills, acquired.

It is postulated here that the presence of any foreign investment and the technology and skills it brings with it will result in some kind of positive effect, in terms of forming the skills of the local employees. The effect of technology transfer on the skill formation of the host country's employees or labor force is through various mechanisms such as worker education, training, work experience or counterpart system, that is working at different company to acquire skills or work experience, self development and participated in formal education program or short course programs.

In terms of the effects of technology transfer, as well as the lack of empirical studies of the effects of Japanese technology transfer to Indonesia in particular, the main objective of this research is to identify and analyse the effects of Japanese technology transfer to Indonesia on Indonesian technological development, and specifically to :

1. determine the effects of Japanese technology transfer to Indonesia on the skill formation of the Indonesian labor force working in Japanese subsidiaries in Indonesia,
2. determine the most effective way of transferring the Japanese skill / technology to Indonesian employees.
3. provide some policy recommendations on technology and skill transfer to the Indonesian government.

2.2 Research Contributions

This research is expected to enrich the existing literature on the transfer of technology, by providing information generally unavailable previously in English. Japan's extensive technological development over the last three decades or so has given rise to the growing export of Japanese technology to developing countries. There is some limited descriptive literature on Japanese technology transfers to some Asian countries, in particular to Indonesia (Wie 1987, Anwar 1976, and Kinoshinta 1986). The literature is primarily in the form of historical descriptions of the situation. The aim of this research is provide the first empirical analysis of this topic.

The literature on the effects of technology transfer

on skill formation of the host country is also sparse. What have been written on the subject of TT consists descriptions only mainly of general technology transfer and its impact on global matters such as monetary economics, economic growth, and political implications. As such, the literature gives little, if any, specific case studies such as that intended by this research.

2.3 Formation of Research Questions

A review of the literature and a preliminary investigation undertaken on the Japanese technology transfer to Indonesia reveals that the effects of this transfer may not exactly coincide with the generalized nature of the effects of Japanese technology transfer. Recognizing no empirical study has been undertaken concerning the effects of Japanese technology transfer to Indonesia, and lacking such study, no conclusions can be reached.

To determine various effects of Japanese technology transfer to Indonesia, an extensive literature review was made. The literature review will begin with a review of publications related to technology, foreign investment and technology transfers as well as international business management. In other words the purpose of this review is to address various questions in this study. From this synopsis of the studies, we hope to be able to isolate a series of effects of Japanese technology transfer to Indonesia. The result of this review will then be used to analyse the data obtained from interview and questionnaire given to Indonesian managers and directors working in

Japanese subsidiaries operating in Indonesia.

2.4 Research Methodology

The methodology adopted by this research is the case study approach. This approach is appropriate analysing, investigating, identifying and understanding complex social phenomena and real-life context of Japanese technology transfer to Indonesia.

The adoption of a case study approach for this study is very appropriate, not only because of the exploratory nature and complexity of the study but also because it is supported by, and based on, an existing theoretical framework of this type of case study-based research. Studies undertaken by Alam (1978), Wie (1987), Anwar (1976), Nath (1987), Lee (1987), Onn (1987), Kaosa-ard (1987), and Hyder (1988) on technology transfer-related issues used case study methods for their research. Yin pointed out that "the distinct need for case studies arises out of the desire to understand complex social phenomena. In brief, the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events" (Yin (1984, p.14). Furthermore, Yin stated that "in general, case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is a contemporary phenomenon within some real-life context" (Yin 1984,p.12). Yin further argued that "the case study's strength is its ability to deal with a full variety of evidence-documents, artifacts, interviews, and observations" (Yin 1984, p.20). This kind of view is also expressed by other researchers such as Rakhmat (1985)

Suryabrata (1983), Isaac and Michael (1974), Surakhmad (1982), Selltitz et al (1961), Whitney (1960), Nazir (1983).

In perspective, this is also an empirical, descriptive and analytical study of the effects of Japanese technology transfer to Indonesia.

1. It is descriptive because it factually describes a particular phenomenon or effect,
2. It is empirical because it relies on direct observation and investigation to achieve this descriptive analysis. Furthermore, this study is a case study which is an empirical study because, as pointed out by Yin, it
". investigates a contemporary phenomenon within its real-life; when
 . the boundaries between phenomenon and context are not clearly evident; and in which
 . multiple sources of evidence are used" (Yin 1984, p.13)
3. It is analytical in the sense that it seeks to determine the existence of associative relationships in the effects of the transfer.
4. It does not seek a normative description of what effect the Japanese technology transfer to Indonesia should be like, but rather an empirical description of what effect it actually has.

The descriptive method is appropriate for this study because its basic purpose is to identify present conditions and factors related to a particular phenomenon. Isaac and Michael (1974,p.18) and Uma Sekaran (1985), have presented a good description of the technique. Isaac and Michael point out that

"Description research is used in the literal sense of describing situation or events. It is the accumulation of a data base that is descriptive it does not necessarily seek or explain relationships, test hypotheses, make prediction, or get at meanings and implication, although

research aimed at the more descriptive methods" (Isaac and Michael 1974, p.18).
Uma Sekaran explains that

"A descriptive study is undertaken in order to ascertain and to be able to describe the characteristics of variable in a situation" (Uma Sekaran 1985, p.70).
In fact, the data collected by the descriptive methodology used in this case study-based research will seek to identify various issues relating to technology transfer and skill transfer.

The descriptive technique calls for data collection via one of two alternative techniques: the questionnaire or the intensive interview. It was decided that in order to gain the greatest degree of insight and detailed knowledge of the effects of Japanese TT to Indonesia an intensive interview of selected firms / executives and limited distribution of questionnaires should be employed. A structured interview (guided by a structured questionnaire) was used as this technique allows for a discussion of the answer rather than solely the receipt of an answer. The flexibility and facility for interview elaboration on questions is the principal advantage of the interview over mailed questionnaire. These elaborations should provide the insights necessary to shed some light on the possible reasons for the characteristics described by this research.

It should be noted that the major weakness of the interview technique is interview bias. Most discussions of interview technique mention several types of problems that could be interpreted as interview bias. First, to the extent that interviewers vary their approach from interview to interview they may be projecting their own personality into the situation and thus influencing the responses

(Mouly 1970,pp.266-67). This bias can be worse when more than one interviewer is involved in the projects. A second effect is the tendency of interviewees to answer questions in a manner that they believe the interviewer would like. Mouly comments that :

"Usually the respondent will orient his answers toward the sociable and courteous rather than simply toward the truth-especially if the investigator is a pleasant person. If, on the other hand, the interviewer is curt, the respondent is likely to evade questions or even to disagree just to register his annoyance" (Mouly 1970, p.267).

Because the interview is guided by a structured questionnaire, a weakness common to the questionnaire can also affect the interview results. That weakness is the validity of the questionnaire. Validity depends "on the ability and willingness of the respondent to provide the information requested" (Mouly 1970,p.242).

In conducting this research, these potential problems and weaknesses were controlled in several ways such as by utilizing carefully designed, structured questions in the questionnaire as an interview guide. The interview approach did not vary significantly from interview to interview. All interviews were conducted by the researcher himself, thereby eliminating any possible multiple interviewer effects. Pretesting the interview procedure and questionnaire served to both validate the questionnaire and provide the researcher with the practice necessary to perfect the interview approach. Thus, by carefully following a validated questionnaire and by having practiced the interview procedure, it is believed that potential interviewer bias was minimized.

In order to achieve the objective of the research framework of the effects of Japanese technology transfer to Indonesia a structured interview technique was employed. It was therefore necessary to develop two sets of well-prepared questions or questionnaire as a discussion guide for the intended interview. First set of questionnaire was designed for top executives and second set was for managers and/or directors of a company. The questions in the questionnaire were designed in such a way so as to obtain descriptive data relating to Japanese technology transfers. The questionnaire made use of both fixed alternative and open-ended questions with the objective being to focus on specific issues while allowing the interviewee sufficient latitude to express his or her ideas on those issues. A measure of the intensity of response will be incorporated into the fixed alternative questions. The list of questions and questionnaires were subjects to a pre-test by forwarding it to some selected Japanese subsidiaries in Indonesia and other relevant personnels and institutions. This exercise was important to guarantee error-free questionnaires, and ensure higher quality and realibility of the reseach findings. The pre-test was done before interviews were conducted. The experience obtained during the interviews with the selected firms / individuals also helped to a great extent in the formation of questions. The questionnaire were translated into Indonesian (Bahasa Indonesia) and then then back-translated into English in order to ensure the accuracy of the original translation.

The research is fully focused upon the Indonesian situation. Therefore, the interviews were conducted among

Indonesia executives (managers and directors) working in Japanese companies operating in Indonesia. Japanese business executives in Indonesia were not interviewed because of their refusal or reluctance to participate in this study, although every effort was made to accommodate their time for an interview (see Chapter 4 also discusses why the Japanese refuse to take part in this study). The companies interviewed were selected from among some 230 Japanese companies operating in Indonesia.

Both the questionnaire and the interview procedure were trialled in Australia and Indonesia before the interviewer departed for Indonesia. This was done by conducting structured interviews with some Indonesian and Japanese executives residing in Australia and Indonesia.

2.5 Analysis Method

This study adopts 'case study method' in pursuing its research objectives. The research is therefore designed according to the case study methodology and technique. It should be stated here that "the analysis of case study evidence is one of the least developed and most difficult aspects of doing case studies" (Yin 1984, p.99). This study adopts Yin's view who states that "the case study is a separate research strategy that has its own research design" (Yin 1984, p.28). Yin argues that

"the development of this research design is a difficult part of doing case studies. Unlike other research strategies, the potential "catalog" of research designs for case studies has yet to be developed. There are no textbooks, like those in the biological and psychological sciences, covering such design considerations as the assignment of subjects to different "groups", the selection of different stimuli or experimental

conditions, or the identification of various response measures" (Yin 1984, p.27).

An analysis method used in case studies research is what Yin (1984, p. 100) called 'a general analytic strategy'. The ultimate goal of this strategy is "to treat evidence fairly, to produce compelling analytic conclusions, and to rule out alternative interpretations. The role of the general strategy is to help an investigator to choose among different techniques and to complete the analytic phase of the research successfully" (Yin 1984, p.100).

There are two approaches to this general analytic strategy, (1) relying on theoretical propositions, and (2) developing a case description. According to Yin (1984, p.100) the first approach is to follow the theoretical propositions that led to the case study. The original objectives and design of the case study were based on the existing theories. However, this approach can only be adopted when there is a theoretical basis for the study. With respect to this current study, our literature review in sections 1.17 suggests that very little research has been undertaken relating to the subject being studied by this research (see Koike 1983, Jervies and Sinclair 1974, Siggel 1986, and Krbavac and Stretton 1988).

The second approach, according to Yin (1984), is to develop a descriptive framework for organising the case studies. This approach, Yin argues, serves as an alternative to the first approach when theoretical propositions are absent.

In view of the above argument and understanding the

existing works (see Section 1.17 and Chapter 3) on the subject that this study is interested in, this study adopts very much the second approach of the general analytic strategy, at the same time attempting to developed a theoretical basis based on the available and relevant studies that have been undertekan so far as implied in the first approach model.

In developing the analysis, this study examines the subject of Japanese technology transfer (TT) to Indonesia. The Japanese TT to Indonesia is the TT from the Japanese firms in Japan to their subsidiaries in Indonesia. The TT is conducted from firm to firm. The process of TT at the firm level is influenced by various factors. Choundhuri and Moulik (1986,p.10) divide those factors into external and internal environmental factors. The internal factors which are also known as 'organizational factors' relate to the firm's : (a) goals, (b) leadership style, (c) resources, (d) capabilities, (e) organizational structure, and (f) information flow. The external?environmental factors are categorized into (a) economic, (b) political, (c) social, (d) technological, (e) market related or competitive, (f) regulatory, and (g) physical or ecological.

These factors are believed to have played important roles in influencing the nature of the effects of TT. They are regarded here as moderating factors of TT. A moderating factor is taken here as to mean as

"one that has strong contingent effect on the independent variable-dependent variable relationship. That is, only when this variable is present (or absent) will the theorized relationship between the independent variable and

dependent variable exist-not otherwise." (Sakaran 1985,p.50).

The dependent variable in this research is skill formation. The moderating factors of this study as shown in the proposed General Model include: (1) Equity participation (ownership) / control, (2) Regulation / legal system of the host country, (3) Level of technological process, (4) Duration of operation, (5) Subsidiary autonomy (or parent company's control), (6) Level of local education, (7) Technological gap, (8) Donor attitude, (9) Complexity of technology, (10) Cultural gap, (11) Investment in training, (12) Political stability, (13) Local economic environment, and (14) Nature of production.

The way in which this research is approached is that the data are collected and then analysed. Because the data obtained are largely descriptive of the effects of Japanese technology transfer to Indonesia, elaborate statistical testing did not seem to be appropriate. However, where necessary several method of analysis and presentation of the data were used and certain tools of evaluation are also employed for each case study.

In analysing the effect of Japanese TT to Indonesia, the researcher experienced some difficulties in finding appropriate methods, models or instruments used in the study because there has not been such comprehensive and integrated research undertaken on the question. What was ensured in the research was that to gather various scattered statements made in some studies were used to help develop the instruments of analysis and evaluation.

2.6 Statistical Tools Used In Measurement And Testing

Because this study is an in depth exploratory study and analysis based solely upon the case studies, there are no sophisticated statistical tools or models used in the research analysis. In analysing the information and data gathered, previous research was surveyed and intensive personal and more distant interviews were conducted personally by the researcher.

2.7 Data Collection Method

There is a theoretical basis of conducting research and collecting data on case study-based research as developed by Yin (1984). Yin's study (1984, pp.42-54) on case study research presents two main designs, (1) single-case study design, and (2) multi-case studies design.

The first design is basically appropriate when (1) there is a single experiment and many of the same conditions that justify a single experiment, (2) the case represents an extreme or unique case, (3) there is a levatory case, that is, when an investigator has an opportunity to observe and analyse a phenomenon previously inaccessible to scientific investigation. The multi-case design is stated by Yin as appropriate where "the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust. At the same time, the rationale for single-case designs cannot usually be satisfied by multiple cases" (Yin 1984, p.48).

This research adopts a multiple case studies approach. The logic and rationale of adopting the multiple

case studies, in many respect, is the same as the single case study model. Each case study is to be carefully selected and analysed so that, as Yin (1984, pp. 48-49) argues, it either (a) predicts similar research (**a literal replication**) or (b) produces contrary results but for predictable reasons (**a theoretical replication**). This study, as an exploratory study, adopts the theoretical replication model. Because of the lack of theoretical basis of previous studies, and the perceived certain characteristics of Japanese technology transfer to Indonesia that may be similar to characteristics of Japanese technology transfer to other countries (to be discussed later in Chapter 3), this study is expected to produce results contrary to those of studies undertaken in countries other than Indonesia, but for predictable reasons. It is expected that the Japanese technology transfer to Indonesia is unlikely to produce a particular or specific phenomenon in this study (a literal replication), but this study will produce a theoretical replication.

It should be pointed out here that the theoretical replication logic as suggested in in this study should be distinguished from the sampling logic commonly used in surveys. As stated by Yin in "the sampling logic, a number of respondents (or subjects) is assumed to "represent" a larger pool of respondents (or subjects), so that data from a smaller number of persons are assumed to represent the data that might have been collected from the entire pool" (Yin 1984, p.50). The application of this sampling logic in case studies is misplaced. As further argued by Yin (1984,

pp.50-52), first, case studies should not generally be used to assess the incidence of phenomena, and secondly, a case study would have to cover both the phenomenon of interest and its context, yielding a large number of potentially relevant variables, and thirdly, if a sampling logic had to be applied to all types of research many important topics could not be empirically investigated. Therefore, the case study research of replication logic, as adopted by this study, is different from that of sampling logic as commonly found in surveys.

In an effort to analyse the effect of Japanese technology transfer to Indonesia various data and information were gathered. Data collection has been done through intensive personal interview, follow up personal interview and telephone interviews, as well as through use of limited questionnaires in the form of a list of questions to be asked prior to the interview. Two sources were used to select the sample:

1. A directory called **List of Japanese Investment Projects in Indonesia** , published by JETRO - Japan External Trade Organisation (1989, 1990 and 1991), Jakarta. These publications list various Japanese companies operating in Indonesia and give short background of the companies.
2. Various publications published by the Indonesian Foreign Investment Board (BKPM), Jakarta, Indonesia. Those publications contain the amount of Japanese investment in Indonesia and areas where Japanese companies are investing.

As some of the addresses listed in these sources were quite old, further checks were made with other Indonesian

trade directories and Jetro's Jakarta office's publications. A number of firms listed in the sources were found not to exist any more or had moved to other places often far from Jakarta. Therefore, they had to be excluded from the sample. There were 25 firms visited and interviewed, but at the final stage only 16 firms were included as being in the researcher's view, reliable and acceptable for this study's analysis. Those excluded from this study were either reluctant to talk about their personal experiences, views and opinions of working with the firm or to talk about the company's background and policy, or the information that was given by the interviewee was considered not reliable, valid or relevant to the study.

The questionnaire used in this research was circulated in the Department of Management, University of Wollongong. Their comments and suggestions were helpful in constructing a more useful and meaningful draft list of questions to be asked in the interviews. The list of questions and questionnaire were designed in order to make maximum use of both open-ended and structured questions. Basically the list of questions and questionnaires consists of four main questions relating to :

1. Identification of the respondents (i.e., subsidiaries)

This part was concerned with finding out and identifying the characteristics of the respondents (Japanese MNCs subsidiaries operating in Indonesia) such as information on the year the subsidiary began operation, the type of products/goods produced, and the nature of the joint - venture with the local firm.

2. Technology Transfer

This part dealt with the type of technology transfer mechanisms: Joint venture, Licensing, Turnkey, and Foreign Direct Investment. The respondents were asked to identify the mechanism used to transfer the technology.

3. Skill Formation

This section of the questionnaire was aimed at investigating the type of skill transferred to, and formed in, the host country. In this study the type of skill formed are managerial skills which consist of conceptual, human and technical skills. This part of the questionnaire was also directed toward examining how and where those skills were formed, and what mechanism/modes were used to develop the skills.

4. Other Factors

This part of the questionnaire was directed towards examining whether the five factors, namely, organization size, the level of local education, the host government's regulation, and the type of industry, moderate the effect of the technology transferred on the skill formation of the host country's employees as a result of technology transfer. The respondent was asked about their perception regarding the role of each factor in the operation of the subsidiary.

2.8 Limitations and Problems of the Methodology

It should be noted in advance that there are some problems faced in conducting this research which therefore present some limitations to its coverage. They are:

1. For a number of aspects concerning Japanese subsidiaries, the researcher's information was based solely on the information data and responses of the Indonesian personnel working in the firms. This could result in bias and may more reflect the thinking of the Indonesian counterparts or employees than the actual situation. But again the whole objective of this study was to look at the experience and realities faced by the Indonesian employees (executives and managers) working within the Japanese firms.
2. The researcher would have liked to have asked the Japanese executives to provide a brief description and history of the technology transferred and the operation of the the firm in Indonesia from the Japanese point of view and from the company's headquarter's stand point. But the Japanese company's policy and corporate culture appears to prevent Japanese employees (executives and managers) working in Indonesia from providing information to outsiders, including this researcher.
3. As the researcher could not obtain information and responses from Japanese executives, it was not possible to compare and check the consistency of the information provided by the Indonesian executives.
4. Only Japanese firms operating in Indonesia were researched and interviewed, especially those involved in the manufacturing sector. The number of firms categorized in this sector is explained in section 2.13 (Respondents: Sampling Size and Type of Industry) together with other selected sectors such as trading and construction industry.

5. The research was limited in that it does not consider the transfer of Japanese technology through licensing mechanisms to wholly owned Indonesian firms. Information as to which Indonesian firms have licensing agreements with the Japanese firms appear to be not readily available.
6. The research only deals with issues concerning Japanese firms that are investing in Indonesia and did not make any great attempt to compare them with Japanese firms operating in countries other than Indonesia.
7. The research relates solely to Japanese firms in Indonesia. The interviewer is an Indonesian whose principal language is Indonesian (Bahasa Indonesia) with fluency in English and with no Japanese language at all. To the extent that the interviews were conducted in English or Indonesian, one or both of the parties involved operated in a language other than his / her native language. This may have limited the clarity and depth of the interviews or conversations.
8. In any interview situation, a possible limitation may be the interviewee's propensity to answer the question in a manner that he or she thinks the interviewer wants. If this occurs, it will limit the validity of the results of the research.
9. The possible reluctance of the interviewees to answer questions which related directly to what may be classified as the company's confidential business strategy may limit the depth of the research.

2.9 Type of Investigation

This study is not by itself a causal study establishing a definite 'cause---effect' relationship. Rather, the study is aimed at delineating various important aspects associated with the research problem.

The study was also intended to find out to what extent the technology transferred affected the skill development and/or formation of the host country's employees.

This non-causal study is, therefore, both descriptive and empirical in nature as the study is intended to describe and explain the effect of the technology transferred on the skill development of the local workers. This study is also basically an exploratory study as very little previous research appears to have been done and previous knowledge is scant.

2.10 Study Setting

This is a field study that was conducted in Indonesia on 16 Japanese companies/subsidiaries operating in Indonesia. These 16 subsidiaries have participated actively in the study by allowing themselves to be visited and interviewed. The respondents were carefully selected to maintain the validity of the information and data given by the respondents (interviewees).

2.11 Scope of the Research

The Japanese subsidiaries studied were involved in many industries in Indonesia including textile, rubber, electronic, construction, transport, and chemicals. The

scope of this research was primarily the manufacturing sector with selected companies of other sectors.

2.12 Respondents : Sampling Size and Type of Industry

As shown in TABLE 3, in October 1987 there were 230 Japanese subsidiaries operating in Indonesia and they were involved in various sectors of the Indonesian economy. Most were in manufacturing with 138 firms or about 60 percent of the total Japanese firms in Indonesia, followed by agriculture and construction as shown in TABLE 4. Of the 230 Japanese subsidiaries, 16 firms (or 7 percent) were the subjects / respondents of this research and were intensively and actively visited and interviewed. The selection of the 16 companies were based on (1) the size of the company, (2) type of industry in which the company has been operating, (3) the length of time the company has been in operation should be at least at least five years, (4) the employment and involvement of staff at management or executive level, (5) willingness of managerial staff of the company to participate in the interview, and (6) Jakarta location of the companies' head office.

2.13 Respondents and Interview

All 16 selected Japanese firms (subsidiaries) were mostly operating in the manufacturing sector in Indonesia and were chosen from the 138 (see Tables 3 and 4) Japanese joint venture companies operating in Indonesia as respondents of this research. The type of technology transfer to be investigated was manufacturing related technology. Manufacturing related technology is indicated in Tables 2, 3, and 4.

TABLE 3

JAPANESE FIRMS OPERATING IN INDONESIA
AND SAMPLING SIZE OF THE RESEARCH

S e c t o r	Operating Firms : Selected Firms Sampling Size			
	No	%	No	%
1.Manufacturing :	138	60.0	9	6.5
2.Agriculture :	35	15.2	-	-
3.Electricity & Gas :	22	9.6	-	-
4.Commerce :	8	3.5	1	12.5
5.Transport & Communications:	7	3.0	4	57.1
6.Services :	4	1.7	-	-
7.Construction :	22	9.6	2	9.0
8.Banking :	15	6.5	-	-
T o t a l	230	100.0	16	7

Source : JETRO (n.d. 1982) "Japanese Foreign Investment in Southeast Asia". Tokyo.

BKPM (1986) "Guide for Investors", Jakarta.

TABLE 4**JAPANESE MANUFACTURING SUBSIDIARIES OPERATING IN INDONESIA**

Industry Type No.	SECTOR	No. of Firm		
		Total	Interviewed	Pilot Survey
220	Food	2	-	-
221	Beverage	1	-	-
220	Tobacco	1	-	-
223	Textile Mill Products	22	5	1
224	Footwear, Apparel and Other Textile Products	5	-	-
225	Wood, Cane and Cork Products	8	-	-
226	Furniture and Fixtures	4	-	-
228	Printing, Publishing and Allied Products	2	-	-
229	Leather and Fur Products	2	-	-
230	Rubber and Plastics Products	6	-	-
231	Chemicals and Chemical Products	26	2	1
233	Non-metallic Mineral Products	5	1	-
235	Metal and Steel Products	24	1	-
236	Non-electrical Machinery, Equipment, Instrument and Apparatus	8	-	1
237	Electrical Machinery, Apparatus, appliances and Supplies	4	1	-
238	Transport Equipment	17	-	1
239	Miscellaneous Products	1	1	-
	Total	138	9 ***	4
	%	100	12.3	2.9

Notes : * Seven other subsidiaries involved in different industries other manufacturing are not included in this Table. They are, 1 trading, 1 construction, 1 building and 4 automobile industries please see Table 3.

** The 4 automobile companies surveyed are not included in transport equipment manufacturing industry.

*** This is manufacturing sector only, please see Table 3.

Source : Developed from Jetro (1982) Indonesian section, pp. 3-25. Jetro, Tokyo.

The selection of those 16 Japanese subsidiaries was to some extent influenced by the location of the firms which were mostly located in Jakarta and most Japanese foreign investment in Indonesia has been in manufacturing sector. In the beginning only firms in and around Jakarta were selected, but later some firms outside Jakarta were also studied. This was purely because of the financial and time constraints on the researcher which restricted travelling. Nevertheless, the selected firms provide a representative coverage satisfies the creteria on page 46.

In the process leading towards the interview, the personnel manager or public relations officer of the selected companies were either contacted by telephone or visited at the company's main office to arrange the interview. After the objectives and details of the proposed research were explained, request was made to make appointments with the chief executive and/or manager or director of the company for an interview.

It should be noted that most of the Indonesian managers and managers working with the Japanese joint venture were found to be willing, although some refused, explaining that their role in the companies, their agreement with the Japanese companies, and the rules or policy of the company often restricted the manager or director in discussing the company's policy and strategies with outsiders. Others who refused to be interviewed cited their reason as 'I am too busy and have no time' or ' I don't have time, the boss [meaning the Japanese] is here'. In all cases Japanese executives and managers were unwilling to be interviewed. When an appointment was

successfully made with a Japanese executive or manager, they only said that they did not have time and asked the researcher to meet the Indonesian manager.

When an appointment was successfully made, the meeting was arranged with the Indonesian executive or manager working in the company. The meeting lasted for 2 to 3 hours discussing various aspects of the company's business management and strategy, human resources management and policy, especially the company's staff development program and training program, technology acquisition and transfer, staff promotion, working system, within the company, the company's relations with its headquarters in Japan, as well as its organisation structure. Many of the Indonesian executives and managers provided a time for the interview and were willing to be re-interviewed. This condition allowed the researcher to develop further or follow-up questions and have more intensive discussions with the interviewees or respondents. In some cases interviewees requested the list of questions before the interview was held and gave as their reason that it would help them to get relevant information and data for the researcher. The researcher agreed to that request.

In a typical interview, the respondents (interviewees) described the background of the companies, the reason for the company's collaboration or joint venture with the Indonesian partner or partners and the success of the joint venture, reasons why the Japanese executives and managers were unwilling to be interviewed since they were unwilling to meet any Indonesians or guests to talk about the company. After that, the researcher would ask specific

questions dealing with the questions raised in this study and issues that were not covered by the interviewee. In most cases, the Indonesian executives and managers were found to be co-operative, although in many cases they requested certain details not to be disclosed, such as the terms and conditions of the company's policy and joint venture agreement, and they often asked that their names not be disclosed. All the interviewees refused to be tape recorded and in any case it was not considered to be suitable by the researcher. However, the researcher took extensive notes during the interview.

A draft report was prepared soon after the interview and gaps in the information were identified. Sometimes it was possible to fill the gap by consulting published information given by the interviewee during the interview, but usually the researcher recontacted the interviewee for additional information by telephone. However, if the interviewee was willing to be revisited a second or even third time, another interview was conducted for follow-up discussions.

The researcher believes that the nature of the technology involved in the transfer and the effects of the transferred technology on the skill development of the recipient country's labour force to be one of the most neglected areas of research in this field. An attempt was made in these case studies to examine the nature of the technology transferred and attention was given to the development and provision of skills and expertise of the workers utilising and operating the technology.

2.14 Preliminary Research

To assist the final field research, some preliminary research and pilot survey of 4 Japanese companies (or 25% of the total respondents) were conducted (see Table 4), through making contact with various government bodies, research institutions, Japanese firms operating in Indonesia, as well as making a library research literature review, apart from drafting relevant questionnaires.

The following is a list of institutions that were contacted and interviewed before and during the field research. They are :

1. IN INDONESIA, agencies contacted were :1. BKPM - Badan Koordinasi Penanaman Modal (Investment Coordinating Board), 2. Finance Department, 3. Central Bureau of Statistics, 4. KADIN-Kamar Dagang Indonesia (Indonesian Chamber of Commerce), 5. JETRO-Japan External Trade Organization, 6. 4 Japanese subsidiaries in Indonesia.
2. IN AUSTRALIA : 1. Japanese Consulate General, 2. Japanese - Australia Association, 3. Japanese and Australian Academics, 4. Jetro Office in Sydney.

2.15 Organization of the Research

In composing the result of this research, the researcher adopts a model of what Yin (1984, p.132) termed it as "Liner-Analytic Structure". The structure in which "the sequence of subtopic involves the issues or problem being studied, the methods used, the findings from the data collected and analyzed, and the conclusions and implications from findings" (Yin 1984, p.132).

Chapter 1 contains the background reasons for

selecting the research topic and the problem statement of the research, and Chapter 2 discusses how this research was undertaken is given as well as describes the research methodology and procedures of collecting data, interview procedures, the questionnaire, the method of analysis, a review of the literature, sources of data and the characteristics of the sample. Chapter 3 provides a literature review of definition and concept of technology and the theoretical background to technology transfer, classification, mechanisms, barriers of technology transfer, as well as research on Japanese technology transfer.

Chapter 4 contains 16 case studies which give insight into the effect of Japanese technology transfer of skill formation of the Indonesian managerial staff. Chapter 5 contains findings of this study and analyses of the findings and case studies. Chapter 6 contains detailed analysis on the establishment of a model related to technology transfer and skill formation as a result of this study. Chapter 7 concludes the study of the effect of Japanese technology transfer to Indonesia and makes some policy recommendations, and suggests some areas of further study.

2.16 Conceptual Model:

This study's research topic falls within the general field of technology transfer in which there is an amazing breadth and the depth to the field. A great deal of descriptive studies and of research has been undertaken and published. However, most of these studies (Koike 1983,

Jervis and Sinclair 1974), Krbavac and Stretton 1988), as argued above, have very little, if any, relationship to the skill formation effect of technology transfer, and this, according to Koike (1983), is due to a neglect of research into skill formation. Koike argued, "the basic reason of this neglect is that skill has been formed in such an automatic fashion that management can operate smoothly without being concerned about it" (Koike 1983, p.4). Koike further argues that

"there is very little research about skill in small enterprises. Generally speaking, research about skill is, both theoretically and empirically, quite difficult; there is not much done on big enterprises either" (Koike 1983, p.4)

It is argued by Koike (1983), Siggel (1986, p.230), and Krbavac and Stretton (1980) that most of the studies undertaken so far are descriptive studies and those studies have lacked empirical evidence. As a result, the empirical evidence to test the relative importance of various hypotheses is therefore very limited (Krbavac and Stretton 1980, p.7). This argument confirms an earlier study by Jervis and Sinclair which said that

"the number of empirical based field studies is very small. There has been little in the way of theory building accompanied by tests of hypotheses" (Jervis and Sinclair 1974, p.147).

Meanwhile, there have been several attempts by scholars such as Gruber and Marquis (1969), Allen (1966), Bar-Zakey (1971 and 1974), Baranson (1976), Rogers (1972), Conners et al. (1985), Kedia and Bhagat (1988), and Samli (1985), to create models of the technology transfer process. Most models tend to be graphical presentation of

technology flows and often highlight either interpersonal communications or the decision points involved in technological development. This section discusses a proposed model relating to this study.

2.16.1 General Research Model:

Most researchers point out that technology transfer models tend to be descriptive rather than quantitative in their approach (Jervis and Sicclair 1974, Siggel 1986, and Krbavac and Stratton 1988). In fact, Bar-Zakey (1971) has observed that "one shortcoming of the mathematical models.....is that the conceptual framework must be molded into their forms, rather than vice versa" Bar-Zakey 1971, pp.321-22). Although technology transfer can basically be divided into domestic and international transfer, the bulk of the models seek to describe domestic flows. Bar-Zakey (1971) once again argued that the basic factors affecting technology transfer are the same, and indeed, some of the models could be used to describe either.

Three of these models are of interest to this research: Samli (1985), Kosenko and Samli (1985), and O'Dochartaigh (1976).

(1) The Samli Model

In developing his model as shown in FIGURE 4, Samli warned that "no one all-inclusive and perfectly functional model of technology transfer is applicable to all related situations" (Samli 1985, p.8). However, the model developed by Samli is quite broad and provides insights into the key components of technology transfer. Those components consist of five main components: the sender; the

FIGURE 4

THE BASIC MODEL OF TECHNOLOGY TRANSFER



Please see print copy for image

Source: A. C. Samli (1985) "Technology Transfer : The General Model". Figure 1.1, p. 9.

technology; the receiver; the aftermath; and the assessment. The interaction of these elements, according to Samli's model in Figure 4, would either facilitate or hinder the successful transfer of technology in question. Samli's model explains that the sender must have willingness to transfer certain qualities, such as knowledge, and sensitivity to, the receiver's needs. The receiver often has different needs, resources, values and culture. Successful technology transfer implies congruence between the sender's needs and understanding of the recipient's need, the nature of the technology, and the receiver's priority ordering as to immediate economic needs. There are different types of technology transferred, but determining the appropriate technology that the receiver needs and transferring it effectively are recognized by Samli as a most difficult task. There are various barriers caused by both the receiver and sender of the technology that need to be overcome. The appropriateness of the technology, according to this model, must be assessed on the basis of numerous factors such as market conditions, raw material requirements, economies of scale, labor intensity and costs, adaptability of the machinery transferred to the local's needs and prevailing condition of the technology of the recipient. When the transfer process is completed, the next task is to evaluate the aftermath and assess the direct and indirect impact of, and the whole outcome of, the transferred technology, so future attempts of transferring the technology will be more successful.

(2) The Kosenko and Samli Model.

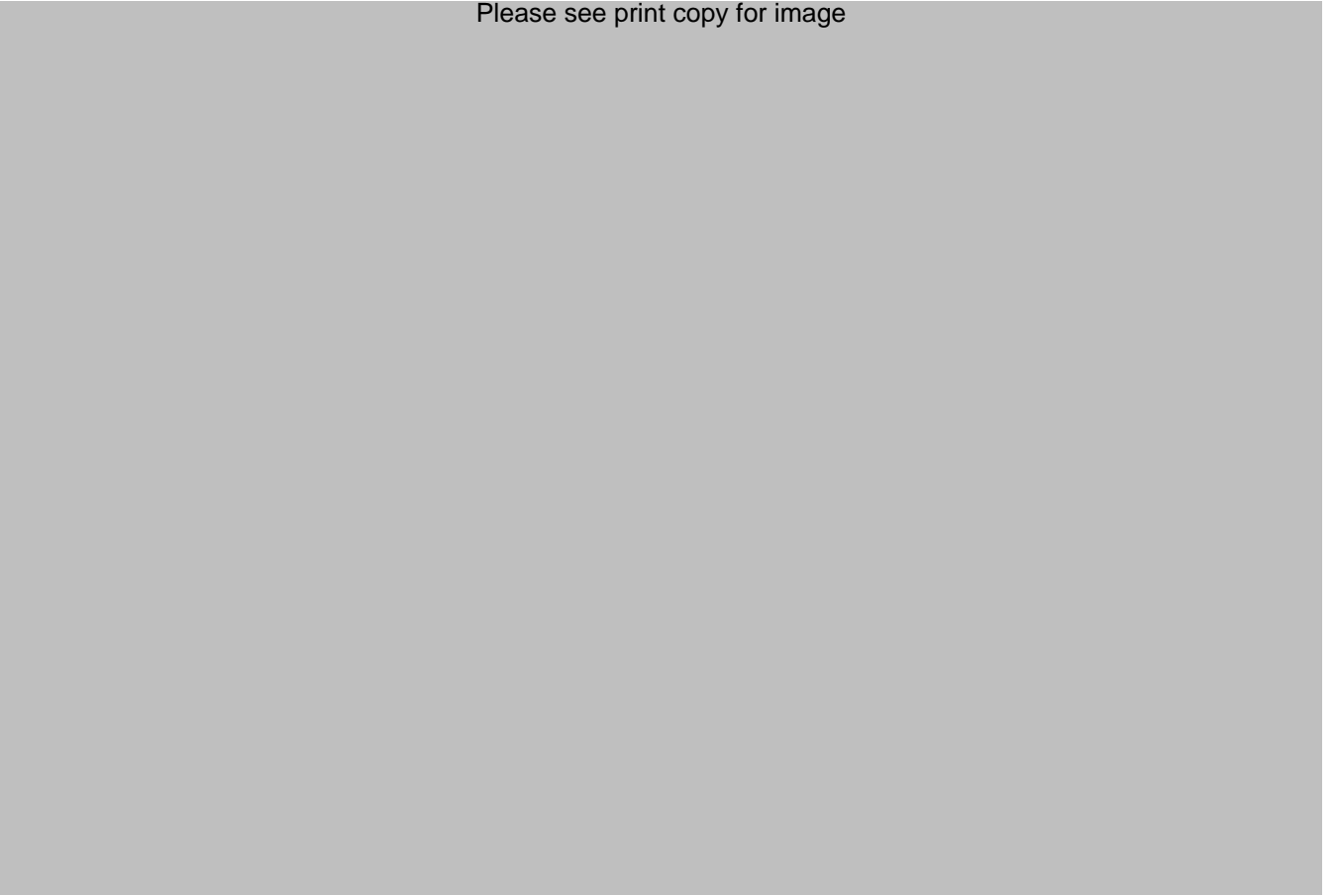
The Kosenko and Samli model as indicated in FIGURE 5 depicts a general model of technology transfer, as in the case of the American technology transfer to China. However, Kosenko and Samli said that "although this descriptive model was developed with primarily China in mind, it is applicable to other Third World countries as well" (Kosenko and Samli 1985, p.112).

The Kosenko and Samli model indicates two parties in the process of technology transfer, the exporting firm (U.S.) and the importing firm (the Chinese). It is argued that in transferring the technology (from the U.S.), the technology transferred should be integrated with service and information relating to the technology. The argument is that the higher the level of complexity of the technology transferred, the greater the need for a clear understanding of the relationship between technological complexity, and information and service support.

From the technology recipient's stand point (the Chinese), to have the technology transfer take place, there should be a willingness to purchase the technology. They point out that the greatest problem faced by the technology transferee is its ability (or inability) to absorb the purchased technology. The ability to absorb it is limited or impeded by various barriers such as low levels of local education, cultural factors, the nature of the industrialization program, the urbanization dilemma, political problems and on insufficient infrastructure. These barriers can be compensated for by various business policy measures to attract foreign investment such as

FIGURE 5
TECHNOLOGY TRANSFER MODEL

Please see print copy for image



Source: R. Kosenko and A. C. Samli (1985)
Figure 7.1 p. 112

profit expatriation and providing investment incentives.

(3) O'Dochartaigh Model.

The third model of interest in this study is the one developed by O'Dachartaigh (1976). The O'Dachartaigh model, shown in FIGURE 6, illustrates graphically the type of environment in which the technology transfer takes place. The process of technology transfer has built into it a **totality** concept which consists of three main elements: the donor of the technology transfered, the mechanism used in transferring the technology; and the recipient of the technology transferred, that is, the host country.

In O'Dachartaigh's term of **emitter** for the generator (donor) of the technology, are government agencies, or indeed the governments themselves, private industry, including multinational corporations, and international organizations such as the various agencies of the United Nations. The channels or forms (often called **mechanisms**) of technology transfer include direct foreign investment, joint ventures (including majority and minority stake), licensing (including trade-marks), management contracts, personnel, information flows, divestment, and machinery, technical assistance (including turnkey plant). The receivers of the transmitted technology may correspond directly to the emitter, for example, a government may transfer to another government, or a government agency to another government agency, a MNC may transfer to a subsidiary, and an individual to other individuals.

O'Dochartaigh notes that there can be a considerable degree of overlap between these different parties in the

FIGURE 6

THE PROCESS OF TECHNOLOGY TRANSFER: TOTAL VIEW



Please see print copy for image

Source: A. O'Dochartaigh (1976) "Total Technology Transfer in Transnational Corporations". Figure 1, P.131.

transfer process in the use of channels in transferring technology. The use of various channels are often not independent of either the emitter or the receiver, and vice versa.

The concept of this third model's components of the transfer mechanism is the same as the previous models, except that the management contract referred to here is a system whereby the foreign party provides most of the services offered by direct foreign investment, but excludes any equity participation (see Gabriel 1967). Technical assistance, meanwhile, involves no equity participation and has its purpose design and supply of equipment, and help with **start-up**. A complete unit delivered together with start-up assistance, is termed a **turnkey plant** (O'Dochartaigh 1976, p.132).

(4) A proposed General Model of Japanese Technology

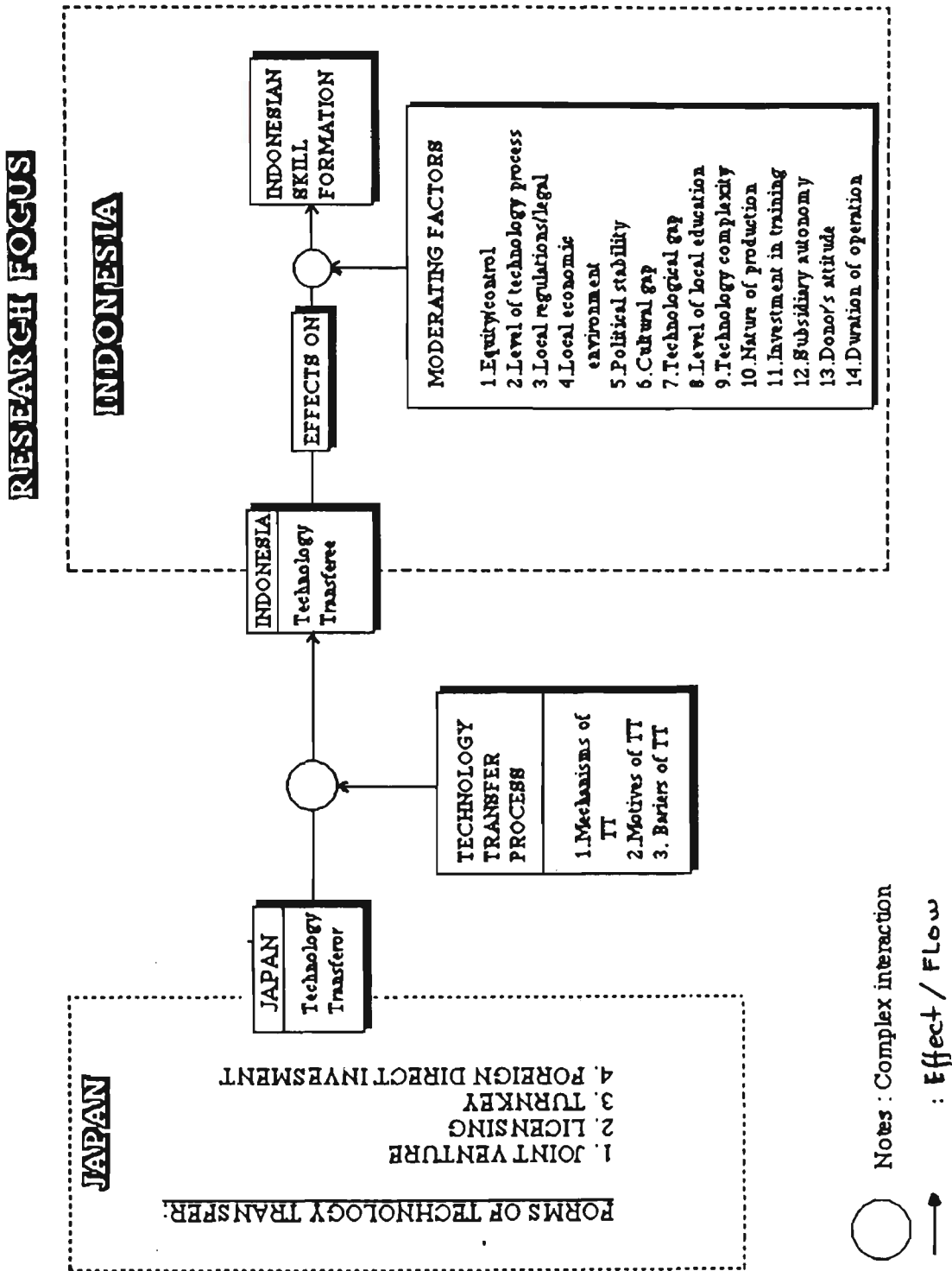
Transfer to Indonesia

Based on the above discussion and the three models discussed, we are able to develop a proposed General Model relating to this study on the effect of Japanese technology transfer on the skill formation of Indonesian employees as shown in FIGURE 7.

The General Model (Figure 7) depicts the process of international technology transfer from Japan (the sender / technology transferor) to Indonesia (the receiver / technology transferee). There are two broad components in the general model, (1) the type of technology transferred and (2) the effect of each type of the technology transferred on local skill formation. Details of these two

FIGURE 7

A PROPOSED GENERAL MODEL OF JAPANESE
TECHNOLOGY TRANSFER TO INDONESIA



components will be outlined in the conceptual model. A review of literature on the general issue of technology transfer and of Japanese technology transfer reveals some significant issues as discussed below:

1. The modes of technology transfer:

Robock and Simmonds (1983) divide the modes of technology transfer into two components, **non-commercial transfer** (government to government agreements, foreign study, various forms of foreign aid) and **commercial transfer** (foreign direct investment, turnkey projects, trade in goods and services, contract and agreements / licensing, research and development, employment of foreign personnel, and acquisition of foreign companies). Erdelik and Rapoport (1985) divide the transfer into **formal channels** and **informal channels**. Formal channels include licensing, foreign direct investment (FDI), sales of turnkey, joint ventures, and cooperative research arrangements, while informal channels are basically the same as some aspects of Robock and Simmonds's non-commercial and commercial distinction except they add modes such as open literature and technical books, trade shows and exhibits, and reverse engineering. Cavusgil (1985) mentions that technology transfer from developed to developing countries tends to use modes of capital, management, technical know-how and R&D. However, Cavusgil points out that no single method is perfectly suited to all circumstances, each has its separate advantages and shortcomings.

Balcat's research (1985) on Italian technology transfer to India suggests that the licensing agreement is

the most popular mechanism used, followed by turnkey agreements, joint ventures and sales of patents. Research conducted by Hieneman et al. (1985) and Ozawa (1981) on Japanese technology transfer to Southeast Asian countries reveals that foreign direct investment is the most commonly employed transfer mechanism. Most of those direct foreign investments have been generally made in the forms of wholly owned subsidiaries. An increasing number of new investments have been joint ventures involving shared ownership between local and foreign partners. The introduction of regulations or legislation by the host country has been responsible for the growth of joint ventures. Kaynak stated that the aim of the host country's is "legislations either prohibiting total foreign ownership or making incentives conditional upon a certain degree of local ownership" (Kaynak 1985, p.163). This is in contrast to Japanese technology transfer outside of Asia which mostly uses licensing. The same conclusion was also reached by Lee (1984), Teece (1981a) and Tsurumi (1976). Tsurumi especially mentioned that Japanese technology transfer to Malaysia, Thailand and Indonesia was through foreign direct investment and also licensing.

Other studies suggest that Japanese technology transfer to Southeast Asia was also undertaken through joint ventures (Yoshino 1975, Shudan 1984 and Ozawa 1981). Ozawa (1979) and Akiyama (1981, p.411) as quoted by Komoda (1986), argue that joint ventures provide more opportunities for transfer compared to mere licensing agreement. This view is widely shared by Japanese students of technology transfer (Komoda 1986). Quinn's study of the

British aluminum smelter and the General Electric-Machines Bull merger, suggests that joint ventures were believed to "provide the only feasible means for domestic companies to obtain the capital, technical know-how, management skills, or market access needed to bring a national industry up to an internationally competitive level" (Quinn, 1969, p157).

Briefly, the mechanisms used for transferring technology as discusses in various research is as follows: foreign direct investment (Erdelik and Rapoport 1985, Ozawa 1981, Lee 1981, Tsurumi 1976, Robock and Simmond 1983, and Kojima 1978); turnkey projects (Erdelik and Rapoport 1983, Balcat 1985, and Robock and Simmond 1983); licensing / contract agreements (Robock and Simmond 1983, Balcat 1985); joint ventures (Erdelik and Rapoport 1985, Balcat 1985, Ozawa 1981 and 1979, Akiyama 1981, Komoda 1986, Quinn 1969, Robock and Simmond 1983, Yoshino 1974, and Shudan 1974); sales of patents (Balcat 1985); Franchasing (1985), trade in goods and services (Robock and Simmond 1983); research and development agreements (Robock and Simmond 1983, Erdelik and Rapoport 1985, Cavusgil 1985); employment of foreign personnel (Robock and Simmond 1983); product-in-hand-contact (Balcat 1985); foreign study, foreign aid, and acquisition of foreign companies (Robock and Simmond 1985).

There are four main mechanisms:

- (1) joint venture (Erdelik and Rapoport 1983, Balcat 1985, Ozawa 1979 and 1981, Akiyama 1981, Komoda 1986, Quinn 1969, Robock and Simmond 1983, Yoshino 1974, and Shudan 1974).
- (2) direct foreign investment (Erdelik and Rapoport 1985, Ozawa 1981, Lee 1981, Teece 1981a, Tsurumi 1976, and Robock and Simmond 1983).
- (3) turnkey projects (Balcat 1985, Erdelik and Rapoport 1985, and Robock and Simmond 1983).

(4) licensing (Robock and Simmond 1983 and Balcat 1985)

These four modes or mechanisms of technology transfer are the subjects of this study's investigation, as shown in the conceptual model discussed earlier.

2. The type of technology transferred:

The transfer of technology can be divided into various types in terms of its investment: **direct investment** and **indirect investment** or as it is often called portfolio investment (Kojima 1973 and Yoshihara 1978), **package:** packaged and unpackaged technology transfer (Johnson 1972), **proprietary level classifications:** general technology, system-specific technology and firm-specific technology (Mansfield 1975, pp.372-73), **industry** (Ito 1986 and Chantramonklasri as quoted by the United Nations 1984), and **embodiment** (Kedia and Bhagat 1988, Tsurumi 1976 and Hall and Johnson 1970).

The classification of the technology transferred varies. However, it is basically grouped in terms of its embodiment, that is, (1) the embodied technology and (2) the disembodied technology as suggested by Tsurumi (1976 and 1984) and especially by Hall and Johnson (1970) and Kedia and Bhagat (1988).

Disembodied technology transfer is carried out through indirect foreign investment in which there is no direct management involvement from the investor. Indirect foreign investment is also called portfolio investment (Kojima 1986) and represents the purchasing of equity by foreign companies, and subscriptions to newly issued foreign public and corporate bonds. Principal forms of indirect investment are the issue of public and corporate

bonds, the selling and buying of bonds and stocks already issued, and medium-term loans (with a maturity of one to five years), as well as long-term loans by financial institutions. Investors consider indirect investment as a profitable means of managing their assets. Embodied technology is carried out partially through direct investment, since direct investment involves (a) obtaining stocks of an already existing foreign firm with the objective of participating in the management of the said firm or purchasing (taking over) an existing firm, (b) establishing a wholly owned subsidiary (i.e. 100 percent control) or a joint venture (partially owned by the foreign country (the Japanese refer to them as **local corporations**), or (c) acquiring physical business assets with the objective of carrying out business activities, namely, establishing a new branch, a business office or factory, purchasing an existing one, or expanding an existing office or factory (Kojima 1986).

Kedia and Bhagat (1988) divided the embodied technology into three types: (1) product embodied technology, (2) process-embodied technology, and (3) person embodied technology. Hall and Johnson (1970) referred to the technology transferred as 'information' and they divided the technology transferred into three types: (1) general technologies, (2) system-specific technologies, and (3) firm-specific technologies. These three typologies of technology transfer can basically be classified into two forms. One form embraces physical items such as drawings, tooling, machinery, process information, specifications, and patents. The other form is personal contact. Put

simply, technology transfer is a transfer of skill or knowledge and "knowledge is always embodied in something or somebody, the form being important for determining the transfer process and its costs. The process is simpler if knowledge is embodied in purely physical items" (Hall and Johnson 1970, pp.306-307).

Others such as Alam (1978, pp.14-15) and Chudson (1971) classified three types of the technology transferred in terms of its sophistication and the complexity involved: (a) franchising technology, (b) conventional technology, and (c) high or sophisticated technology. However, according to Alam, most of the technology transfer agreements include the technology described by Chudson as conventional technology and high technology. The Alam and Chudson's classification is used in this study as it is maintained that this classification is closer to, and can be applied to, Japanese technology transfer (see Lee's study 1985).

3. The type of skills transferred:

The above review of literature points out that the essence of technology transfer is a transfer of skills. The type of skills transferred depends largely upon the type of technology transferred and the mechanism used for the transfer. It was argued earlier that the success of skills transfer can be regarded as the measure of success of technology transfer. Various researchers state that different types of technology transfer require different sets of skills. Kaplinsky's research (1982) on microelectronic industry-related technology transfer refers

to the operative skills and management skills needed in the transfer process. Lall and Mohammad's research (1983) on multinationals operating in India refer to managerial, organizational, production and technical skills. Svennilson (1964) refers to management and marketing skills. Rajan (1987) and Fujimori (1986) refer to technical and operative skills, such as clerical skill. While Gershenberg (1983) refers to management or managerial skills.

In the case of Japanese technology transfer, managerial skills have been the most important characteristic of Japanese technology transfer (Komoda 1986, p.412) and it has been inseparable from the Japanese-style of management (Komoda 1986, Kojima 1978 and Ford 1986a and 1985). Komoda, for example, observes that 'Japanese technology transfer is closely wedded to particular Japanese managerial skills and know-how that can be transferred through human contact' (Komoda 1986, p.412). The importance of managerial skills derives from the technology transfer process and has been emphasized by Brook and Holly who suggest that "the development of managerial capability is a vital factor in successful technology transfer" (Brook and Holly 1981, p.300). The essence of managerial capability that needs to be developed consists of two skills, conceptual skills and human skills (Kono 1984/85). Osmond (1971/72, pp.12-13) discusses managerial skills in terms of the skills needed by top management. Those skills include skills of balancing, integrating, setting priorities, setting and developing standards, conceptualizing, leading, matching to one's job, and delegating. Other skills include planning, coordinating


and communicating as is commonly held in management principles. Katz (1974) outlines the managerial skills required by all managers as being at least three type of skills: they are technical skills, human skills, and conceptual skills.

4. The variables that moderate the transfer process

The success of transferring skills, as embodied in the technology transferred, depend on the existence and absence of various variables that may moderate the transfer process. Lasserre (1982) develops a model which lists four main elements : general conditions; transferee's characteristics; relationships; and transferor's characteristics. He considered that these contribute to the success of technology transfer, as shown in FIGURE 8. General conditions include the type of product/technology, market conditions, investment climate, and government policies. Transferee's characteristics include strategy, competitive position, and country. The relationship elements include type of agreement, negotiation, organization / coordination, communications, selection of partner/trust, behavior, and training. The transferor's characteristics cover strategy, competitive position, size, experience, and country of origin. Koike's study (1983) on the skill formation by the Japanese firms include 'size of the firm', in terms of the number of employees, as an important variable in his study. Kono (1984/85) refers to multinational management level, equity participation (also Alam 1978, p.160), sophistication of the technology transfer (also Alam 1978), and nature of the technology

FIGURE 8
FACTORS CONTRIBUTING TO THE SUCCESS OF TECHNOLOGY TRANSFER

Please see print copy for image



Source: P. Lasserre (1982) "Training: Key to Texhnological Transfer" Figure 1, p.51.

transferred (also Alam 1978). An ILO study (1973) indicates some moderating variables in its research such as organization size, strategy of the parent company (such as centralization), level of technology employed, availability of local talent, and legislation/regulation. Ozawa (1979), Quinn (1969) and Gee (1979), and Kaynak (1985) refer to ownership. Ozawa suggests that technology transfer to a developing country of either fully-owned subsidiaries of foreign concerns or a joint venture alternative, states that the latter provides more opportunities for transfer than the former. Gee (1979, p.131) divides into four categories the ownership variable: (1) fully-owned subsidiaries of foreign companies, (2) companies which have a minority interest by foreign companies, (3) companies which have no equity participation by foreign companies, and (4) public sector companies which have imported technology involving no equity or any other financial participation by the technology source.

Other studies refer to regulations or legislation of the host country (Kaynak 1985, Frank 1980, UNCTAD 1984, Samli and Yavas 1985, and Quinn 1969) as a variable that can moderate the transfer process. Teece (1981, p.57) refers to experience with transfer, and experience with the technology, as elements that determine the success of transfer. Samli and Walter (1985) refer to variables relating to the existing power structure and communications. Paliwoda and Liebrems (1985) refer to communications, poor infrastructure, poor management and transport difficulties. Quinn (1976) mentions multiple leadership problems, communication difficulties, political

interference and any lack of common goals among the participating parties. Tsurumi (1979, p.44) refers to differences in corporate culture and management organization as factors that would affect the efficiency of technology transfer. Kedia and Bhagat (1988) refer to culture as a moderating factor for technology transfer to developing countries and consider strategic orientation to have been crucial in the case of technology transfer to developed countries. Connors et al. (1985) refer to culture and level of technology, government and legal-political environment. Kosenko and Samli (1985) refer to culture, language, education, industrialization, availability of natural resources, political structure, state of urbanization, and extensiveness of the infrastructure. Sirgy (1985) adds other variables of government factors (including technology and developmental plans, barrier or incentive systems, communication structure, and financial access), conditional factors (including factors things such as existing and forecasted trade and economic conditions, political support, opinion leadership, and relative strength of existing indigenous technology), and adopter characteristics (including factors such as education, innovativeness, sociocultural norms, professionalism, and conceptual skills) as determinants influencing the diffusion or transfer of technology. Host country government of local content policy, or what Lesserre (1982) calls **local content push** policy, requires the technology transferor to utilize the existing local resources. This type of policy may expedite the technology transfer process, or it may in fact become an of important source of

the technology transfer problems. Another important point that needs to be included is the willingness and ability to transfer technical knowledge and skills. As suggested by Baranson "successful transplants of technology depend as much upon willingness and ability to transfer technical knowledge and skills as upon the absorptive capabilities of recipients" (Baranson 1970, p435). And "in order to ensure the successful transfer of technology, local personnel must be given the opportunity to acquire knowledge and skills" (Hieneman et al. 1985, p.151).

This literature review suggests that there are many factors, as suggested by various scholars, that moderate the skill transfer process. They include the type of product/technology (Lasserre 1982 and Conners et al. 1985), market conditions, investment climate (Lasserre 1982), government policies (Lasserre 1982 and Conners et al. 1985), experience (Teece 1981 and Lasserre 1982), strategy (Lasserre 1982 and Kedia and Bhagat 1988), competitive position, size (Koike 1983 and Lasserre 1982), country of origin, type of agreement, negotiation (Lasserre 1982), communications (Sirgy 1985, Lasserre 1982, Paliwoda and Liebrems 1985, and Samli and Walter 1985), selection of partner/trust, organization (Lasserre 1982 and Tsurumi 1979), training, behavior (Lasserre 1982), and ownership (Ozawa 1979, Quinn 1969, Gee 1979, and Kaynak 1985). Regulations or legislation (Kaynak 1985, Frank 1980, UNCTAD 1984, and Quinn 1969), corporate culture (Tsurumi 1979), culture (Kedia and Bhagat 1988, Hill and Still 1980, Kosenko and Samli 1985, and Conners et al. 1985), language, education (Kosenko and Samli 1985 and Sirgy 1985),

availability of resources, extensiveness of infrastructure, state of urbanization (Kosenko and Samli (1985), local content requirement (Lasserre 1982 and Hieneman, et al. 1985). In this study, the moderating factors to be considered are:

- (1) organization size (Lasserre 1982, Heineman 1985, Koike 1983).
- (2) level of local's education (Kosenko and Samli 1985, and Sirgy 1985).
- (3) the host government regulations (Kaynak 1985, Frank 1988, UNCTAD 1984, Yavas 1985, Widjaja 1980, and Quinn 1969).
- (4) Type of industry (Lee 1984 and Ito 1985), and
- (5) Sophistication of technology (Alam 1978 and Chudson 1971).

The reasons for excluding other variables in this study are (1) the researcher believes that the five factors included in this study are most important factors in moderating skill transfer process in the case of Japanese technology transfer to Indonesia. Therefore, the five factors selected for this study are most relevant factors for the current study; (2) the five moderating factors are believed to be the major factors and they represent most of other factors; (3) the five factors selected for this study represent relatively early studies (Quinn 1969, Chudson 1971, and Alam 1978) and and recent studies (Frank 1988, Sirgy 1985, and Kosenko and Samli 1985); (4) there has been no study undertaken so far to include all moderating factors in one single study, meanwhile, any type of moderating factor can be invented or created by anyone

according to one's research interest and objective; and (5) to include all moderating factors in one single study will require not only longer time for research and analysis, but also it will demand a great deal of financial support while this current study has been constrained by time limitation and financial shortage. With this limitation and shortage, it is impossible to include all factors in this study. Let the rest of the moderating factors to be considered for further studies.

Having discussed various components (the modes of TT, the type of technology transfer, the type of skills transferred, and the variables that moderate the transfer process) of the proposed General Model, the next task is to conceptualise those components. The components will be used as the main basis of this study to create a new and more realistic model of technology transfer and skill formation.

2.16.2 The Conceptual Model:

Analyses of the interaction between the technology transferred and the socio-economics of developing countries generally adopt a macroeconomics (including employment, and balance of payment) perspective on the need for technological adaptation to the local environment (see Frances 1974 and Marsden 1970). However, the interaction between the socio-economics of developing country and the technology transferred is regarded here as neither a one-way nor a one-dimensional process. It is widely believed that the technology transferred in some way affects either directly or indirectly how significantly the skill formation of the recipient of the technology transferred is

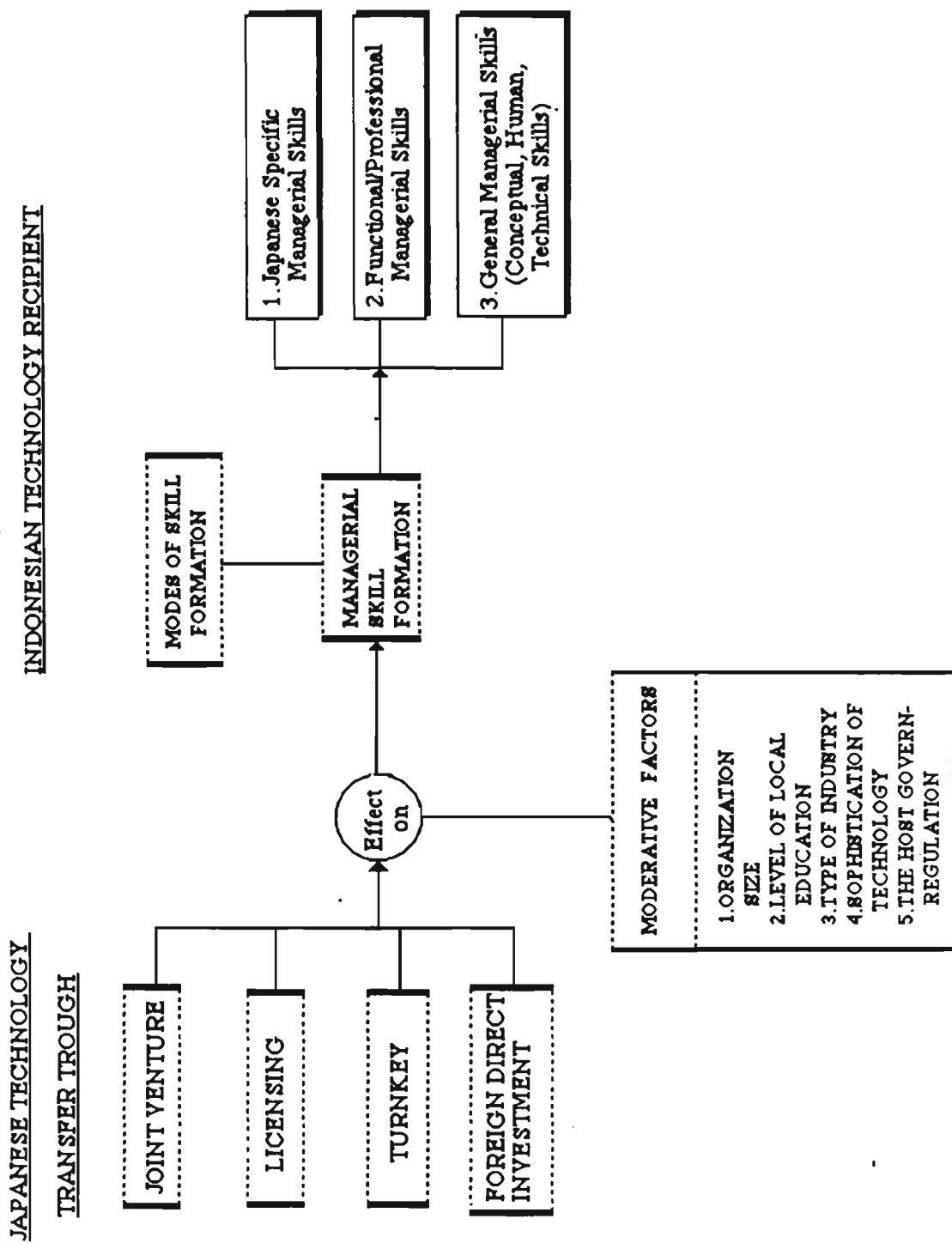
affected by contributing to the industrialization and modernization of the technology recipient's business and economy. The above review of the literature cited suggests that no known systematic and empirical analysis and study of the skill development / formation effects of technology transfer have been reported (Koike 1983, Krbavac and Stretton 1988, Siggel 1986, and Jarvis and Sinclair 1984).

The components of a conceptual model for depicting the effect of technology transfer on the skill formation of the technology recipient country is shown in FIGURE 9. The conceptual model was formulated to illustrate the technology and skill transfer process resulting from technology transfer. The conceptual model draws on various models already developed by researchers such as Kedia and Bhagat (1988), Kagono et al. (1985), Samli (1985), Kosenko and Samli (1985), and Samli and Walter (1985).

Figure 9 depicts the conceptual framework of what could be called an **integrative technology transfer contingency theory**. The model shows various components that should be taken into account when there is a formation of skills through technology transfer. The purpose of developing this model is not to 'prove' or 'disprove' the model, but rather to provide a theoretically sound framework for approaching in a holistic way the study of the effect of technology transfer on the socio-economic and technological variables, especially the skill formation variable, of the technology recipient country. It is suggested here that the skill transfer process must be seen within the overall framework of activities of technology transfer.

FIGURE 9

CONCEPTUAL MODEL OF TECHNOLOGY TRANSFER



The model suggests that the effectiveness of technology transfer is moderated by variations in the host country's environment and the characteristics and mechanisms used in transferring the technology. To understand fully the working mechanism of the model of this study we first have to identified various variables included in the model.

FIRST COMPONENTS OF THE MODEL:

The first component of the model is the technology transfer variables, i.e. variables which describe the mechanisms and characteristics of the transfer of technology. In this study, as suggested by the model, technology is assumed to be transferred through four mechanisms: joint venture; licensing; turnkey projects; and direct foreign investment. The type of technology transferred is not included in the first components as it is considered as a Second Component variable, that is, as a moderating variable.

SECOND COMPONENTS OF THE MODEL:

The variables included in the second major component of this model framework are seen as moderating factors. The factors considered in this study are : organization size; level of the local's education; type of industry; sophistication of technology; and host country government regulations. Although these factors might be considered among the internal characteristics descriptive of the organization, it is considered here that these factors are more explanatory in nature and can be differentiated from other internal characteristics because of their nature as **mediating** variables. For instance, an organization's size and the level of local education clearly reflect the condition of the organization, and at the same time the

organisation size and education level of employees suggest the strength and potential of the organisation. The other three, the type of industry, sophistication of technology, and host country's regulations represent the external environment that serves to provide opportunities for, and constraints on, the organisation.

THIRD COMPONENT OF THE MODEL:

The third component of the model describes the points toward the main subject of the study. The subject being studied is the effect of technology transfer on managerial skill formation of host country employees, in this case in Indonesia. In this study, managerial skills are divided into three skills:

- (1) Japanese specific managerial skills,
- (2) Professional or functional managerial skills, and
- (3) General managerial skills which consist of conceptual skills, human skills, and technical skills.

These three different kinds of managerial skills illustrate the kind of skills most needed, and are expected to be acquired by management or a managerial staff working in a typical Japanese company which practices Japanese system of management. The arrows linking this component to other variables indicate that transfer effectiveness is determined by the pattern of the two variables or factors mentioned above.

An integrative technology transfer contingency theory put forward here suggests that a difference in organisational environment would bring about different effect on the variables concerned.

2.17 Limitations of the Dominant Perspective:

A short review of previous studies relating to technology transfer in general, and to Japanese technology transfer in particular, as well as to international business, foreign investment, skill, skill formation, and training generally has been sufficient to provide us with a broad outline of what can be called the **dominant perspective** (Kagono et al. 1985). Some of the limitations can now be identified.

2.17.1 Emphasis on Socio-Cultural Uniqueness:

The first limitation is in terms of socio-cultural uniqueness. Most studies conducted on Japanese technology transfer and business management practices place greater emphasize on the socio-cultural uniqueness of the the Japanese rather than on other possibly relevant factors such as economic and technological factors especially when dealing with international technology transfer. Although it is recognized that cultural adaptability in terms of similarity and difference is crucially important to moderate the effect of international technology transfer, it is not the one single determinant affecting successful technology transfer. This does not mean that the cultural variable should be excluded in the analysis of successful technology transfer. In fact, culture, or a cultural barrier, is "the most difficult obstacle to cope" (Heller 1985, p.74). This is because the cultural barrier is very much to do " with the fact that different norms and values may prevail on both sides of the transfer process"(Heller 1985,p.75).

The existence of a socio-cultural barrier is due largely to two factors. One is a different perception of each other by either the users or suppliers of technology, and the other is a failure to understand each other's cultural norms, values and social interactions or systems within the community. These two factors contribute to the significance of any socio-cultural barrier in the transfer of technology.

According to Sirgy et al. (1985), in order to achieve successful technology transfer, it is important to understand people's behavior patterns as individuals and as members of a culture. Without such an understanding it will be very difficult, if not impossible, to determine the specifics of the transfer process which will result in the new technology being adopted by the country and its people. This statement suggests a linear relationship between people and culture in technology transfer. It has been argued that people are most effective mechanisms for technology transfer, and the people in some respect cannot be separated from their particular respective social systems.

Parsons and Shils (1962) introduced a general social systems theory that used the concept of personality to explain the working dynamics of social systems. Stemming from social system dynamics, systems of patterns are created and manifested by individual members of social systems. The systems of symbolic pattern are known to constitute the concept of culture (Sirgy et al. 1985). Culture in this context is seen by Sirgy (1985, pp.202-204) as a system of value orientations that are determined by

personalities and transmitted among social systems by socialization and among personalities by learning. Parsons and Shils (1962) argued that the value orientations of culture can be analyzed along five key dimensions that are derived from personality/social systems dynamics. These are (1) affectivity versus affective neutrality, (2) universalism versus particularism, (3) self-orientation versus collectivity, (4) ascription versus achievement, and (5) diffusion versus specificity.

Technology transfer involves production innovations and diffusion of these innovations. In the technology transfer model the diffusion of technological innovations is accommodated and moderated by values of cultural orientation. It is in this framework of rationality that the value of cultural orientation is assumed to be strongly related to the concept of successful technology transfer. It is often argued that culture strongly influences management practices, and studies of various instances of Japanese technology transfer have succeeded in helping us to understand that many basic characteristics of Japanese technology transfer and business operations by multinational corporations are attributable to unique socio-cultural factors. However, according to Kagono et al. (1985), the socio-cultural perspective might be challenged on two points. First, on its inherent theoretical limitation since the socio-cultural perspective seeks to explain the emergence and maintenance of unique social systems by reducing causal factors to certain cultural attributes of a country. From a socio-cultural perspective, the culture base provides the independent variables while

management systems and practices are viewed as dependent variables. The problem derives from the tendency of those independent variables to be always changing. Like other cultures, the Japanese culture comprises sub-cultures and each sub-culture is continuously evolving in directions different from that of others. It is, therefore, very difficult to accept that there would be certain values, norms and beliefs which by themselves in definitely constrain the management practices of a society. The idea that the causal link between culture and management practices is necessarily unidirectional is questionable. The rate of cultural change and the degree of cultural diversity facing organizations are more pertinent to normative management frameworks than an analysis based on the assumption of a stable cultural base (Kagono et al. 1985). The second difficulty with the socio-cultural perspective relates to the vagueness of the implications which can be drawn from it. At least thus far, the socio-cultural perspective has failed to give definite answers to important practical questions, such as why are the Japanese successful in some industries and not in others, and what are the strengths and weakness of the management practices observed among Japanese companies. (Kagono et al. 1985). Some previous studies have already in part addressed these issues. Hayes (1981) and Wheelright (1981) focusing on operational management in Japanese companies, argue that the production process is a key factor in the success of some Japanese companies. Abernathy et al. (1981) comparing the production policies of U.S. and Japanese automobile companies, point out the centrality of production strategy

to the success Japanese automobile firms. Kohno (1976) and Tsuchaya (1978) discuss the impact of decision-making processes and systems on the strategic behavior of Japanese organizations. Imai and Itami (1981) posit that loosely-coupled inter-organisation networks contribute to the adaptability of Japanese companies. Those studies, according to Kagono et al. (1985) are changing the dominant focus of observation from a socio-cultural to a less culturally-specific, managerial one (Kagono et al. 1981). A major consequences has been to shift the focus from necessarily culturally-bound explanations for existing differences to a focus which is inclusive of cultural factors.

2.17.2 Lack of Empirical Data:

A second limitation relates to the nature of research that has thus far conducted. The subjects that have been studied and that have attracted a great deal of attention of researchers have mainly focused on general macroeconomic aspects of international technology transfer and foreign investment.

However, it appears that another important aspect (or spill over effect) of the technology transfer, that of skill formation, has not attracted the attention of researchers. This is understandable because the subject of skill formation has emerged only very recently. According to Koike "probably the basic reason for their neglect of this question is that skill has been formed in such an automatic fashion that management can operate smoothly without being concerned about it" (Koike 1983, p.4). Koike

further argues that "...research about skill is, both theoretically and empirically, quite difficult" (Koike 1983, p.4).

Recent research conducted by various scholars such as Krbavac and Stretton (1988), Siggel (1986) and Jervis and Sinclair (1974) suggest that there has been very little research undertaken, if any, in this field. A detailed analysis by Kagono et al. (1985) point out that the bulk of studies on Japanese management practices originating from both in the U.S. and Japan have a lack of empirical data satisfying accepted standards of scientific methodology. While not necessarily "scientific", many contributions are based more upon casual observation and incomplete data than upon sound empirical evidence. The absence of careful methodology and empirical data have contributed to the creation of stereotypical views and a lack of theoretical coherence. Kahono et al. continue to argue that casual observation of a few cases will not be sufficient for an accurate assessment of Japanese management as there is diversity in the management practices of Japan.

2.17.3 Lack of Orientation Toward a More General Theory of Management.

The third limitation of the studies conducted up to date, according to Kagono et al. (1985), is the lack of an orientation toward a more general theory of management. The study of Japanese firms represents an important opportunity to test the generalizability of existing theory and develop them further. The principal orientation of the dominant studies is to find and explain uniqueness, and thus

preludes this possibility. The study of the effects of Japanese technology transfer is expected to shed important light on aspects of management and, indeed, to contribute to existing theories of management and, thereby, assist in the formation of a general theory.

2.18 Operationalisation of Variables

There are variables that need to be operationalised as it contains in the research model used in this study.

2.18.1 Technology Transfer and Mechanism of Investment:

Technology transfer is defined "as the overall process through which a local owner organization gains knowledge, skills and confidence as indicated by its ability to manage facilities (such as an industrial complex or manufacturing plant) on an on-going basis. Technology transfer implies an integration of what is commonly referred to as training with the actual conduct of the various project activities" (Spielman 1981, p.79).

One of the most important and commonly used mechanisms in transferring the technology is through foreign investment (Kojima 1973 and 1978, Ozawa 1981, Tsurumi 1976, Teece 1981a, and Yoshihara, 1978). The literature review in Chapter 2 suggests that there are various modes or mechanisms used by multinational corporations, particularly Japanese multinational corporations, to transfer technology as part of the multinational corporation's foreign investment expansion. Most research (Killing, 1980, Yoshino 1975, Shudan 1974, Komada 1986, Ozawa 1981, Erdelik and Rappoport 1985, Robock

and Simmonds 1981, Balcat 1985, Tsurumi 1976, and Kojima 1978) undertaken on Japanese technology transfer, particularly to developing countries, reveals that joint ventures, licensing, turnkey and foreign direct investment are the four most commonly used transfer mechanisms. The question posed by this study is how does the technology transferred through each type of these four transfer mechanism affect the managerial skill formation of the host country's employees. These four transfer mechanisms will be the subject of this research investigation and operationalised as follows:

2.18.1.1 Joint venture

Like licensing, the joint venture is one of the forms of technology transfer, and is defined by Tomlinson, as quoted by Balasubramanyam, as "one where there is the commitment, for more than a short duration, of funds, facilities, and services by two or more legally separate interests, to an enterprise for their mutual benefits" (Balasubramanyam 1973, p.21). This definition suggests that this form of licensing organization concerns the commitment of resources by both entities for more than a short duration. Unlike the case of a technical collaboration agreement, the foreign company's interests are closely intertwined with those of the local company. The mutual commitment of resources is a means toward a common end, whereas under a technical collaboration agreement the objectives of the two companies may not necessarily coincide. The local company may be interested in growth and profitability. Imported knowledge may be one crucial factor in attaining this objective. In fact the objectives of the

host country government in embarking upon joint venture program of technology transfer, according to Salacus are:

- 1.A joint venture with local participation will more likely succeed in becoming integrated into the host country economy than will a wholly owned foreign projects;
- 2.Joint ventures facilitate the creation of local management skills and transfer of technology;
- 3.Joint ventures reduce the risk of real or apparent foreign domination of the economy or important economic sectors;
- 4.Joint ventures facilitate access by the local interests to the foreign partner's international marketing network;
- 5.Joint ventures, as opposed to wholly-owned subsidiaries, will be more responsive to government policies and conduct their operations in the best interests of the country as a whole;
- 6.A joint venture places the host government and/or the local party in a position to take over the entire project through nationalization or negotiated purchase; consequently, its use is viewed as contributing to the formation of nationally owned industries and economic activities (Salacus 1985, p.110).

The foreign company for its part may be interested only in the direct benefits, in the form of control and defence against a potential competitor, that such agreements may confer. Though foreign companies often state that altruistic motives are one of the reasons for their entering into licensing agreements, such motives may not be all that pervasive and important.

There is no hard and fast rule specifying the share of the two partners in the equity structure of the venture. It may be 50-50, or it may be skewed to some extent in favor of one of the partners. The important point to note is that neither of the partners owns capital to an extent that gives it exclusive control over operations. It is often suggested that the advantages of a joint venture revolve largely around the desire and need of the

multinational enterprise to retain control over the decisions of foreign subsidiaries. This control issue according to Robock and Simmonds (1983) can be the source of many conflicts between the international company and its local partners.

In many developing countries, the tendency is to gradually replace turnkey contracts with technology license agreements for manufacturing technology and know-how. Included in these agreements are basic engineering services that cannot be performed by local agencies and with specific contracts for supply of machinery and its installation. This procedure according to Kaynak (1985) is cheaper and encourages the development of indigenous technical services,

In its operation (Salacuse 1985), the joint venture can be divided into two categories: **an equity joint venture** which entails the creation of a separate joint venture entity to which each partner contributes capital and in which each owns a portion of the venture, while participating in its control and sharing in its profits; and **a contractual joint venture** which involves no such separate entity. In both categories, both licensee and licensor involved in a joint venture are obliged to provide certain services or operations on a long term basis and/or contribute to the use of assets.

2.18.1.2 Licensing

Licensing is one of the forms used to transfer technology and therefore it is often called technology licensing. Technology licensing is basically "the purchase and sale, by contract, of product or process technology,

designs and marketing expertise" (Lowe and Crawford 1984, p.3). In its practical operation, licensing covers the broad spectrum of permissions that are granted for the use of patents, technology, and trademarks, regardless of whether an equity relationship exists between the licensee and licensor (Rhymes 1971). Of various systems for the transmission of technology, licensing, as part of the overall business strategy of both large and small businesses (Lowe 1984, p.61), according to Kaynak (1985), is the most versatile as it offers flexibility in the choice of, and opportunity for, the source and the receiving institutions to accommodate their individual needs through negotiation.

Licensing is often considered an inferior international business strategy of transferring technology (Robock and Simmonds 1983), but the fact is that the licensing alternative is uniquely significant for international technology transfers and it appears that licensing is gaining in importance. A study by Contractor concludes that "Licensing in many selected situations is not only a very profitable, but superior in a net risk-adjusted comparison with alternatives" (Contractor 1981, p.74). Licensing has special advantages for small companies that lack capital, management, and the necessary experience for expanding internationally through direct investments (Lang 1978, pp.12-13). Many large companies also make extensive use of licensing, both with their foreign affiliates and with unaffiliated parties.

2.18.1.3 Turnkey

Companies often enter into turnkey arrangements in

the early stages of their country's industrialization, whereby one party is responsible for setting up a plant and putting it into operation. A turnkey contractor may be either the owner of the technology or the main supplier of machinery or even a consulting engineering organization. If the project is large like a steel plant or a major petrochemical plant, several foreign organisations combine to take up turnkey projects (Kayak 1985).

In a turnkey project, the seller plans, constructs, and places in operation a foreign facility that is then transferred to a local owner. The seller receives a fee for its services but retains no ownership interest (Robock and Simmonds 1983).

2.18.1.4 Foreign direct investment

Foreign direct investment is defined "as investment that give the investor effective control and are accompanied by managerial participation" (Robock and Simmonds 1983, p.6). Foreign direct investment has become a most important medium for transferring technology to developing countries as "the flow of technology to developing countries has been an integral part of direct foreign investment" (Kaynak 1985, p.161).

Foreign direct investment should be distinguished from portfolio investment. Portfolio investment represents the purchasing of equity in foreign companies, subscriptions to newly issued public and corporate bonds, and so on (Kojima 1986). It is undertaken for the sake of obtaining investment income or capital gains rather than entrepreneurial income. The dividing line between direct and portfolio investments is often difficult to determine

(Robock and Simmonds 1983).

Foreign investment in developing countries has generally been in the form of wholly-owned subsidiary corporations. Kojima (1986) states that foreign direct investment involves the following activities:

1. Obtaining stocks of an already existing foreign firm with the objective of participating in the management of the said firm or purchasing (i.e. takeover) of an existing firm,
2. Establishing a wholly owned subsidiary (i.e. with 100 percent control) or a joint venture (i.e. partially owned in foreign country which the Japanese refer to as a local corporation),
3. Acquiring physical business assets with the objective of carrying out business activities, namely, establishing a new, or expanding an existing, office or factory.

The Japanese experience of transferring technology to the developing countries of Southeast Asia has been through foreign direct investment and joint ventures. The emphasis on direct investment is in contrast to the licensing agreements Japan employs in transferring technology to advanced countries outside Asia (Hieneman et al. 1985). The Japanese preference for foreign direct investment is closely connected to Japanese firm's reliance on 'transfer through people'. This reliance has been a product of the Japanese approach of 'learning by doing' for technology transfer (Hieneman, et al. 1985).

2.18.2 The Moderating Factors

In this study the moderating factors are (1) organisation size, (2) level of local employees' education,

(3) the host government's regulation, (4) type of industry, and (5) sophistication of the technology transfer.

2.18.2.1 Organization size

The size of an organization can be measured by its investment, sales, or number of employees. The number of employees is used in this study to measure the size of the subsidiary. The categories of size used are:

1. Small companies with no more than 200 employees.
2. Medium companies with no more than 500 employees.
3. Large company with more than 500 employees

2.18.2.2 Level of the local's education

The level of the local Indonesian employees' education is measured in terms of their formal education/training as obtained at school, university or other types of educational institutions both in Indonesia or overseas. The categories of education level used in this study are:

1. Senior high school (3 years study) or High School Certificate qualification.
2. Undergraduate qualification (3 or 4 years study after completing senior high school study.
3. Postgraduate qualification (at least 2 years study after gaining undergraduate qualification).

2.18.2.3 The host government's regulation

Multinational corporations are important agents in transferring technology across national boundaries. Those technologies transferred are subject to the host country's rules and regulations to regulate and affect the

importation and utilization of the technology transferred. The rules and regulations of the host country government which affect the technology refers to the government regulations, such as those concerning foreign investments, industrial relations, employment of local and foreign employees, and requirements for foreign companies to use local content (see for examples Kaynak 1985, Frank 1980, UNCTAD 1984, and ILO 1973). Foreign investment in Indonesia is governed by various decrees from 1986 to 1989, administered by the Indonesian Investment Coordinating Board and other institution (Widjaja 1980 and BKPM 1986).

2.18.2.4 Type of industry

It is believed that different types of industry may have differential effects in terms of the technology transferred on the skill formation of local employees. Lee's research (1984) on a comparative study of Japanese and American technology transfer to Korea suggests that different types of industry employ different type of technology, and different type of technology affect differentially different industries. Research conducted by Ito (1985) on 'Technology Transfer from Japanese to Indian Firms' appear to support Lee's study (1984). In his study, Ito (1985) maintains that the effects differ according to the manufacturing industry, whethet textile (including apparel), chemical, machines or automobiles. Inspired by Ito's study, this research adopts the same classification. In this study the type of industry is grouped according to the classification by JETRO - the Japanese Export and Trade Organisation, Tokyo, as follows:

- | | |
|-------------------------------------|---|
| (1) Textile Mill Products, | (2) Rubber and Plastics |
| (3) Chemicals and chemical products | (5) Electronic, machinery, apparatus, appliance, and supplies |
| (4) Non-metallic mineral products | (7) Construction and engineering |
| (6) Transport equipments | |
| (8) Commerce | |

This classification follows the International Standard Industrial Classification (ISIC) codes.

2.18.2.5 Sophistication of technology transferred

The level of sophistication of the technology transferred refers to the nature and characteristics of the technology being used in the subsidiary. Executives were asked to rate the sophistication level of technology used in their respective subsidiary, relative to the technologies utilized by manufacturing or industrial companies in the host country. The sophistication level of technology used in this study is adopted from the classification employed by Chudson (1971) and Alam (1978). In this study the technology transferred is classified into the following categories: (1) sophisticated or high technology, (2) conventional technology, and (3) low technology.

To identify the level of technology, the interviewee was asked to identify whether (1) their technology was sophisticated or up to date, or (2) fairly well established and widespread in advanced countries such as Europe and America (conventional technology), or (3) old and verging on obsolete in advanced countries (low level technology).

The rationale for using the executives' own ratings for this variable is based upon the researcher's contention that different firms (as does the country) interpret the degree of sophistication of technology differently, based on the company's (or the country's) own level of technological and industrial development. As this study is examining the effects of technology transfer from the Indonesian end, that is, from the Indonesian point of view, the Indonesian executives' perception and view of the level of sophistication of the technology transferred to Indonesia might be different from perception and view of executives from other countries (or companies) as their level of technological and industrial as well as educational development is different between countries (or companies). For example, the Japanese technology transferred to Indonesia is considered by Indonesian executives as being very sophisticated or high technology, and it might not be so when the same technology is transferred to America or Europe.

2.18.3 Skill Formation and Managerial Skills

Skill is defined as the ability of a business to perform various functional area task such as manufacturing, R&D, marketing, distribution, or administration, etc. (Chrisman, 1987, pp. 12-13). Managerial or management skill is defined here as knowledge or skill about the coordination of all resources through the processes of the management function (such as planning, organizing, leading, directing, executing and controlling) in order to attain the stated objectives (see Guglielmino 1979, pp. 12-15;

Katz 1974 and 1971; and Hellriegel and Slocum 1978). Skill formation is defined as the skilling and development of human potentials which embrace the idea of education, learning, training (on-the-job and off-the-job), experience and personal development (Ford, 1986B, p. 32). Skill formation is essentially done through training and job rotation. Training is defined as "a systematic process aimed at skills development or improvement intended to meet specific task and organizational need". (Allen and McGowen, 1986, p. 31), and job rotation is regarded as a movement of trainees (workers) from job to job for a variety of job assignments.

In this research the type of skill studied is managerial skill. It is divided into three different types, namely, (1) Japanese specific managerial skills, professional or functional managerial skills, and (3) general managerial skills. The general managerial skills are divided into three main skills, namely, conceptual skill, technical skill, and human skill. Details of these skills will be discussed in Chapters 3.9; 3.10; and 3.11. It can be described briefly that

(1) Japanese specific managerial skills:

Japanese specific managerial skills are associated with the application of various elements of the Japanese system of management. The application of the system has brought with it the skills, knowledge and expertise that are required to utilise the system. As a consequence of this, managerial staff and employee of the company have to understand the concept of the system employees, work according to that system, and

acquire the necessary skills to make the system used in the subsidiary company operate effectively and productively.

(2) Professional or functional managerial skills:

Professional or functional managerial skills are those skills associated and related with the profession of, and various functions given and undertaken, of a manager or director in an institution or a company. Professional or functional managerial skills include the skills which managers or directors could gain during employment with any company. In practical terms, functional skills are those skills that are related to a manager's position and responsibility in a company, such as in marketing, accounting, administration, personnel management, finance, export or import.

(3) General managerial skills.

The general managerial skill as defined above is knowledge or skill about the coordination of all resources through the process of the management function in order to attain the stated objective.

2.18.4 Training Modes:

As discussed in various research reports such as Nau (1976), Kono (1984-84) and Komoda (1986), the people / person-embodied technology transfer means that the technology is transferred through people or human contact. This kind of transfer advocates a strong involvement of people in the transfer process. The core element of this transfer process is training that can be carried out through various training modes such as

1. On-the-job training/in house training
2. Off-the-job training
3. Formal training (degree, diploma and certificate)
4. Short-course, conference, seminar and up grading
5. Counterpart system

A study by Reyes et al. (1987, pp.31-32) on Technology and Skills in the Philippines in a case study of the electrical appliance industry suggests that the modes of training were: 1. On-the -job training conducted by in-house staff, 2. In-house training programmes conducted by externally-hired trainers, 3. Training for selected employees conducted in local training institutions by experienced trainers, 4. Training for selected employees conducted abroad.

According to the Reyes et al. study, all the firms in the samples conducted on-the-job training for their employees. In fact, the study reports, for all the firms, this was the primary mode of training. It was suggested by the Philippines study that the training was generally conducted by personnel at the supervisory level or lower management levels, and consisted of guided hands-on exercises and occasional formal classes.

3. SYNTHESIS OF THE PREVIOUS STUDIES

3.1 Research Focus:

There is wide spread agreement today that the economic growth of, and increase in production in, developing countries depend greatly upon their ability to attract foreign technologies in the form of techniques, know-how and skills which permit the higher levels of productivity of the developed countries.

The traditional vehicle and most popular form of transferring those foreign technologies has been foreign direct investments (FDI), which have been the most important instrument for multinational corporations (MNCs) to expand their international business interest and transfer their technology.

In recent years, MNCs have come under direct criticism in host developing countries regarding the so-called negative impact of foreign direct investment (see Korth 1985, p.280), such as inappropriate transferred technology negatively affecting host developing countries economies. However, at the same time, MNC foreign investment has been praised for the positive impacts of foreign direct investment, especially its contribution to improving the managerial skills or knowledge of the employees of the host countries. Korth (1985) argues that one type of skill brought by MNCs as a result of their foreign investment in a host country is 'managerial expertise' and "this is perhaps the most valuable of the factors of production that foreign investors bring in to the host country. This is especially true of investments in

less-developed countries, but it is also true even in industrialized countries" (Korth 1985, p.280). This latter impact, the positive one, is the focus of this study.

A study by ILO (1976, pp. 25-30) suggested that MNCs may improve skills or knowledge in two ways: by technology transfer, and by training. And ILO further argued that "training by multinational enterprises is inseparable from technology transfer" (ILO 1976, p.27), and hence FDI since technology transfer is performed through FDI.

From an economic point of view, according to Kojima "direct investment should be understood as the transmission of management resources in a package of capital, management ability, and technical expertise to host country. The management resources are organizations that exhibit various capabilities in the process of corporate management, consisting outwardly of the nucleus of managers but encompassing, in a wider sense, managerial knowledge including patents, technical know-how, and marketing techniques, market position in regard to sales, materials procurement, and capital raising, trade marks and good will, and organizations for information gathering and research and development" (Kojima 1986, p.58).

Johnson argues that FDI is essentially "the transmission to host country a 'package' of capital, managerial skill and technical knowledge" (Johnson 1972, p.2). In the case of Japan, Japanese FDI "represent not only a movement of capital but also a transfer of technology" (Yamada 1981, p.23).

These arguments suggest a strong inter-relationship between technology transfer (as it is embodied in direct investment) and skills transfer. This is because, first, "the flow of technology to developing countries has been an integral part of direct investment" (Hieneman, et al.,

1985, p.161). **Second**, MNCs through direct foreign investment have provided industrial inputs such as capital, technical know-how and management skills (Cavusgil 1985, p.215). **Third**, "technology" is referred to as industrial technology which means that technology is the accumulated knowledge and know-how required for either manufacturing a final product or processing intermediate inputs. Accumulated knowledge and know-how includes product designs, production techniques, and related managerial systems. The technology "transfer" means the transmission, revision (adaptation), and implantation (absorption) of such accumulated knowledge and know-how that are actually put to productive use (Erdilek and Rapoport 1985, p.253). **Fourth**, technology transfer means "the overall process through which a local owner organization gains knowledge, skills and confidence as indicated by its ability to manage facilities (such as an industrial complex or manufacturing plant) on an on-going basis" (Spielman 1981, p.79). and **Fifthly**, in the case of Japanese technology transfer, the importance of technology transfer is placed particularly on the "managerial skills aspect" (Kono 1984/85, p.192). This managerial skills aspect of technology transfer and its acquisition by the host country's employees has become one of the important elements of in the study of skill formation. Skill formation or acquisition through the technology transfer process is of course the main focus of this research.

3.2 Research on Skill Formation and Technology Transfer:

Although the subject of international technology transfer has attracted a great deal of attention by

scholars, it appears that the subject of skill formation has not attracted the attention of researchers since it has only emerged very recently and there has been a neglect on the part of research into skill formation.

Recent research conducted by various scholars such as Krbavac and Stretton (1988), Siggel (1986) and Jervis and Sinclair (1974) suggest that there has been very little research undertaken, if any, in this research field. Therefore, there is no well-established theory available that can be used to generate hypotheses relevant to this research question.

Lacking such empirical studies and a theoretical background, it has been difficult to generate and develop a clear understanding of the precise nature of the subject. When there are few theories available to support arguments and concepts established in research, especially research in the field of technology transfer, a researcher often works from hunches about which variables can be considered most important and relevant to the subject being studied, and then the researcher needs to consider how each variable may be related to much factors as different inter-industry and intra-industries.

In an effort to generate and develop a clear understanding of the effect of Japanese technology transfer on the skill formation of Indonesian employees, various theories, concepts, statements and arguments considered relevant to this study were found in the literature on technology transfer, international business management, human resources management and other organizational-related issues.

3.3 Foreign Investment and Technology Transfer

Both Kiyoshi Kojima (1978, p.134) and Yamada (1986, p.23) as cited earlier argued that foreign investment constitutes TT. In other words that TT is embodied in the foreign investment (Ito 1986, p. 309). This is not to suggest however that foreign investment is the only channel of TT, but that foreign investment is the most common method used by MNCs to conduct their international business activities. Therefore, it is the most important vehicle of TT. The way in which TT is carried out through foreign investment, according to Caves (1982, pp. 255-62), is by setting up a wholly owned subsidiary or joint venture with the private or public sector of the host countries. Licensing of technology (patented & not) to a wholly-owned subsidiary or an independent party is cited by Caves as another medium of TT. This kind of TT often falls within the category of "commercial transactions" of TT (see OECD, 1981). Non-commercial transactions include transfer under bilateral and multilateral cooperations agreements between the DN and DC governments. The agreement generally relates to all kinds of infrastructure projects such as urban management, scientific, research services, government administration services and educational projects. Ito (1986, p. 309) identified international business activities of consultants, export and import of plant and machinery, technical licensing and other arrangements, and TT through DFIs, as types of commercial transactions. Ito's classification of direct industrial technology is in contrast with Chantramonklasri's classification of indirect industrial technology (United Nations 1984, p. 6).

Chantramonklasri elaborates by distinguishing two aspects of indirect industrial technology. They are, "(i) imports that are associated with major new investment project or substantial project and (ii) imports which may be acquired after investment or expansion in order to modify the products, process, materials or organizational aspect of existing productions systems". (United Nations 1984, p. 6).

Chantramonklasri's concept of "direct" industrial technology is similar to the one suggested by Ito. Chantramonklasri points out that direct industrial technology is technology which has "more or less immediate use in production activity- e.g. imports of capital goods (capital-embodied technology), technical services and production know-how. This second category, much of which consists of commercial transfer from TNCs, is what is normally referred to in policies relating to technology transfer" (United Nations 1984, p. 6). This concept implies that the classification of foreign investment into commercial and non-commercial transaction is also applied to TT. This is especially so from the stand point of Ito's arguments. Ito argues that "commercial transactions of TT involves payment of direct and indirect price for technology and those generates more complicated issues in the international arena than the non-commercial transfer" (Ito 1984, p.309). Ito further notes that "the commercial transfer of technology commences when a technology collaboration agreement is concluded between the company supplying the technology and the recipient company, and ends when the collaboration expires" (Ito 1986, p. 310).

All this illustrates that most technologies

transferred into the host country are embodied in foreign investment. This illustration then supports the proposition that there is a strong relationship between the TT and foreign investment. This is clearly indicated when one examines role of foreign investment in transferring technologies from DNS to DCs such as the cases discussed above. Furthermore, in their earlier studies, both Kojima (1975) and Johnson (1972) support the proposition. Kojima argues that

"the main role of foreign direct investment is to transplant superior production technology through training of labour, management and marketing, from the industrial country to lesser developed countries, or, in brief it is the transfer of superior production functions which replace inferior ones in the host country. The direct foreign investment gradually has an effect over that specific industry in the host country through training of labourers engineers and makes the establishment of competitive firms by local capital possible, and ultimately improves the production functions of that specific industry in general. This a role of direct foreign investment as a tutor" (Kojima 1975, pp.6-7).

And Johnson points out that

"the essence of direct foreign investment is the the transmission to host country of a 'package' of capital, managerial skill and technical knowledge" (Johnson 1972, p.2)

The arguments put forward by Kojima and Johnson are widely shared by other writers such as Sauvant and Lavipour (1975, p. 3), Muller (1973), Singer and Ansari (1982, pp. 195-214), and Pena (1975, pp. 62-67).

3.4 Japanese Foreign Investment and Its Characteristics

Let us first make clear that there are two types of foreign investment. There is direct foreign investment (DFI) and indirect foreign investment (IFI). Kojima's thesis on Japanese style of Direct Foreign Investment point

out that IFI is also known as portfolio investment and it "represents the purchasing of equities of foreign companies, subscriptions to newly issued foreign public and corporate bonds, and so on" (Kojima 1986, pp.58-59) ; And DFI represent "as the transmission of management resources in a package of capital, management ability, and technical expertise" (Kojima 1986, p.58-59). Kojima also suggests that included in the management resources

"are organizations that exhibit various capabilities in the process of corporate management, consisting outwardly out of the nucleus of managers but encompassing, in a wider sense, managerial knowledge and experience, technical and professional knowledge including patent, technical know-how, and marketing techniques, market positions in regard to sales, materials procurement, and capital raising, trademarks and goodwill, and organization for information gathering and research and development" (Kojima 1986, p. 58).

Kojima's definition of DFI is similar to the definition offered by Johnson. Johnson defines DFI as "the transmission to the 'host' country of a 'package' of capital, managerial skill, and technical knowledge" (Johnson 1972, p.2).

What is important to note from these definitions is, first, that the concept of management resources of FDI constitutes transfer of technology as pointed out by Yamada. Yamada argues that the Japanese DFI "represent not only a movement of capital but also a transfer of technology" (Yamada 1986, p.32). Secondly, FDI is not portfolio investment and therefore FDI should be differentiated from portfolio investment (Sekiguchi, 1979). FDI represents "a type of international capital movement of capital across national lines, however, it differs

fundamentally from other types of capital movement in its function" (Kojima 1986, p. 58).

Furthermore, the International Labor Office (ILO) suggests that "foreign direct investment (FDI) can be used as an approximate, and readily available, indicator of investment behaviour and activities of multinational enterprises" (ILO 1981, p.1), and United Nations (1983) notes that most FDI is in fact effectuated or brought about by MNEs. It can be said therefore that MNEs have been the principal source of FDI (ILO 1981, p. 1) and this is especially true in the case of the developing country.

Kojima argues that "the major proportion of developed nations' direct foreign investment is carried out by their giant multinational corporations as they advance their base of production, sales, and inputs (raw materials and parts) all over the world, forming gigantic networks as part of their global strategy of maximizing profits (or market shares)" Kojima 1986, pp.67-68). Reasons for, and characteristics of, foreign investment are various. Japanese foreign investment is believed to have different reasons and characteristics from those other country's foreign investments (Youngman 1980, pp. 61-66).

A study by Prof. Kunio Yoshihara of Kyoto University (Yoshihara 1978, p. 4) suggests that there are three types of Japanese DFI:

1. Resource-oriented direct investment, which is undertaken to increase the product needed by Japan in agriculture, fishery, forestry and mining.
2. Import-substitution direct investment, which is undertaken to produce for the domestic market of the host country manufactured products which were formerly imported from abroad, including Japan. The import-substitution

type of direct investment is usually undertaken when the host country introduces barriers against importing finished goods which it intends to produce itself.

3. Export-oriented direct investment, which is usually undertaken to set up manufacturing sector industries which serve as export platforms for exporting manufactured goods to other countries, sometimes even to home market of the investing country (Yoshihara 1978, p.4)

These types of the Japanese DFI as classified by Yoshihara have been characterized by Enderwich (1988) as "trade creating". The reasons for this, according to Enderwich (1988, pp. 36-37) are:

First, the direct investment package (capital, technology, management skills, etc.) is, at least to some degree, industry specific. Japanese outward investment occurs in a marginally comparatively advantaged sectors, typically labour-intensive and characterized by low and standardized technology.

Second, because of the complementarity between the transferred resources and the potential of host recipient industry.

Third, because of the sector-specificity of the direct investment package domestic diversification, i.e. cross-industry investment, is not a viable option for producers in supplier's country. As a result, output investment is prompted by growth considerations and a desire to retain competitiveness (Enderwich 1988, pp.36-37).

A further characterization of the Japanese DFI is suggested by other authors such as Komada (1986) and Jetro (1973). Jetro pointed out that "Japanese overseas investments are characterized by investment per enterprise being small in scale and the sphere of business activity not as extensive as with western enterprises. Japanese enterprises overseas activities are generally limited to a single market sector of the country into which they advance based on economic nationalism and domestic promotion policies of the local government" (Jetro 1973, p.13). Jetro's characterisation of Japanese overseas investment is

actually similar to those characterised by Kitamura (1976), Enderwhich (1988), Yamada (1981, and Komada (1986).

Kitamura for instance suggests that

"Japanese overseas investment is characterized by the larger share allocated to the developing country of the third world, which absorb about two-thirds of funds invested in manufacturing and mining in contrast to other capital-exporting countries, which usually direct a major part of investment funds to the other advanced industrial areas....the scale of Japanese investment abroad is generally a comparatively small size, and most foreign business activity involving the investment of Japanese capital is of the joint venture with local partnership inhibit fully-owned subsidiaries" (Kitamura 1976, pp.166-76).

Kitamura further suggests that "to the extent to Japanese investment has been directed to the developing countries of the Third World, the types of the technology transferred and the size of the typical operations were rather well adapted to the needs of these countries" (Kitamura 1976, p. 168).

Meanwhile, Enderwick argues that "the distinctive traits of the Japanese direct foreign investment (late take-off, geographical concentration in the developing countries, production of standardized commodities) have let to the development of a specific Japanese -oriented (alternatively termed trade-oriented or macro-economic) theory of foreign investment" (Enderwick 1988, p.36).

One important aspect of Enderwhich's characterizations of Japanese FDI is a view which suggests that the Japanese FDI is trade oriented. Such a view is also shared by Yoshihara (1978, p. 4) and Kojima (1978). Kojima argues that the Japanese DFI is trade-oriented in contrast to Americans-type anti-trade oriented investment.

The trade-orientation of Japanese DFI is "aimed at complementing and strengthening comparative advantage in investing and receiving countries alike" (Kojima 1978). Kojima further argues that the Japanese DFI is also characterized by most investment being directed toward manufacturing sector and undertaken by small and medium sized firms. A similar argument is also put forward by an earlier study of Kitamura (1976,p.167). Other characteristics of Japanese DFI in manufacturing industries as studied by Sekiguchi are that

- (1) A higher percentage of the Japanese investment is in DCs
- (2) Within the manufacturing industries, industries such as textile, electrical machinery which are considered as labor intensive sectors, are dominant in the Japanese foreign investments.
- (3) A large number of those Japanese DFIs is done by smaller and medium size firms in contrast to that of the United States and European FDIs.
- (4) The Japanese DFI is characterized by active participation of general trading companies (Sekiguchi 1979, pp.53-58).

The fourth characteristic, according to Krause and Sekiguchi (1976, pp. 392-93), has become one of the most important characteristics of Japanese DFI and is little known to Western society. According to a study by the Japanese Export-Import Bank as quoted by Sekiguchi (1979, p. 58) in fiscal year 1971 alone about 43 percent of foreign investment outstanding in the textile industry was by general trading companies, at the same time general

trading companies exported 56 percent of Japan's textile product and imported 60 percent of textile products (Krause and Sekiguchi 1976). As generally characterized by the Japanese DFI, in which most Japanese DFI are in manufacturing industries, and the textile industry appears to have been prominent in manufacturing industries especially in Asian and Latin American developing countries (Sekaguchi 1979, p.9 and Kitamura 1976, p. 167). In terms of business operations most Japanese DFI in DCs is by way of joint ventures often with minor equity participation.

A study undertaken by Yamada (1981, p.23) on Japanese DFI in Asia suggests that Japanese manufacturing investment in Asia shows a proportionally declining trend of Japanese equity in favor of local equity.

A study conducted by Indonesian economists (Siahaan et al 1978, p.99) indicated that the nature of Japanese DFI was of the import-substitution rather than the export-orientation type. Such a finding confirmed an early survey undertaken by MITI (Ministry of International Trade and Industry) from Japan which suggested that only 16 percent of their output were exported and the rest was marketed in Indonesia (Yoshihara 1978, pp. 48-49).

A study by Japan's JETRO Jakarta Centre in 1981 Japanese direct investment in Indonesia showed that most Japanese direct investments were concentrated in relatively labor-intensive industries such as textiles, metal products, chemical, the automotive industry. This study confirms an early study conducted by Kojima (1979). He said that Japanese

"investment in manufacturing has been confined

either to such traditional industries as textiles, clothing and processing of steel in which Japanese has been losing its comparative advantage, or the assembly of motor vehicles, production of parts and components of radio and other electric machines in which cheaper labor costs in South-East Asian countries are achieved and the Japanese firms can increase the exports, substituting for exports of final products, exports of machinery and equipment of the factory and technological know-how" (Kojima 1978, p. 86).

A later study of Yamada supports the finding of both Kojima and Siahaan's studies and adds that Japanese FDI "represents not only a movement of capital but also a transfer of technology. In addition, it leads to the transfer of culture" (Yamada 1981, p.23).

3.5 Reasons for Japanese Foreign Investment

The ILO (1981, p. 2) note that the reasons for MNCs investing in DCs are:

- (a) to obtain access to raw materials;
- (b) to protect and/or to develop their share and production in internal (or regional) markets
- (c) to take advantage of factor cost (notably labour costs) by setting up assembly and processing operations (ILO 1981, p.2).

The ILO study further notes that reasons for investment overseas may change and be valid over time in given circumstances depending on location and forms of investment. A study by Grewlich (1980) probably gives the most complete list of reasons for MNCs investing overseas as follows :

- "(i) to gain access cheaper labor and energy, as well as to escape in certain cases strict regulations and standards, e.g., against pollution;
- (ii) to take advantage of changing trade relations (this factor was especially important in the early 1960's with the

- formation of the EEC, which American businessmen feared might effectively exclude their products);
- (iii) to get close to growing foreign market (to save on transportation cost and enhance sensitivity to local market condition);
 - (iv) to prevent competitors from pre-empting a foreign market or source of supply (this motivation seems to be particularly conspicuous in the extraction of raw materials, advanced technology industries and banking, law and insurance) ;
 - (v) to escape domestic anti-trust laws (during the 1960s some Americans investment took place abroad simply because anti-trust laws inhibited some of the biggest firms from investing at home);
 - (vi) to shield a big TNE from cyclical fluctuations in its home market (until 1974 trade cycles were generally not synchronised; thus market declines in profits at home could be offset by satisfactory earnings abroad);
 - (vii) to obtain the advantages of more thoroughly integrated operations on a large scale (..this may have been the principal reason why TNEs have spread the computer led revolutions is possibly going to make those advantages of integrated operations more important still);
 - (viii) to secure raw material sources " (Grewlich 1980, p.53).

These cited reasons may or may not simultaneously apply to one single MNC as it very much depends upon the internal and/or external environment or stimuli. The imposition of trade (import) restrictions by most traditional importing countries in the third world has been induced by an industrialization strategy which is in favour of domestically produced goods and this strategy has led the DCs to adopt a policy of import substitution. The adoption of this strategy has in turn forced exporting countries in the industrialized nations to expand their foreign investment and locate their production of goods in foreign countries.

The adoption of an import substitution policy by most

DCs is not merely based upon pure economic considerations but also on rising economic nationalism and political grounds on the host countries. Anti Japanese movements and demonstrations against Japanese presence that exploded at the end of 1973 and early 1974 in various places in Southeast Asia including in Indonesia, Thailand and Malaysia had been ignited and influenced by so-called "Japanese over presence " which implied a monopolistic power of Japanese investors over the local economy. It was argued that a continuing presence and concentration of economic power in the hands of Japanese investors would lead to continuing dependence of the host country on the Japanese and further weaken the economic power of local firms. Others argued that antipathy shown toward the Japanese was "strongly influenced by managerial, social and cultural factors, including the concentrations and access of investment in the specific regions, the lack of managerial experience, delay in coming to terms with the culture of the host country and language barriers" (Sekiguchi 1979, p. 62).

There were many other arguments put forward to justify anti-Japanese movement in Asia. Whatever the reason, DC governments adoption of "import substitution" policy accompanied by import restrictions should be seen largely as a response to the Japanese over presence or monopolistic activities in the host country's economy. It appeared that Japanese investors responded positively to host countries demand for producing goods in the host countries by using local materials and employing local labour with more appropriate types of technology. From the

point of view of Japanese investors and of investors in general, rising labour costs, raw material shortages and thougher environmental control in their countries were among the reasons for FDI.

A senior executive of General Motors, the world's largest private business, told the Japanese government's multinational enterprise Survey Mission sent overseas that "the key motivating factor for a capital advancement overseas is based on whether we can surmount through capital advancement non-economic barriers restricting imports even though there may be a potentially big demand for import". (Jetro 1973, p. 15). This is especially the case for American and European MNCs.

Jetro (1973, p. 15) also points out that "this reason is also applicable to the recent advancement overseas of Japanese enterprises". The same survey conducted by Jetro revealed that of 32 of the Japanese "leading enterprises clearly indicates that import restrictions overseas are primarily responsible for their overseas investment expansion". According to Jetro "this fact was cited by 83 per cent of the enterprises polled" (Jetro 1973, p.16). Jetro's survey adds that "a rise in economic nationalism in developing nation" (Jetro 1973, p.16) motivates the Japanese enterprise's capital advancement overseas.

Along with studies cited above (ILO 1981 and Grewlich 1980), an earlier study by Sueo Sekiguchi (1979 pp. 58-62) elaborates the motives of Japanese DFI especially in manufacturing industries as resting on two main factors. There are domestic factors which refer to national Japanese socio- economic environment, and factors on the host

country's side.

It was argued by Sekiguchi that the accumulation of managerial resources by Japanese firms, scarcity of labor force and an accelerating increase of wages in Japan, as well as the Japanese government's more positive policy toward foreign investment (first introduced in 1970), are the determining domestic factors for Japanese foreign investment expansion. These factors are operating at the same force as external factors in the host countries.

Sekiguchi's external factors are similar to some of the factors found in the studies of ILO (1981) and Grewlich (1980). Sekiguchi, points to the fact that in the case of Brazil "it provided access to the Latin Americans market for Japanese firms and also conformed to the Brazilian government's policy diversification of investing countries" (Sekiguchi 1979, p. 62) and has been the stimulating factor for a rapid increase of Japanese investment. Sekiguchi's findings confirmed an earlier survey undertaken by the Japan Export-Import Bank in 1972 (see Kitamura 1976, p. 166).

One important point which derives from Japanese overseas ventures was cited as having been motivated by expanding "sales in line with increasing demand, rather than to exploit opportunities within an over all strategy of international expansion of company activities" (Kitamura 1976, p. 166). This finding put "increase demand" as an important factor for Japanese DFI. This factor appears to have been rarely mentioned in the later studies as quoted earlier.

3.6 Japanese Technology Transfer

The characteristics of Japanese technology transfer is associated with the character of Japanese direct foreign investment as discussed earlier. Kojima further argues in his study that "a large proportion of Japan's technology is embodied in and achieved through direct investment" Kojima (1978, p.136). Earlier discussions suggest that the Japanese DFI "represent not only a movement of capital but also a transfer of technology" (Yamada 1981, p. 23). An earlier study by Terumoto Ozawa (1971) noted in Kojima's study (1978) found some important aspects of Japanese TT to DCs. Those important aspects are :

- "(1) The mechanism of Japan's technology transfer to developing countries in Asia is capital intensive or to put it more appropriately, is highly labour-intensive, a great deal of manpower being involved on the part of both the transferors and transferees.
- "(2) Japanese technology transferred to developing countries,....is not so much specific production techniques but rather know-how or general industrial experience involving not the latest but mature techniques. This type of technology often requires the actual participation of the transferees at the production and management levels for a considerable period of time.
- "(3) Because of the nature of technology transferred, i.e., mostly production techniques of standardized products and general industrial experience, fundamental technical change seems to be required of a given technology so transferred Of course, there are many cases of slight modifications such as production process being reoriented to more labour intensive methods.
- "(4) Though developing countries are pursuing import substitution industrialization or export - oriented industrialization by offering tariff protections and other measures, they have unavoidably to face 'diseconomies of scaling down' because of the narrowness of their market. But small -

productions of products which require mature and standardised techniques would not face such difficulties as in the case of direct investment by small and medium-sized Japanese enterprises.

- "(5) The technology transferred by Japanese firms to developing countries is likely know-how or modernization experience and skill associated with standardized production techniques. This type of technology can not be easily embodied in capital equipment, blue prints, or instruction sheets but is mostly embodied in labour at all levels of operation" (Kojima 1978, pp. 138-39).

Ozawa's study provides an interesting dimension as it illustrates the characteristics of Japanese TT to DCs. Ozawa indicates that (a) highly labor-intensive technology and, (b) more general and mature industrial techniques of production are characteristic of Japanese TT to DCs. There are other characteristics suggested by other studies such as the one conducted by Komoda (1986). Komoda suggests that human contact is an important element in Japanese technology. The importance of human contact in Japanese technology provides a distinct characteristics to Japanese technology transferred to DCs. The importance of human contact in the Japanese TT process is in itself important because it actually distinguishes Japanese TT from technology transferred by other countries. The reason provided for this is "because Japanese technology transfer is closely wedded to particular Japanese managerial skills and know-how that can be transferred through close contact. The managerial skills aspect is particularly important in the case of Japanese technology transfer" (Komoda 1986, p. 412). The importance of human contact that accompanies Japanese TT in fact in itself provides a special aspect in Japanese technology

transfer as it characterizes Japanese management system and practices. The nature of technology produced generally reflects the characteristics of the country which produces it, as pointed out by Singer (1975), Stewart (1977) and Ozawa (1979). Singer for instance argues that "Ninety-nine percent of the total creation of new science and technology being made in the rich countries by methods which are suited to the circumstances and requirements of the rich countries" (Singer 1975, p.129). And Francis Stewart also expressed a similar contention. Stewart says that "the technology available to a particular country is all those techniques it knows about and could acquire, while the technology in use is that subset of techniques it has acquired" (Stewart 1977, p.1). Meanwhile, Ozawa argues that "one major characteristic of Japanese multinationals, ... is that they are strongly influenced by macroeconomic factors of their own economy" (Ozawa 1979, p.39).

Japanese business practices and technology mirror those practices and management systems prevailing in Japan. The core element of Japanese business practices is reflected in their management practices, and the essential point of Japanese technology can be found in the knowledge and skill that are required to produce and operate the technology. The production of the Japanese technology is initiated through domestic innovation of technology by way of R&D activities. The aims of Japanese innovation as studied by Franko (1983, pp. 33-35) have been oriented to (1) an acute problem particular to the Japanese space-saving which take forms such as miniature TV sets,

appliances, hi-fi's, cars, trucks, radio transistors, and computers; (2) raw material and energy conservation. This has come to the forefront since the 1970's. Franko notes that the orientation of Japanese R&D toward this goal has become even more pronounced; (3) only a very small proportion of Japanese innovation is aimed at the primary end result of using less labor in production. Other than these, it should be pointed out, however, that Japanese R&D activities are not only directed toward investing new technologies but also "directed at improving on or advancing existing technology" (Franko 1983, p.32). The technologies invented in this process are transferred to the host DCs. Japanese technologies that are transferred to DCs appear to be more appropriate to the needs of the host countries as suggested in Kitamura's study. In his study Kitamura concludes that "to the extent to which Japanese investment has been directed to the developing countries of the third world, the type of technology transferred and the size of typical operations were rather well adopted to needs of these countries" (Kitamura 1976, p.168).

The business practices or management systems of the Japanese relate mainly to the Japanese companies or MNCs. Ichimura's study of Japanese firms in Asia (1981) suggests that though the Japanese firms can give full play to the Japanese management system, most the Japanese firms "must compromise their operation to meet local requirements (Ichimura 1981,p.36). Such a compromise may further suggest that Japanese management may not be fully transferred to the host country. This implies that the transfer cannot be regarded as 'effective' and 'successful'.

However, again, success of any transfer depends upon how both parties conduct the transfer itself. On this point, Roman and Puett, Jr. advise that "there are usually two parties to the transfer of technology. If the transfer is to be successful, both parties must perceive and achieve benefits" (Roman and Puett, Jr. 1983, p.173) And Ford argues that "the effectiveness of any management system can be understood only within cultural, socio-political and economic framework of a company's employers and employees" (Ford 1985, p.21).

The transfer of Japanese technology to DCs is confined to the framework of international business operations and strategy of the Japanese MNCs. However, although the Japanese TT to DCs is to MNCs international business expansionism, that is, through DFI, Japanese TT and DFI are quite different from that of other developed nations such as the US, as argued by Kojima (1978, p. 150). He stresses that

"American-type direct investment is undertaken for quite different reasons from Japan-type investment. American firms, particularly giant multinational cooperations, invest abroad as part of global strategy in order to maximise monopolistic or oligopolistic profits. Therefore they prefer wholly owned subsidiaries, that is, an enclave, protecting technological monopoly by patents, and prevent technology transfer and spread effects" (Kojima 1978, p.150).

Meanwhile, Kojima further argues that "a substantial proportion of Japanese direct foreign investment in manufacturing is undertaken by small-and medium sized firms, on a smaller scale than investment by Americans firms, and transferred technology suitable to local factor

proportions with larger employment and training effects than those characteristic of 'enclave' investment. Joint ventures have been preferred to wholly owned subsidiaries". (Kojima 1978, p. 86).

The preference of Japanese DFI for joint ventures and the mature and standardized technology transferred to DCs are unique when one contrasts them with those of DNs. It is even more interesting when one examines the strategic aims of Japanese TT and the role played by Japanese trading houses in the transfer process. This unique and important role played by Japanese trading houses is believed to be responsible for the success of the Japanese TT. This success is to a certain extent dependent upon the strategic aims or goals of the Japanese TT. A study by Saito demonstrates that there are three main strategic aims of Japanese TT, (1) the development of the Japanese economy and international division of labour through technological innovations, (2) maximization of profits through technology transfer establishment of superiority in technology competition, utilization of technology transfer for the resolution of economic frictions, (3) a contribution to world peace and the development of developing countries, fulfillment of international responsibilities" (Saito 1985, pp.5-7). Saito further argues that those types of technology transfer are included in (1) unpackaged transfer of technology, (2) technology transfer packaged with overseas investment, (3) technology transfer embodied in machinery and personnel and (4) technical aid.

A decision as to whether the technology should be

transferred in a packaged TT or unpackaged TT depends on several factors. Roman and Puett, Jr. argue that "if the technology is very recent and technologically complex the probability is that it will be transferred as package" (Roman and Puett, Jr. 1983, p173. In this respect Roman and Puett, Jr. further argue that the technology supplier "would have high control of the technology". There are two points deriving from Roman and Puett, Jr.'s arguments. First, the complexity of the technology will determine whether the technology should be transferred in a package or not. The more complex the technology, the more likely the technology will be transferred in a package form. Second, the complexity of technology appears to have some kind of relationship with the degree of control over the transferred technology and so the package system. In other words, the degree of control will depend upon the degree of technological complexity. The suppliers of technology prefer to have packaged transfer of technology as they will control, and have monopolistic advantage over, the TT as pointed out by Roman and Puett, Jr. As they state "highly packaged' transfer tend to provide the supplier with monopolistic advantage. The 'packaged' transfer generally represents some form of licensing for process technology and probably also includes direct equity investment by the supplier of the technology" (Roman and Puett, Jr. 1983, p.173). They further state that the reasons for packaging the transfer of technology are, "First, when there has been 'packaging' and the supplier has equity participation the chances are that the supplier will exercise

considerable control over production operation. **Second**, the receiving enterprise may have little or no expertise in the technology and may actually solicit a 'packaged' transfer to facilitate production and minimize risk. **Third**, the recipient may want access to a trade name or a trade mark owned by the supplier. To receive the identified product the recipient may be willing to make concessions to the sellers by which the seller maintains substantial technical and managerial control over the operation". (Roman and Puett Jr., 1983, p. 174).

Saito's study suggests that most Japanese TT to DC is carried out by way of 'package transfer'. This is surprising as (1) it differs from the practice of most western MNCs, such as the US and European, and (2) there is a strong move within the technology recipients of DCs in favor of the unpackaged transfer of technology as suggested by Kojima. He said that "recently, developing countries have strongly requested as unpackaged transfer of technology, capital and managerial knowledge in the form of direct foreign investment" (Kojima 1978, p.150). The preference given by DCs to the unpackaged transfer of technologies arises from issues of control, ownership, price and appropriateness of technology. A view put forward is that the packaged transfer of technology will place the recipient DCs in the disadvantaged or weak position on those issues. Such a disadvantage or weak position is unavoidable as the technology is produced and owned by the donor countries. These issues will become a continuing matter of dispute between the recipient and donor countries

for many years to come and may never be solved to both sides' full satisfaction since DCs remain as recipients of foreign technologies. While these issues are yet to be solved, the question which has to be answered is put forward by Kojima (1978, p. 150). He argues "whether it is a packaged or unpackaged transfer of technology is not important, but which type of direct foreign investment a developing countries chooses is crucial" (Kojima 1978, p.150). He further argues that "if developing countries welcome American-type technology, the result is 'no transfer' of technology. If they welcome Japanese-type of direct investment and if it is accompanied with fade-out agreements, the technology is transferred more efficiently and economically, and there is no reason for the developing countries to prefer the unpackaged transfer of technology" (Kojima 1978, p 150).

The traditional pattern frequently used in the past included technology as part of the investment package, together with managerial skills, technical know-how, and capital. According to Cavusgil (1985), no single method is perfectly suited to all circumstances and each has its own particular advantages and shortcomings. However, Wallender (1980) argues that foreign investment will continue to be one of the proven ways to transmit technology. Licensing is also considered one of the most common modes of technology transfer. Balcat's research (1985) on the transfer of Italian technology to India, for example, suggests that licensing agreements are far more popularly than are other forms of technology transfer, as is evident

in TABLE 5.

Balcet's research (1985) further reveals that the forms of technology transfer, in order of popularity are licensing, turnkey, joint venture, management and service contract, sales of patents, and product-in-hand contracts.

Cavusgil (1985) also observes that there is one method perfectly suited to all circumstances. Pavitt appears to agree with Erdelik and Rapoport's observation by saying that "the sources, nature and mechanisms for international transfer of technology vary considerably from sector and sector" (Pavitt 1983, p.9).

The use of licensing as one of the mechanisms of transferring technology, is regarded by Kaynak (1985) as the most versatile as it offers flexibility in the choice of and opportunity for, the source and the receiving institution to accommodate their individual needs through negotiation. As the nature of licensing is the use of know-how, technical assistance, copy right, character merchandising, patents, trademarks and technology, regardless of whether an equity relationship exists between the licensee and licensor (Skelton, 1984 and Rhymes 1971), it is expected that the technology effect on the host country may not be as great as foreign direct investment. Balasubramanyam's study (1973, p,24) points out that foreign direct investment has a high degree of control by means of equity ownership and the extent of technical involvement in the recipient country is high. Other forms of transfer, such as the joint venture and other collaborative agreements (including licensing), will have

TABLE 5**FORMS OF TECHNOLOGY TRANSFER**

	Number of Agreements
Joint ventures	6
Turnkey agreements	8
International subcontracting	0
Sale of patents	4
Licences on patents	14
Other licences	21
Management and service contracts	4
Franchising	1
Product-in-hand contracts	2
Production-sharing contracts	0
Collective R and D	-
Training of Indian labour	40
Provision of Italian skilled labour	25
Total number of agreements	47

Source : G. Balcet (1985) "Transfer of Italian"

limited technological involvement. The extent of knowledge transmitted and the degree of control as well as the nature of capital participation, is shown in TABLE 6.

A study by Lee (1984, pp.125-136) on Japanese and American technology transfer to Korea reveals that Japanese MNCs utilise licensing as their technology transfer mechanism, and most of Japanese licensing in the Korea was in high-technology industries. In using licensing, the Japanese generally transfer mature and standardized technologies and this is consistent with the argument put forward above. On the types of technical and managerial assistance provided by the Japanese in transferring technology to Korea, Lee's study found that most of the Japanese firms' assistance is in the forms of technical assistance (78 percent) and marketing assistance (49 percent), while only 16 percent provided assistance in either patented technology or management know-how. This suggests that the transfer of management skills by Japanese firms may not be as great as other skills. This is understandable, because Japanese firms mostly transferred labor-intensive technology rather than capital-intensive technology as is also the case of U.S. technology transfer. However, Kojima (1977) argues that the Japanese transfer of technological knowledge is greater, in direct foreign investment than do U.S. terms. Nevertheless, Lee's study (1984) which asked "has technology of management know-how been transferred?" of the subsidiaries, found Japanese subsidiaries in Korea regarded that Japanese 'technology transfer' as more effective (73 percent) than 'management

TABLE 6

SUMMARY OF THE RELATIVE CHARACTERISTICS OF VARIOUS FORMS OF FOREIGN PARTICIPATION

Nature of Foreign Participation	Foreign Share of Equity	Extent of Technical Involvement	Degree of Control Exercised	Means by Which Control Is Exercised
Foreign direct investment (FDI)	Majority share or complete ownership	High	High	Equity ownership
Pure Technical collaboration agreements (PTA)	Nil	Limited	Lower than FDI Temporal control may be insignificant but effective control high	Control over technology and stipulated restriction clauses
Joint business ventures (JV)	50 percent or nearly so. In any case greater than under PTA but less than FDI	Greater than PTA but less than FDI.	Less than FDI. More or equal to that of PTA depending on nature of activity.	Equity share and control over technology
Technical collaboration agreement with majority foreign equity (TCFE)	Minor share Usually less than 30 percent of total.	Less than FDI, JV, but more than PTA.	Less than FDI. Greater than PTA.	Control over technology and restriction clauses

Source: V.N. Balasubramanyam (1973) "International Technology Transfer to India". Table 1. p. 24.

know-how' transfer (only 37 percent). The same trend was also found in the case of U.S. technology transfer. In short, Lee's study in many respects confirms Kojima's result which suggest that the Japanese technology is more sophisticated than the United States technology transferred overseas. The difference of the technology transferred between the two countries, according to Lee, is more in technology being tranferred through direct investment than through licensing.

The literature related to Japanese technology transfer appears to suggest it is a more narrow in scope than the several modes of technology transfer discussed above. Research by Hieneman, et al. on technology transfer from Japan to Southeast Asia suggests that "direct investment is the channel through which most of Japan's technology reaches the developing nations of Southeast Asia. The emphasis on direct investment is in contrast to the licensing agreements Japan employes in transferring technology to advanced nations outside Asia"(Hieneman, et al. 1985, p.144). The same conclusion was also reached by Lee (1984, p. 133), Teece (1981a, pp.67-68) and by Tsurumi (1976). Tsurumi's research in Indonesia, Thailand and Malaysia which suggests that

"The developing nations in Asia were purchasing manufacturing technologies held by small- to medium sized firms in Japan. In the Asian Nations, such countries as Taiwan, Singapore and India were the most frequest purchasers of old technologies that had only recently begun to loss their dominant presence in Japan. On the other hand, other Asian countries such as Thailand, Malaysia and Indonesia appeared technologically yet too weak to absorb Japanese technologies merely through licensing agreements. As a result they

purchased older and more simple technologies from Japan mainly through "direct investments" of Japanese firms" (Tsurumi 1976, p.176).

In many instances, as in Southeast Asia, the Japanese prefer to use joint ventures for technology transfer, because there is a common feeling among Japanese managers that joint ventures are less vulnerable to political risk (Yoshino 1975, pp.261-62 and Shudan 1974, p.49). Moves by Southeast Asian countries to restrict imports in favor of local production have also served to promote direct foreign investment and joint venture activity (Ozawa 1981, p.35). This suggests that political or economic policy in the host country contribute to a change in the mode used by the donor country to transfer technology.

The selection of the mode of technology transfer is in many instances influenced by

(1) strategic decisions the technology transferor itself.

Tournemine (1985) argues that the strategic reasons for technology vary depending on the form of transfer. Technology transfer projects should be seen as one mechanisms of international competition, and should be studied in the context of the long-term strategy of each firm. This strategy is not determined primarily by short-term profit considerations, but by broader objectives such as acquisition of specific skills in order to be more effective in developing new markets, utilisation of surplus capacity, and internationalisation. Any form of transfer chosen to enter a new market reflects the nature and strategy of the business and the position of the firm in the new market. Whatever form is chosen by the foreign firm

will affect in some way the local technological development such as local employees' skill formation (Lee 1984);

- (2) the type of transfer, the type of engineering consultancy firm, or sector of activity (Tournemine 1985, p.2044); and
- (3) "on several factors, most significantly on whether the transfer was international or domestic. Other important factors included the characteristic of the country in which the facility was to be located, the competition faced by the technology-owning firm, and certain characteristics of the technology-owning firm itself" (Stobaugh 1984, p.160).

Similarly Barranson (1970, p.435) argues that decisions by international firms favoring either licensing or direct investment are strongly influenced by a combination of the following factors: (1) the complexity of the product and production techniques being transferred; (2) the transfer environment in the donor and recipient countries; (3) the absorptive capabilities of the recipient firms; and (4) the the transfer capability and profit maximizing strategy of the donor firm. A study by Contractor (1981, pp.75-79) provides some strategic concepts as to what conditions makes licensing more appropriate for transferring technology or for choosing foreign investment as outlined in TABLE 7. These factors and concepts are interrelated and each will contribute to any decision making in transferring technology to, or foreign direct investment in, the developing countries.

TABLE 7**LICENSING AS A PREFERRED STRATEGY UNDER FOLLOWING CIRCUMSTANCES**

Strategic concept	Conditions	Empirical Support/ Studies
1. Product Cycle Standardisation	Obsolescing products considered for licensing Imminent technology or model change Increasing competition in product market	Stobaugh (1971), Telesio (1977) Contractor (1980)
2. Environmental Constraints on FDI or FDI Income	Government regulations restricting FDI to selected sectors only High political risk in nation Market uncertain or volatile, licensor lacking in requisite marketing abilities, or market too small for FDI.	UN (1978), Ozawa (1979), UN (1977), Hayden (1976) Sagasti (1979)
3. Constraints on imports in licensee nation	A high ratio for transport cost to value for item Tariff or non-tariff barriers	Dunning (1980), Contractor (1981)
4. Licensor firm size	Licensor firm too small to have financial, managerial or marketing expertise for overseas investment Licensor firm too big (see 12 below)	Telesio (1977)
5. Research intensity	Licensor firm will remain technologically superior, so as to discount licensee competition in other markets	Hayden (1976), Telesio (1977) Baranson (1978)
6. High rate of technology turnover	Change so rapid, and technologies so perishable (e.g., semi-conductors) that even with equally proficient licensees, a design or a patent may be transferred with little fear of significant competition.	Contractor (1981)
7. Perpetuation of licensee dependency	Even without or beyond the licensing agreement, effective licensee dependency maintained by trademarks, required components or licensee hunger for technical improvements.	Davies (1977), UN (1975), Lall (1976)
8. Product vs Process Technologies	Licensing opportunities in auxiliary process (e.g., galvanising in the steel industry, or anodising aluminium) even if the basic product technologies not licensed	Teece (1977), Contractor (1981)
9. Reciprocal exchanges of technology	Licensing as a valuable tool for obtaining technology or market rights, in industries characterised by high R&D and market development costs and product diversity (e.g., Pharmaceuticals, Electrical, Chemicals).	Telesio (1977)
10. "Choosing" competition	With a patent about to expire, licensing gives a head start to a licensee firm favoured by present patent holder. (May be illegal in some countries.)	Contractor (1981)
11. Creation of auxiliary business	Even if direct royalty income is inadequate, margins on components to or from licensee can be handsome (in the extreme, e.g., licensing automobile assemblers, licensing is tantamount to disguised imports). Other auxiliary business can be turnkey plants, joint bidding with licensee, etc.	Hayden (1976), Baranson (1978) Contractor (1981)
12. Diversification and product-line organisation in licensor firm	Especially in large diversified firms, with divisional attention focused on the "product imperative", a centralised examination of the product/country matrix reveals neglected market penetration possibilities via licensing, (especially where considerable diversification puts a constraint on the financial and managerial resources available for equity ventures overseas).	Contractor (1981), Telesio (1977)

Source: F. J. Contractor (1981) "The Role of Licensing in International International Strategy ", Table 3, p.76.

3.7 Barriers to and Success in Technology Transfer:

It is argued by Cook that "the barriers to success of technology transfer are really the barriers to transfer of knowledge" (Cook 1974, p.540). This would seem to be logical in the sense that often the most important part of technology transfer is the transfer of know-how. For the purpose of this study, a barrier to technology transfer is anything that impedes, restricts, or forestalls the smooth transfer of technology.

Given this definition it is possible to think of many potential barriers. The ability to overcome these barriers will be a condition for the success of any technology transferred. Singh (1983) as quoted by Rodrigues (1985, p.27) set five conditions of successful technology transfer:

1. a willingness by the transferor and the transferee must exist;
2. there must be a stable and efficient government;
3. the importer must possess effective R&D programs;
4. there must exist an appropriate education system; and
5. the proper planning for importing the appropriate technology must exist.

Rodrigues argues that before the appropriate technology can be imported, rational actors may first have to develop and implement policies and programs which are conducive to technology transfer. In the case of developing countries, Rodrigues further argued, that "before they can import the appropriate technology, managers in developing nations need to acquire managerial know-how" (Rodrigues 1985, p.27).

Meanwhile Sirgy (1985, pp.202-203) discusses

technology transfer in terms of the diffusion of new technology. Sirgy listed three groups of factors that can affect new technology diffusion; government factors; conditional factors; and adopter factors. **Government factors** include: technology structure and development plans, barrier or incentive systems, communication structures, and financial access. **Conditional factors** include: existing and forecasted trade and economic conditions, political support, opinion leadership, and the relative strength of existing indigenous technology. **Adopter factors** include: education, innovativeness, sociocultural norms, professionalism, and conceptual skills. Sirgy postulates that these exogenous variables influence a set of proximal (intervening) variables involving the following factors: (1) compatibility of the technology with domestic sociocultural norms; (2) relative complexity of technology; (3) the extent to which the technology is abale to be trialled; (4) the perceived relative advantage of the technology; and (5) the communication system within the social structure of the potential adopters. Earlier Gee (1979, p.6) and Lasserre (1982) had also been involved in a debate over technology. Lasserre's analysis (1982) of the cases he studied pointed out some important factors which were linked to the percieved success or failure of the technology transfer. As indicated in Figure 8, there are four interrelated categories that contribute to the success or failure of technology transfer: general conditions; transferor's characteristics; transferee's characteristics; and relationships. Gee (1979), meanwhile argued that a

successful policy of technology exchange or transfer required several factors as follows:

1. A rigorous analysis of the level of the technology to be transferred (i.e whether its was advanced technology or not).
2. An appreciation of the amount of equipment and knowledge to be exported. The extent of the transfer must be commensurate with the needs to be satisfied and the size of the receiving sector.
3. Control over the rate of transfer, which should be spread over a fairly long period so as to enable knowledge and techniques to be disseminated and assimilated.
4. The availability of capital equipment initially required.

The barriers to technology transfer are not solely created by the technology transferee (termed here internal barriers) but also by the technology transferor (termed here as external barriers). **Internal barriers** are those barriers already in existence in the technology recipient, and **external barriers** are those barriers brought in by the technology supplier. An important key to understand the issues of barriers is by analysing the types of problem transferring the technology, as percieved by both the transferor and the transferee. Both sides will perceive differently the problems encountered in tranferring technology. Research by Lasserre (1982) provides some interesting information on this issue, being discussed as shown in TABLE 8 which suggests that both European and local companies in Asia perceive behavior and and social

TABLE 8

PERCEIVED SOURCE OF PROBLEMS IN TECHNOLOGY TRANSFER

As perceived by European	Frequency %	As perceived by local printer	Frequency %
<u>General Conditions</u>		<u>General conditions</u>	
Change in economic conditions	} 30	Competition	} 35
Devaluation		Government regulations	
Imitative competition		Bad debts	
Unfair competition			
<u>Government policies</u>		<u>Behaviour of European managers</u>	
Local content push	} 23	Lack of trust	} 65
Bureaucracy		Lack of experience	
Remittances		Too many expatriate	
<u>Behaviour of local</u>		Too high technical expectations	
Partners and employees	} 47	Too high sales quota	
Lack of managerial skills		Lack of communication	
Absenteeism			
Poor motivation			
Lack of dynamism of local partner			
Lack of trust from local partner			

SOURCE: P. LASSERRE (1982) "TRAINING : KEY TO TECHNOLOGICAL TRANSFER". Table 1, p. 51

skills as their main concern. In his study, Lasserre regards host country government policy on 'local content push' (Lasserre 1982, p.56) as an important problem in technology transfer.

The experience of Japanese technology transfer to Southeast Asian countries illustrates the nature of problems or external barriers to technology transfer. According to Heineman et.al., (1985, p.150), the sheer size of Japanese investment is a source of conflict and concern, and Japanese cultural and business styles have likewise created problems for the Japanese.

The problems experienced by the Japanese in the Southeast Asia described by Heineman et.al. illustrate the barriers which hamper the effectiveness or success of technology transfer. Kosenko and Samli (1985, p.115) regard language has been as a major barrier of exporting technology.

The communication or language barrier is basically part of a general socio-technological barrier. Since people-to-people contact is essential to the success of any technology transfer, one would expect a failure in communications to be a significant barrier. Such failure may be caused by the language itself or by individual methods of communication and thought. The problems of language and communication relate directly to culture in that "the language of everyday use is imprecise and easily subject to identification reactions....the meaning of words is in us rather than in word itself" (Peters 1975, p.76). Thus the context of discussion and the background of individuals, determine the nature of possible

communications barriers. One of the most interesting studies of communications barriers is that of Brasseur (1976) who presents a very concise statement of the problem: "First the counterpart's mother tongue is usually different from the expert's and, second, the former usually has lower professional qualification than anyone the expert is used to dealing with in his home country. Still many experts keep talking and behaving as if this were not the case, or even show irritation for not being properly understood" (Brasseur 1976, p.13).

Brasseur goes on to present a graphical analysis of the transmission of knowledge. This communications barrier is closely related to other cultural barriers such as attitudinal barriers, that may exist with respect to people involved in technology transfer.

Perhaps the greatest attitudinal barrier is that of resistance to change, commonly called the 'not-invented-here' syndrome (see Lowe 1984). In the long run people are willing to accept change despite resistance in the short run (Deutschmann 1968, p.11). This resistance may be caused by the introduction of a new technology that will cause a radical change in attitudes, organization and current processes. A strong sense of professional pride may also cause resistance to a new idea or methods, particularly when the idea or methods originate in another environment. This 'not-invented-here' attitude is particularly common among scientists, engineers and technologists who see new ideas as potential threats to their profession reputation (Peters 1974, p.83).

The absence of barriers will be conducive to

successful transplant of technology transfer. As argued by Baranson, "successful transplants of technology depend as much upon willingness and ability to transfer technical knowledge and skills as upon the absorptive capabilities of recipients" (Baranson 1970, p.435). Baranson's argument seems to match the list of conditions of successful technology transfer as put forward by Singh (1983) above. Furthermore Kedia and Bhagat also argue that "effectiveness of transfer depends to a large extent on a type of characteristics of the technology involved" (Bhagat 1988, p.562). In the Japanese case, Hieneman et.al suggest that "in order to insure the successful transfer of technology, local personnel must be given the opportunity to acquire knowledge and skills" (Hieneman et al. 1985, p.151). The acquisition of such knowledge and skills occurs through what the Japanese called as 'skill formation' process. The type of knowledge and skills acquired through this skill formation process is varied and includes technical, operative and managerial skills (Kaplinski 1982, pp.49-50 and Lall and Mohammad 1983, p.147).

As is discussed in the next section, Japanese skill formation is achieved through various types of job training. This method of skill formation is made possible through the Japanese corporate culture, whether operating inside or outside Japan, placing a strong commitment on skill training for employees' skill (Heinemen 1983).

3.8 Skills Transfer and Training

The core element of the skill formation is training, because training has been regarded as one of the most

important vehicles in developing or forming skills (Koike, 1981). This notion suggests that there is a correlation between training and technology transfer, in providing or developing skills to local employees. Such a correlation has been established by a study undertaken by Parpia (1974) on the transfer and adaptation of Western methods in agricultural processing. Parpia argued that "any transfer of technology can only succeed when a number of other vital requirements connected with its exploitation can be fully met. These are competence in management, efficient credit and finance utilization, marketing and training" (Parpia 1974, p.101). Parpia further argued that

"training is a vital factor in the technology transfer. Without the right type of trained personnel, no food processing operation can succeed. Well-integrated training is required in specialized fields such as agriculture, post-harvest handling, transport, processing, marketing and distribution" (Parpia, 1974, p.101).

The type of training modes employed as part of efforts to instill the required skills, and the type of skills or knowledge transferred as a result of technology transfer, vary. Hall and Johnson (1970, pp.305-53) divided the technology transfer into two forms. The first form embraces physical items (such as patents, specifications, process information, drawings, blueprints, tools, machinery, and equipment). The second form embraces skill and knowledge transmitted or transferred through human contact. It is in this second form of technology transfer that both skills and knowledge are transferred. The mechanism which the second form of technology transfer occurs is the MNC itself. This makes the MNC an important agent of technology transfer. The importance of the MNC in

this aspect has been widely acknowledged by making researchers including Singh (1983), Teece (1981), Maxon (1979), Glynn (1986), Magdoff (1975), Kojima (1986), and Johnson (1972). Singh (1983,p.43) for instance argues that MNC is the most important agent in transferring technology. Teece also argues that the "multinational firm is clearly one of the most significant organizational linkage between LDCs and external technological and managerial know-how" (Teece 1981, p.60).

The way in which MNCs transfer skills and knowledge (or technology) is through direct foreign investment (DFI). Kojima's thesis on Japanese style of direct foreign investment, for example, points out that DFI represents "as the transmission of management resources in a package of capital,management ability and technical expertise" (Kojima 1986, pp.58-59). Kojima (1986, p.58) further argues that included in the managerial resources

"are organizations that exhibit various capabilities in the process of corporate management,consisting outwardly out of the nucleus of managers but encompassing, in a wider sense,managerial knowledge and experience, technical and professional knowledge including patent, technical know-how, and marketing techniques, market positions in regard to sales, materials procurement, and capital raising, trademarks and goodwill, and organization for information gathering and research and development" (Kojima 1986, p.58).

This kind of argument was also expressed earlier by Johnson (1972) and Kojima (1975) when they debated issues of DFI. Johnson pointed out that DFI is "the transmission to the 'host' country of a 'package' of capital, managerial skill and technical knowledge" (Johnson 1972, p.2). Furthermore Kojima assumed a

parallel argument by saying that

"the main role of foreign direct investment is to transplant superior production technology through training of labour, management and marketing, from the industrial country to lesser developed countries, or, in brief it is the transfer of superior production functions which replace inferior ones in the host country. The direct foreign investment gradually has an effect over that specific industry in the host country through training of laborers, engineers and makes the establishments of competitive firms by local capital possible, and ultimately improve the production functions of that specific industry in general. This is a role of direct foreign investment as a tutor" (Kojima 1975, p.6).

The above arguments support the contention that the presence and operation of MNCs through DFI, is instrumental in accommodating not only the transfer of skills but also know-how and other professional knowledge to the host country. A question that can be raised in relation to the presence and operation of MNCs is whether the skill brought in by MNCs contribute to the formation of skills in the host country. As this research is concerned solely with Japanese MNCs in Indonesia, the question that should be posed is whether Japanese MNCs provide and contribute to the formation of skill of the Indonesian population (i.e. the employees).

Kosenko and Samli regard that "training personnel in order to make the transfer of technology effective is a necessary condition for the total process of transferring technology" (Kosenko and Samli 1985, p.128). In the Japanese case, the training of personnel comes not only from the needs of the company, but also derives from the idea of respect for people (Kono 1984/84, p.181). This has been made possible because of the strong commitment and philosophy of Japanese business to the continuous

improvement and development of employees' skills and potential as embedded in the Japanese human resources or personnel management system. This commitment and philosophy as well as its management system are reflected, among other things, in the industrial relations and employment system of Japanese firms. This is in contrast with US and European companies which tend to think that necessary human resources can be brought from outside by money (Kono 1984/84).

In the Japanese case, training has been one of the most important of successful ingredients in the Japanese technology transfer process. Training itself has also been used by "the Japanese-type corporation to develop the employee's sense of belonging" (Hattori 1986, p.318). This sense of belonging in turn becomes an essential barometer of Japanese employees' retention or termination in the company. Training, as a way of developing employees' sense of belonging, has also been largely responsible for lowering the rate of of voluntary employee termination in the Japanese firms. 'People tend to believe that a low rate of voluntary employee termination is necessary for the Japanese technology to take root' (Hattori 1986, p.318). How Japanese technology takes root with respect to the relationship between training and technology transfer is explained in Hattori's model of the Japanese 'Spiral of Technology Transfer' as shown in FIGURE 10.

Hattori's model illustrates what is most necessary for absorbing technology from Japan. It suggests that in the technology process, training has been crucial to improving the level of an employee 's technical skill. Only

FIGURE 10

SPIRAL OF TECHNOLOGY TRANSFER

Please see print copy for image



Source: T. Hattori (1986) "Technology Transfer and Management Systems". Figure 3, p.319.

when the employee's skills are improved can the company can improve its performance. Hattori summarizes that

"when technology is transferred between and in corporations, and the base for that transfer is formed by adequately training employees who have strong feelings of belonging to the company, the transfer will be smooth, and, most likely, efficient.....If the efficiency of technology transfer in both between- and in- corporation aspects successfully continues, the corporation's technical level improves. That is natural because technology transfer is for improving technical levels" (Hattori 1986, p.319).

The importance of training placed in technology transfer suggests the significance of skills transfer in the successful transfer of technology. The skills on which an economy or company depends are largely created by the process of education and training (Greenhalgh and Stewart 1987, p.171).

Lassarre's study (1982) of various cases of technology transfer involving European chemical and pharmaceutical companies in the Asian region illustrates how training was provided in various types of agreement in the technology transfer process Lassarre found that formal training activities either in-house or outside, are more for managers and engineers while lower level employees get more on-the-job training. Wholly owned subsidiaries tend to give more general training, especially for managers while licensing agreements will tend to provide more specific on-the-job training. Further detail of Lassarre's study is shown in TABLE 9.

The importance of training in skill transfer is supported by a proposition put forward by Phillippe Lassarre of INSEAD (1982, p.51) which argues that training is the key to technological transfer. He further observes

TABLE 2

CASES DATA CONCERNING TRAINING

Questions	Answers	Turn key plant	Distribution of answers By type of agreement			By type of technology	
			Licences	Joint ventures	100% subsidiaries	Upstream	Downstream
What kind of training is given to managers and engineers?	None	-	-	2	-	-	2
	On the job	-	5	3	-	3	5
	Formal	1	1	15	6	10	13
	Total	1	6	20	6	13	20
What kind of training is given to lower level employees?	None	-	-	4	1	-	5
	On the job	1	6	11	4	10	12
	Formal	-	-	5	1	3	3
	Total	1	6	20	6	13	20
Is there a particular training concerning the proprietary technology?	Yes	1	6	9	-	7	9
	No	-	-	11	6	6	11
	-	-	-	-	-	-	-
	Total	1	6	20	6	13	20
Is there a particular training concerning the start up of the operation?	Yes	1	5	12	3	9	12
	No	-	1	5	2	1	7
	-	-	-	-	-	-	-
	(4 no ans.)	1	6	17	5	10	19

SOURCE: P. Lasserre (1982) "Training : Key to Technological Transfer ", Table 2, p.57

that training activities are crucial to the successful transfer of technology. Technology transfer, he further observes, involves learning, and learning can be improved by appropriate training methods. Lasserre leads to the argument that without training programs, the success of technology transfer can be questionable, because, as Spielman (1981, pp.79-80) argues, formal training programs are one aspect of the overall process of transfer of technology", and the programs "represent a methodology by which to communicate required changes in skills, knowledge, attitudes and behavior to meet project goals" (Spielman 1981, pp.79-80).

It should be noted here, however, that although skills transfer is important in technology transfer, it "is an area where misunderstanding is easy and communication is difficult, especially in cross-cultural situations" (Wright and Russel 1987, p.78). Because of this, where misunderstanding and sever conflict can occur, the skills transfer question tends to be put aside with only superficial treatment at the time of contract negotiations (Wright and Russel 1987).

The inclusion of training in the technology transfer debates stems from the above arguments, which suggested that training can accommodate the skills transfer and formation of skills of the host country's employees through the technology transfer process. A proposition put forward here is that the success of skill formation among host country's employees can be seen as an index of the success of the training and skills transfer which is in turn an success index of technology transfer. Robinson and Robinson

(1985, pp.82-83) set out what barriers or 'enhancers' will affect skill transfer (see TABLE 10).

Table 10 indicates that barriers to skill transfer fall into three categories: those the learner brings to the situation; those created by the learner's direct superior; and those the organization contains.

The definition of skill is taken to mean the ability of a business (person/employee) to perform various functional tasks such as manufacturing, R&D, marketing, distribution, and administration (Chrisman and Boulton 1987, pp. 12-13). Skill formation is defined as the skilling and development of human potentials and embrace education, learning, training (on-the-job and off-the-job), experience and personal development (Ford, 1986B, p. 32). Skill formation is essentially achieved through training and job rotation. Training is defined as "anything which may have helped an individual to learn to do his or her work" (Greenhalgh and Stewart 1987, pp.171-72), and others have defined training as "a systematic process aimed at skills development or improvement intended to meet specific task and organizational need" (Allen and McGowen, 1986, p.31). Job rotation is regarded as a movement of trainees (workers) from one job to another, for variety of job assignments represents one important part of training program. Spielman (1981, p.80) points out that in addition to formal training programs, technology transfer also takes place in other ways, such as: (1) through an organized counterpart system whereby local nationals are teamed up with foreign specialists, or through the placing of host country candidates in assistant positions with a planned

TABLE 10

WORK ENVIRONMENT BARRIERS TO SKILL TRANSFER

	Work Environment Barriers to Skill Transfer
<u>Category 1:</u> The Learner	<p><i>Values and Concepts of Programs</i></p> <ol style="list-style-type: none"> 1. The learners feel that the values and concepts being taught in the program are contrary to their personal values and their concepts of how the job should be performed. <p><i>Level of confidence</i></p> <ol style="list-style-type: none"> 2. The learners do not feel confident in their ability to successfully use the skills/behaviours on the job.
<u>Category 2:</u> The Boss of the Learner	<p><i>As Coaches and Counsellors</i></p> <ol style="list-style-type: none"> 1. Bosses do not coach learners on how to use the skills in specific on-the-job situations, even when learners come to their managers for advise <p><i>As Reinforcement</i></p> <ol style="list-style-type: none"> 2. Bosses do not provide reinforcement to learners when there is evidence that they have used skills.
	<p><i>As Models</i></p> <ol style="list-style-type: none"> 3. Bosses are not perceived as using and/or supporting the use of skills absorbed by the learner in training.
<u>Category 3:</u> The Organization	<p><i>Balance of Consequences</i></p> <ol style="list-style-type: none"> 1. The use of the skills by learners has a punishing effect on them and/or is a very low priority. <p><i>Task Interference</i></p> <ol style="list-style-type: none"> 2. Many barriers, including lack of time, physical environment, procedures and policies, and lack of authority inhibit learners as they attempt to use the skills. <p><i>Organizational Feedback</i></p> <ol style="list-style-type: none"> 3. The learners do not receive feedback about how their efforts impact upon results at a unit department or organizational level.
<p align="center">Generally determined after a program has been conducted, not before</p>	

Source: D. G. Robinson and J. C. Robinson (1985), Table 1, p. 83

transfer of responsibility from the consultant contractor to the local national; (2) through the active participation by local nationals in the direct management of the project; (3) through visits by local nationals to operating sites similar to that being installed; (4) by establishing special inter-disciplinary task forces charged with specific responsibilities and made up of foreign specialists and local nationals, particularly those who will become future managers of the installation; (5) through individual reading programs, including project reports and documents produced by the contractor; (6) through briefing and presentations to clients, explaining project methodology as well as feed-back received from the client; and (7) through discussions by local nationals with potential equipment suppliers. Looking at these mediums of skill transfer, it can be said that

"the term 'transfer of technology' includes all sources and methods by which the host country or client organization gains skills, knowledge and confidence to prepare it to successfully operate the project on an on-going basis. Transfer of technology can take place in situations that are not controlled and do not necessarily fall within a formal training plan" (Spielman 1981, p.80).

In reviewing the literature there has been no list of types of skills transferred through the process of technology transfer, except for the mention of importance of the skills transfer and training as being important for to successful technology transfer. It can be argued, however, that the types of skills transferred depend upon at least three factors: (1) the type of foreign investment; (2) the type of the technology transferred; and (3) the

position in which tasks are assigned. It is believed indirect foreign investment will have the least (or no skills) transfer compared to other mechanisms such as direct foreign investment, joint ventures and licensing.

A study by Mansour (1981, pp.6-7) describes the type of technology (skill / knowledge) needed as a result of technology transfer. FIGURE 11 from by Mansour suggests an adaptation in the life cycle stages of a project involving technology transfer. Mansour argues that the intensity of need, and the type of technology needed, will differ greatly over the project's life cycle. The various forms of technology needed by a recipient are shown in the middle column of Figure 11. To summarize, this may be technical (involving knowledge about products or processes) or managerial (involving knowledge about organization, motivation, and administration). In addition, technology may be embodied or disembodied. Embodied technology will usually involve technical information, through certain computer systems now have highly sophisticated finance or accounting software incorporated into hardware. Thus the distinction between embodied and disembodied technology, according to Mansour, may be somewhat artificial, and is becoming more so. As discussed above technology transfer may occur (1) by sending the products from one country to another; (2) by sending the plans for the product or process; or (3) by sending people to train and transmit ideas to people in the recipient enterprise and the nation (Mansour 1981). Mansour argues that "most successful transfer of technology will involve two or three these channels" (Mansour 1981, p.6).

FIGURE 11

Schema of Technology Transfer: Stages of Project and Types and Sources of Technology

Stages of a Project	Types of Technology Needed	Potential Sources of Technology
Feasibility Study	Technical Knowledge and Data About: Products Processes	Direct Investment by Foreign Firm
Plant Design, Construction and Outfitting	Equipment, Machinery or Components Embodying Technology	Licensing of Patents. Trademarks or Know-how from a foreign Firm
Product or Process Development	Managerial Know-how for Production System Personnel System Marketing System Finance and Control System External Environment	Imports of Capital Equipment or Embodied Technology in Components
Development of Productions and Managerial Systems		Turnkey Projects
Management of On-going Enterprise	General Integration of Managerial Decision-making and Planning	International Consulting and Engineering Firms Research Institutes
Termination or Transformation		Governmental, Intergovernmental and International Organizations Educational Institutions Trade Shows Supply Firms Volunteer Organizations

Source: M B. Mansour (1981) 'Defitional Issues in Technology Transfer'.

Figure 1, p.7.

Kaplinsky (1982) in his research into technology transfer in the microelectronics industry, focused on the skill implication for the introduction of new microelectronics-based technology which involved radically different work practices from that previously involved. The technology referred to is computer aided design (CAD) and relates to the dual activities of design and draughting. He divided the skills transferred into two: the operator skills (skills required to operate CAD system; and management skills (skills required by managers - as opposed to operator skills - of the CAD system).

Lall and Mohammad's research (1983) on multinationals in Indian big business found difficulties in measuring the levels of managerial and other skills in an inter-industry comparative study. In their study, they appear to have concentrated on managerial and organizational skills and production and technical skills. Other researchers have dealt with skills such as technical knowledge which include engineering aspects of production, economic and organizational aspects of the firm's operation, including management and marketing (Svennilson 1964, p.407), technical and operative skills such as clerical (Rajan 1987, pp.61-66 and Fujimori 1986), and management or managerial skills (Gershenberg 1983).

As argued above, the types of skills transferred through technology transfer vary, but the question is how those skills are formed, particularly with regard to Japanese firms.

3.9 Japanese Skill Formation

The concept of skill formation is a relatively a new

phenomenon in the study of business management and industrial democracy. The concept of skill formation probably originally initiated in (formerly West) Germany and was developed in Japan (Ford 1985, pp. 1-19, Ford 1986a and Ford 1986b, p. 32). It started when the world's business and academic communities began to study the reasons behind the continuous economic and technological success of the Japanese. The general concept of skill formation according to Ford is a

"continuous and holistic concept of human development and includes the narrower and more traditional concept of education, training (on-the-job and off-the-job), learning, experience and personal development" (Ford 1986b, p.32).

This concept is broad and covers all aspects of the skilling and development of human potentials. Ford further elaborates that

"in practice, skill formation means the fusion or intergration of workplace activities to ensure continuous on-the-job training; that is, skill formation is closely to work organisation and employee participation. The development of learning-based work organization and employee participation is critical to skill formation (Ford 1986b, p.32).

Therefore, the concept of skill formation is different from the Western tradition concept of vocational training. It suggests that, although the main tenet of the skill formation concept and practice of skill formation are part of management system values of its culture, the relationship of these two components (management system and cultural values) to skill formation has distinguished the Japanese way of forming the employees' skill from other models or concepts of skill formation. Such relationship

has made it difficult for other countries to adopt and practise the Japanese management system (skill formation concept) in its entirety.

The elements of the Japanese system of management are best outlined by Leibenstein (1984, pp. 332-335) as indicated in FIGURE 12. Leibenstein's outline contains 12 different elements of the Japanese system of management. Those elements are constructed on the basis of Rodney Clark's work (1979) published in **The Japanese Company**, and those elements were then contrasted with the characteristics of the western system of management as practiced in the United States and the United Kingdom. Meanwhile, Fukuda's study (1987) on 'The Practice of Japanese-Style Management in South East Asia' illustrates the components of the Japanese system of management as practiced in Asian countries and basically confirms both Leibenstein and Clark's work.

Fukuda's study (1987, p.69) suggests that the most important features of Japanese management typically found in large companies include:

- "a.Group-oriented systems where the individual is indentured, body and soul, and therefore conditioned to be loyal to the group.
 - b.Elaborate systems of decision-making by consensus which involve lower-level workers and give a particularly important role to middle-management.
 - c.Life-time employment system where employees are guaranteed a job until retirement.
 - d.Comprehensive welfare programs for all employees which incorporate housing, recreational facilities, holiday hotels, and so on.
 - e.In-company training (by job rotation) conducted on a massive scale and continuing late into the worker's career, which tends to produce generalists rather than specialists.
 - f.Senior-based remuneration and promotion systems which give a high degree of respect to age and rank rather than ability" (Fukuda 1987, p69).
- Fukuda notes in his study that the Japanese firms or

FIGURE 12

THE ELEMENTS OF THE JAPANESE AND THE WESTERN SYSTEM OF MANAGEMENT

Japan	The West
1. Lifetime employment ideal	No lifetime employment ideal.
2. Firm recruits people of particular age and education.	People recruited with particular skills (and/or experience) to fill specific jobs.
3. Company as a community.	Less emphasis on community ideal
4. No sharp distinction between managers and workers.	Sharp distinctions.
5. Strong emphasis on general hierarchical ranks.	Management positions not standardized-related to function.
6. Age and service length explicitly recognized as a promotion criteria.	Age and length of service only marginally relevant to promotion.
7. Authority and responsibility diffuse.	Authority and responsibility ostensibly specific.
8. Managerial authority limited by internal labor mobility.	Managerial authority challenged practically by trade unions.
9. Enterprise unions.	Trade unions.
10. On-the-job training for a variety of jobs.	On-the-job training for specific jobs.
11. Job rotation and boundary flexibility.	Focus on specific job with specific boundaries.
12. Emphasis on cooperation, harmony, and consensus.	Greater stress on individualistic behaviour within bounds of narrow job commitment.

Source : H. Leibenstein (1984) " The Japanese Management System, An X-Efficiency Game Theory Analysis " p.332.

organizations display these features of management system "in varying degrees and no one organization contains each and every characteristic in pure form" (Fukuda, 1987, pp.69-70).

Meanwhile, the core values of the Japanese culture according to Fukuda are:

"'Amae' (Dependence) - a feeling of dependence, which is not a pejorative term but a state of mind that describe a desire to be passively loved, a desire to be protected from the world of objective reality.

'On' (Duty) - obligations passively incurred. One received an "On"; one wears an 'On'. An 'On' is an obligation from the point of view of the passive recipient.

'Giri' (Obligation) - a bond of moral obligation and debt that must be repaid.

'Giri' is mutual and reciprocal, especially within a collectivity.

'Ninjo' (Feeling) - human feelings which spontaneously occur and include all the natural human impulses and inclinations" (Fukuda 1987, p.70).

The core feature of the Japanese training system (which is part of skill formation) as practised in Japanese firms is 'job rotation', that is, a movement of trainees (workers) from job to job for a variety of job assignments. This practice is given to trainees "to gain experience not only within a specific work sites but also at related work sites as well" (Koike 1981, p.26). Koike further said that "these movements from job to job may seem to have little to do with formal training, but in fact, they form the true nucleus of Japanese skill formation" (Koike 1981, p.26). Another Japanese author, Fujimori (1986,p.356) argues that job rotation is seen as "the Japanese way of forming skills". The same argument is also offered by Washito (1986, pp.330-31) who adds that quality control (QC) circles and the development of production know-how in the

firms's factory are part of skill formation.

The Japanese methods of skill formation has played an important role in assisting Japanese economic growth (Koike 1981) and most writers point to "training" as instrumental in developing the skill of the Japanese employees. Kono in a study of strategy and structure of Japanese enterprise suggests that "the need for training comes from the idea of respect for people" (Kono 1984-85, p.181). In fact "in the way of training" as argued by Fujimori "is essential factor of technology transfer" (Fujimori 1986, p.357).

The training or methods of skill acquisition in the Japanese system as studied by Kono (1984-85) consists of two elements: functional technical skills; and human skills. Training is conducted through (i) on-the-job training (OJT), (ii) self development (SD), and (iii) off-the-job training (OFFJT). The OJT is the most emphasized element of the Japanese training modes and has become the essential feature of Japanese skill formation concept and it is carried out within the firm under the direct control of supervisors following planned instructions as set out by the firm's management along with the firm's management system framework. It should be kept in mind that that training is not only given to the new technical or factory floor employees but is also also available to the managerial position levels and is known as 'manager training'. The principles of 'manager training' are basically the same as the technical workers training principles and are aimed at improving and developing the ability and skill of a manager to be more equipped and relevant to the firm's strategy and management system in

order t to achieve the firm's goals.

The Japanese skill formation concept is unique in the sense that it is specific to the Japanese environment and it has proven to be instrumental in Japanese economic success. The concept cannot be separated from the Japanese management system and in fact it is this system that paves the way for the birth of the skill formation concepts. Many writers, apart from Fukuda (1987) as quoted earlier, such as Ichimura (1982), Kono (1984-85), Hattori (1986), Keys and Miller (1986) and Mito (1981) have pointed out that the key features of the Japanese management system are : (1) life time employment system (Kono, 1984-85, p. 179; Mito, 1981, p. 3; Keys and Miller, 1986, p. 42 and Hattori, 1986, p. 320); (2) a high sense of belonging; (3) a wide work area (Hattori, 1986, p. 320); (4) seniority-based wage plus bonus system; (5) firm-based labor unions; (6) **the Ringi system** (decision-making based on preliminary consultation with the staff (Ichimura, 1981, pp. 39-40); (7) strong group orientation (Mito, 1981, p. 3); (8) well designed long-term planning, (White and Trevor 1984, p.4); (9) a heavy emphasis on training, which continues throughout the worker's career; (10) an extremely wide range of welfare benefits (sometimes extended to housing, holidays, hospital care, marriage-broking service) (see Fukuda 1987, p.69); (11) a specially important and prestigious role given to the first-line supervisor; (12) a finely differentiated status structure, ranks or levels of seniority often being distinguished within a job-level; (13) a heavy reliance on qualifications both in recruitment and in promotion to higher posts, and (14) a degree of regimentation expressed

through customs such as 'physical education' sessions on the shop-floor, or the ubiquitous presence of slogan of encouragement. Most writers are in agreement in suggesting this fourteen-element Japanese management system as the most important ingredient of the Japanese system and that it reflects the Japanese way of life and culture. Some observers, as pointed out by Keys and Miller (1985), argue that 'human resource development' to be as another dimension of the Japanese management system and emphasize it to be crucial to Japanese management. Key and Miller state that

"some observers believe that excellence in Japanese management springs primarily from an emphasis on human resource development. Others maintain that the source of Japanese success is not found in social practices, but rather in the profound understanding of the intricacies of the decision making process. Several researchers laud the effective use of employee quality circles as the key element of Japanese success. Still others claim that Japanese expertise in technological developments and in manufacturing management is the basis of their effectiveness. Yet another school of thought attributes Japanese achievement to their mastery of the use of statistical control applications" (Keys and Miller 1984, p.342).

Meanwhile, Key and Miller have provided a model of the Japanese management system which shows a pattern of Japanese management practices against various underlying factors of those practices, as indicated in Figure 1 (see Chapter 2.2). The figure depicts a pattern of causality among underlying factors of a long-run planning horizon, a commitment to life-long employment, and collective responsibility, which are regarded as the characters of the Japanese management system.

The features and reasons presented to find the basis

of the success of the Japanese are not the most important question that need to be addressed here. The reasons put forward are found to be not contradictory to each other and are in fact complementary in justifying how each individual element contributes to the success of the Japanese management system in bringing about the Japanese economic and technological miracle. What is important here is to question whether the Japanese skill formation model together with its management system can be transferred to and applied in recipient countries such as Indonesia and, if they are, whether that transfer brings about the same success as experienced by Japanese organisations and employees elsewhere.

3.10 Managerial Skills

Skill transfer, particularly managerial skills, has been an essential part in Japanese technology transfer. In fact, one of the most important characteristics of Japanese technology transfer is the attachment or association of the technology transferred to the Japanese system of management, as strongly argued by Komoda (1986), Kojima (1978), and Ford (1985, 1986A and 1986B). Komoda for instance clearly states that

"Japanese technology transfer is closely wedded to particular Japanese managerial skills and know-how that can be transferred through human contact. The managerial skills aspect is particularly important in the case of Japanese technology transfer" (Komoda 1986, p.412).

This statement suggests that the importance of human contact and managerial in the transfer of technology. This importance, according to Komoda (1986), has generally been accepted in all countries. The reason why it is singled out for comment by Japanese students of the subject is because

Japanese technology transfer is closely wedded to particular Japanese managerial skills and know-how that can be transferred through human contact. Hikoji Katono's (1976) research on the transfer of textile technology in Thailand as quoted by Komoda (1986), for instance pointed to the importance of the transfer not only of production technology but also managerial skills in the rooting of new technology in the local society. Komoda stresses that "the managerial skills aspect is particular important in the case of the Japanese technology transfer" (Komoda 1986, p.412).

The importance of managerial skills in the technology transfer process has led us to examine the importance of developing managerial capability and potential and in the formation of the managerial skills. Brook and Holly maintain "an underlying assumption is that the development of managerial capability is a vital factor in successful technology transfer" (Brook and Holly 1981, p.300).

In all economic systems, management know-how has been widely regarded as a primary active ingredient in the production process (Gershenberg 1983). In relation to technology transfer, some of the crucial issues are the role of multinational corporations in transferring managerial skills to local nationals and how that transfer process is done, and what are the features of these managerial skills.

Gershenberg (1983) presents two rather opposing views regarding the role of MNCs in the transfer of managerial skills. On the one hand it is argued that MNCs are concerned with maintaining close control over the

operations of their far-flung subsidiaries, especially in countries in which they have limited experience. Therefore, at minimum, foreign investor firms will always seek to retain an expatriate representative from headquarters in top level positions such as managing director, finance manager or plant manager. As a result, there are bound to be limited indigenous managerial responsibilities. On the other hand, some research suggests that the cost of maintaining expatriate managers abroad serves as an appreciable drain on the resources of the firm, and that expatriate managers often do not comprehend local nuances and thus cannot deal effectively with local politicians and workers. As a result, it is in the interest of MNCs to develop a cadre of local managers. When this interest is appreciated then the process of managerial skills transfer, such as through training, can take place.

In the case of the Japanese MNCs, management training is carried out through the process of skill formation discussed in a section above. Basically, according to Kono "manager training consists mostly of off-the-job training in the company's training centers and its purpose is to improve conceptual skills and human skills" (Kono 1984/85, p.182). A study by the ILO (1973, pp.58-62) declares that the nature of management training and development provided by MNCs in subsidiaries may depend upon one or more the following factors. **First**, the size of the subsidiary may influence the costs and benefits of organizing management training in the host country as compared with sending members of the staff for training in the country of the parent company. A **second** factor is the strategy of the

parent company, as reflected in the degree of decentralization in its decision making. The more centralized the company's strategy is, the more the emphasis is likely to be on developing managers for subsidiaries to implement rather than to make policy. A third factor is the level of technology employed by the subsidiary. A fourth factor is the availability of local talent. These considerations, amongst others, will condition the range and depth of management training offered to those employed by a multinational corporation in its subsidiaries. The same ILO study (1973) maintains that most MNCs appear to be aware of the need for continuous training at all levels, and their example has often stimulated management thinking in host countries. The practices of these corporations have frequently been held up as models for other businesses to follow.

The type of skills needed by managers as part of the managerial skills transfer / training process are many. Kono (1984/85) mentions two skills, conceptual skills and human skills. Osmond (1971/72, pp.12-13) states that skills of top management most frequently emphasized (in approximate order) are (1) balancing, (2) integrating (both 1 and 2 include resources, time, goals and skills), (3) setting priorities, (4) setting and developing standards, (5) conceptualizing, (6) leading, (7) matching oneself to one's job, and (8) delegating; or risking oneself. These terms have often a portmanteau quality for the general reader, if not for the manager, with specific problems or priorities in mind. In an effort to relate these to each other, and to the rest of a somewhat arbitrary general list

of top-level skills, they have been grouped in FIGURE 13 and FIGURE 14.

In this study the management skill is divided into three components, i.e., Japanese specific managerial skills, professional or functional skills and general managerial skills which consist of conceptual skill, human skill and technical skill, as suggested by Guglielmino (1979, pp. 12-15), Katz (1974 and 1971), and Hellriegel and Slocum (1978).

(1) Japanese specific managerial skills:

Japanese specific managerial skills are associated with the application of various elements of the Japanese system of management. The application of the system has brought with it the skills, knowledge and expertise that are required to utilise the system. As a consequence of this, managerial staff and employee of the company have to understand the concept of the system employees, work according to that system, and acquire the necessary skills to make the system used in the subsidiary company operate effectively and productively.

The responsibility for the effective and productive application of the system is very much in the hands of the company's executives, directors, and managers. These people are therefore required to be able to understand the whole concept of the system and to implement them as outlined in the company's policy, strategy and philosophy as well as long-term goals.

To understand the concept and acquire the skills of the Japanese system of management requires an examination of management practices in the company. The

FIGURE 13
THE SKILLS OF TOP MANAGEMENT: GROUPED BY KEY FACTORS (THE CHIEF EXECUTIVE'S ROLE AND OTHER TOP-LEVEL ROLES)

Chiefly dependent upon	Own perception and knowledge	Own understanding and confidence	Own attitudes and situation
<i>Purposes of these skills:</i>	Clarifying goals, choices, process and boundaries. Distinguishing and developing resources and organising varied goals, resources and people for integrated business development.	Managing and developing the business, its situation and its employees, including oneself and one's situation. Achieving corporate performance and results	Accepting and exercising one's role and accountability. Leading, representing and communicating the organization within its situation. Leading and motivating its members. Developing oneself and others.
<i>Skills</i>	<p>The future</p> <p>Conceptualizing Analysing Structuring Measuring Comprehending</p> <p>Complexity Uncertainty Risk Pluralism Power, conflict, etc.</p> <p>Assessing interdependence, tec. Identifying opportunities. Offsetting risks, uncertainties</p> <p>Differentiating Balancing Integrating</p> <p>Risks, purposes Resources, time People, knowledge Skills, attitudes</p> <p>(eg. Operations ___ development, Profitability ___ flexibility Efficiency ___ opportunism)</p>	<p>Setting appropriate standards. Forecasting. Setting priorities. Delegating. Organising. Supporting Coordinating. Taking risks. Concentration on priorities. Directing, advising, assisting. Seizing opportunities. Judging performance and results. Develop- ing standards, priorities, organization and goals.</p> <p>Managing oneself, time, power, colleagues people, abilities, resources, situations</p>	<p>Accepting one's accountability. Tolerating one's isolation. Leading colleagues and employees. Integrating one's efforts with others. Representing the company. Taking advice from board and top-level colleagues. Motivating and educating individuals and groups. Communicating purposes, plans, results. Keeping lines of information open. Evoking effort, ideas, risk-taking. Forecast- ing talent and resources. Trusting individuals groups. Sharing power, taking risks. Match- ing oneself to one's developing tasks and situation.</p>

Source : N. Osmon (1971/72) 'Top Management : Its Tasks, Roles, and Skills " Appendix 5, p.19.

FIGURE 14

THE ROLE OF THE CHIEF EXECUTIVE : ACTIVITIES AND SKILLS

Role	Planning	Organizing - deciding	Overseeing - controlling	Leading	Setting standards	Developing
1) General Manager	B	B (A In emergency)	A	B (A In emergency)	A/B	A/B
2) Business Manager	A/B	A/B	B/C	B/C	A/B	A
3) Resources Manager	A	B	A/B	B/C	A	A/B
4) Personnel and Organisation Development Manager	A/B	A/B	B/C	A/B	B	A
5) Integrator (operations and present-future)	B/C	A/B	C	B	A	B/C
6) Leader: Internal	C	B/C	B/C	A	A	B
7) Leader: External	C	C	C	A	A	B/C
(Total weighting, all roles)	(27)	(29)	(24)	(32)	(38)	(32)

Weightings

A = Predominant (6)

B = Considerable (4)

C = Some (2)

Role	Distinctive Decisions	Distinctive Skills
1) General Manager	Delegation v. Control. Setting Standards. Recommending Goals. Fixing Priorities. Means of Securing Standards	Coordination. Standards Setting. Inspection. Encouragement.
2) Business Manager	Risking. Forecasting. Developing. Amending Plans	Entrepreneurship. Technical/Marketing Standards and Integration
3) Resources Manager	Asset Deployment. Asset Mix/Return. Asset Control	Planning. Resource Procurement/Allocation Standards. Alternatives. Negotiation.
4) Personnel and Organisation Development Manager	Personal Performance/Potential. Degree of Delegation. Future Organisation Structure	Encouragement. Development. Estimates of Future Skills. Building up Alternatives
5) Integrator (operations, and present-future)	When to intervene. Trading-Off Costs/Benefits	Conceptualizing. Educating. Standards Setting plus Integrating. Risk Calculation plus Balancing.
6) Leader: Internal	What and When to Communicate. Standards for Communication. When to Arbitrate. Control	Conceptualizing. Educating. Explaining Standards. Personal Example. Representation to Board
7) Leader: External	How to Represent Company. What and How to Communicate. Leadership v. Commercial Opportunism.	Conceptualizing. Educating. Setting and Communicating Standards. Balancing own External Roles. (Representative, Exemplar, Negotiator, etc.)

Notes

a) These weightings and listings are notional, fairly arbitrary, and certainly not exhaustive. They do, however, illustrate how the common skills apply to each role; how some of them overlap significantly; and how specific and distinctive skills and decisions will be called for (and further developed) when a particular role is exercised or emphasised. This has implications for the CEO, and for his choice of members of any top-level team.

b) If we attach an equal importance to each role, the table places greatest importance and emphasis upon setting standards and least upon oversight and control.

Source: N. Osmond (1971/72) " Top Management: Its Tasks, Roles and Skills ".

Journal of Business Policy, 2(2) Appendix 3, p.19. Winter 1971/72.

formation of employees skills is mostly done through various modes of training such as through on-the-job training, that is, training done in the employee's work place in the company, off-the-job training, that is, training done outside of the company, and job rotation. Job rotation, that is, moving from one job place to another, is one of the most important elements of the on-the-job training program and is generally given to technical workers in the company's plant, clerical or administrative worker in the office, and in some cases managerial staff.

(2) Professional or functional managerial skills:

Professional or functional managerial skills are those skills associated and related with the profession of, and various functions given and undertaken, of a manager or director in an institution or a company. Professional or functional managerial skills include the skills which managers or directors could gain during employment with any company. In practical terms, functional skills are those skills that are related to a manager's position and responsibility in a company, such as in marketing, accounting, administration, personnel management, finance, export or import. The extent of any one manager's acquisition of these professional or functional skills depend to some extent upon his or her responsibility, the authority given to them as well as their own background.

(3) General managerial skills

Managerial or management skill is defined here as knowledge or skill about the coordination of all resources through the processes of the management function (such as planning, organizing, leading, directing, executing and

controlling) in order to attain the stated objectives. Katz (1971, pp.55-64) points out that the three most important skills needed by all managers are technical, human and conceptual skills. The elements of general managerial skills are shown in FIGURE 15.

3.1 Conceptual skill:

Katz (1971, pp.57-58) points out that "conceptual skill involves the ability to see the enterprise as a whole, it includes recognizing how the various functions of the organization depend on one another, and how changes in any one part affect all the others; and it extends to visualizing the relationship of the individual business industry, the community, and the political, social, and economic forces of the nation as a whole" (Katz 1977, pp.57-58). Hellriegel and Slocum, Jr pointed out that the conceptual skills refer to developing such abilities as "(1) seeing the organization as a whole and its relationship to the external environment; (2) understanding how the parts and functions of the organization depend on one another and how changes in one part can affect all of the others; (3) knowing how to diagnose and assess different types of management problems; and (4) using models or frameworks for managing true-to-life management problems" (Hellriegel and Slocum, Jr. 1978, p.11).

Hellriegel and Slocum, Jr argued that the development of conceptual skills involved thinking in terms of the following "relative emphasis and priorities among conflicting objectives and criteria; relative tendencies and probabilities (rather than certainties); rough correlations and patterns among elements (rather than

FIGURE 15

ELEMENTS OF CONCEPTUAL, HUMAN AND TECHNICALSKILLS

Conceptual Skills					
	1	2	3	4	5
1. Mankind decisions under certain conditions.					
2. Identifying opportunities and innovating for the good of the whole organizations.	1	2	3	4	5
3. Understanding and monitoring the business environment, legal, political, economic, and competitive.	1	2	3	4	5
4. Structuring the organizations.	1	2	3	4	5
5. Planning the multinational corporation.	1	2	3	4	5
6. *Thinking as an entrepreneur.	1	2	3	4	5
7. Other					
Human Skills					
	1	2	3	4	5
8. Writing and speaking effectively.	1	2	3	4	5
9. Handling grievances and disturbances.	1	2	3	4	5
10. Leading and motivating others.	1	2	3	4	5
11. Negotiating.	1	2	3	4	5
12. Controlling change.	1	2	3	4	5
13. Analyzing one's attitudes, values, and needs.	1	2	3	4	5
14. Learning in a self-directed way.	1	2	3	4	5
15. Other					
Technical Skills					
	1	2	3	4	5
16. Understanding a balance sheet.	1	2	3	4	5
17. Using zero-based budgeting.	1	2	3	4	5
18. Writing a computer program.	1	2	3	4	5
19. Preparing a cost- benefit analysis.	1	2	3	4	5
20. Searching for information.	1	2	3	4	5
21. Planning a career for oneself.	1	2	3	4	5
22. Managing one's time and effort.	1	2	3	4	5
23. Other					
* Significant at .05 level Mid-level managers ---- Professors of management _____ Directors of training					

Source: P.J. Guglielmino (1979) "The Developing the Top Level Executives for the 1980's and Beyond". Training and Development Journal B3. (4) April 1979. p.13. Figure 2.

clear-cut cause-and-effect relationship)" (Hellriegel and Slocum, Jr. 1978, p.11). The elements of the conceptual skill are set out by Guglielmino (1979) as shown in Figure 15. It is argued that developing conceptual skill is often more difficult than the learning of concrete technical skills.

3.2 Human skill:

Human skills refer to the ability to lead, motivate, manage conflict, and build group effort. While technical skills emphasizes on working with 'things' (techniques or physical objects), human skills focus on working with people. Human skills are a vital part of the job of all managers, regardless of level (foreperson versus vice president) or function (production versus marketing). It is often argued that one of the major tasks of management is to make work productive and have the worker achieve, because organizations have only one true resource - people. Although managers are fond of saying that people are the greatest asset, we agree with the view that "the traditional approaches to managing of people do not focus on people as a resource, but as problems, procedures, and costs (Drucker 1973, p.308).

The elements of human skill can also be found in Figure 15. Human skill, according to Katz (1971, p.56) is the executive's ability to work effectively as a group member and to build cooperative effort within the team he or she leads. As technical skill is primarily concerned with "things" (processes or physical objects), so human skill is primarily concerned with working with people. This skill is demonstrated in the way the individual perceives

(and recognizes the perceptions of) his or her superiors, equals, and subordinates, and in the way he or she behaves subsequently. The person whose human skill is well-developed always aware of his other own attitudes, assumptions, and beliefs about other individuals and groups; he or she is able to see the usefulness and limitations of these feelings. By accepting the existence of viewpoints, perceptions, and beliefs which are different from his or her own, he or she is skillful in understanding what others really mean by their words and behaviours. He or she is equally skillful in communicating to others, in their own contexts, what he or she means by his or her behaviour.

3.3 Technical skill

Technical skills refer to developing an understanding of and ability to perform specific kinds of activities. These activities involve methods, procedures and techniques. It is probably easy to visualize the technical skills of design engineers, market researchers, and accountants. Of the three skills, technical skill is the most concrete and is most often emphasized in educational institutions and on-the-job training programs. Katz (1971) states that technical skill involves specialized knowledge, analytical ability within that specialty, and facility in the use of the tools and techniques of the specific discipline. A comprehensive list of technical skill components is indicated in Figure 15. Katz says that technical skill implies an understanding of, and proficiency in, a specific kind of activity, particularly one involving methods, processes, procedures, or

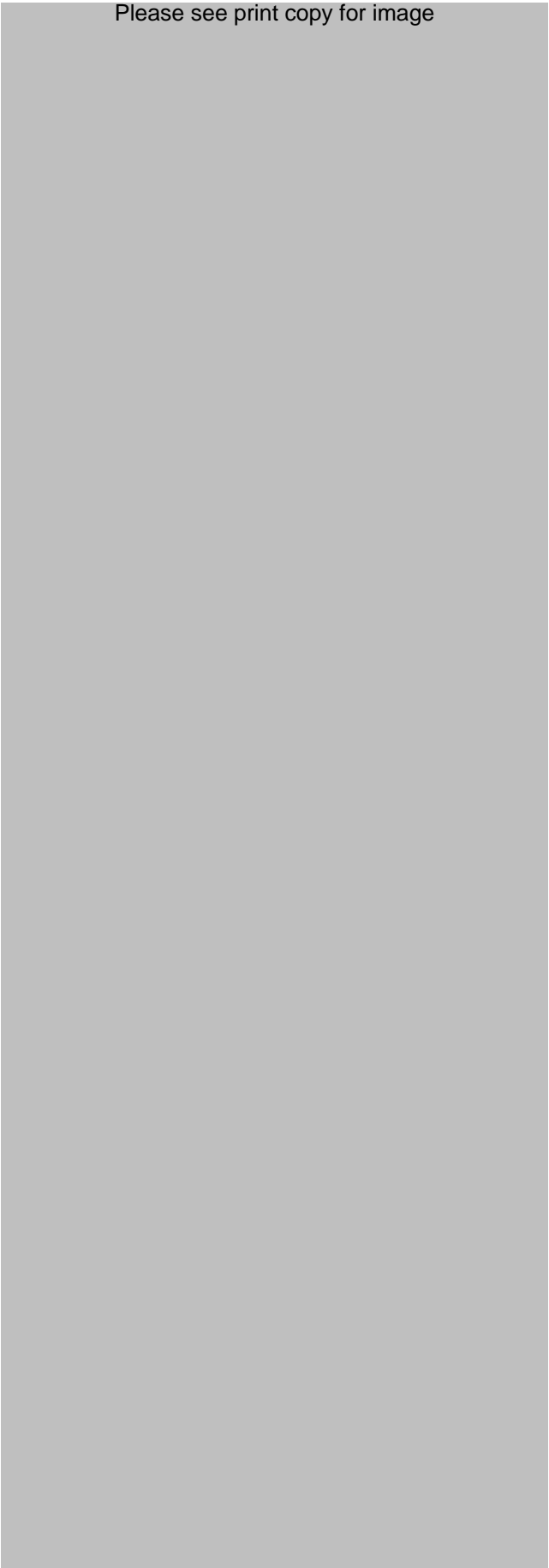
techniques. Technical skill can easily be visualized in terms of the skills that should be possessed by a surgeon, a musician, an accountant, or an engineer when they are performing their own special function.

The relative degree and mixture of skills needed by a particular manager will depend on the level of management and the types of responsibilities assigned. The mix of skills needed by a production foreperson is likely to be quite different from that needed by a coordinating group vice-president. The production foreman is likely to need relative high technical and human skills, whereas the group-vice president is likely to need relatively high conceptual and human skills.

How the concept of managerial skills in terms of conceptual, human and technical skills is required by various levels of manager, is illustrated in the model shown in FIGURE 16. This model shows the relative need for conceptual, human and technical skills at different managerial levels. The model indicates that lower-level managers need substantial technical skills, moderate amount of human skills and small amounts of conceptual skills. Middle-management people need substantial human skills, but only moderate amounts of technical and conceptual skills. Whereas high-management people need substantial conceptual skills, moderate amounts of human skills, and lesser amounts of technical skills. This argument is further confirmed by Guglielmino (1979) as suggested in FIGURE 17 (see also Figure 15). Figure 17 basically confirms Figure 16. Figure 15 provides detailed elements of the conceptual, human dan technical skills required by each

FIGURE 16

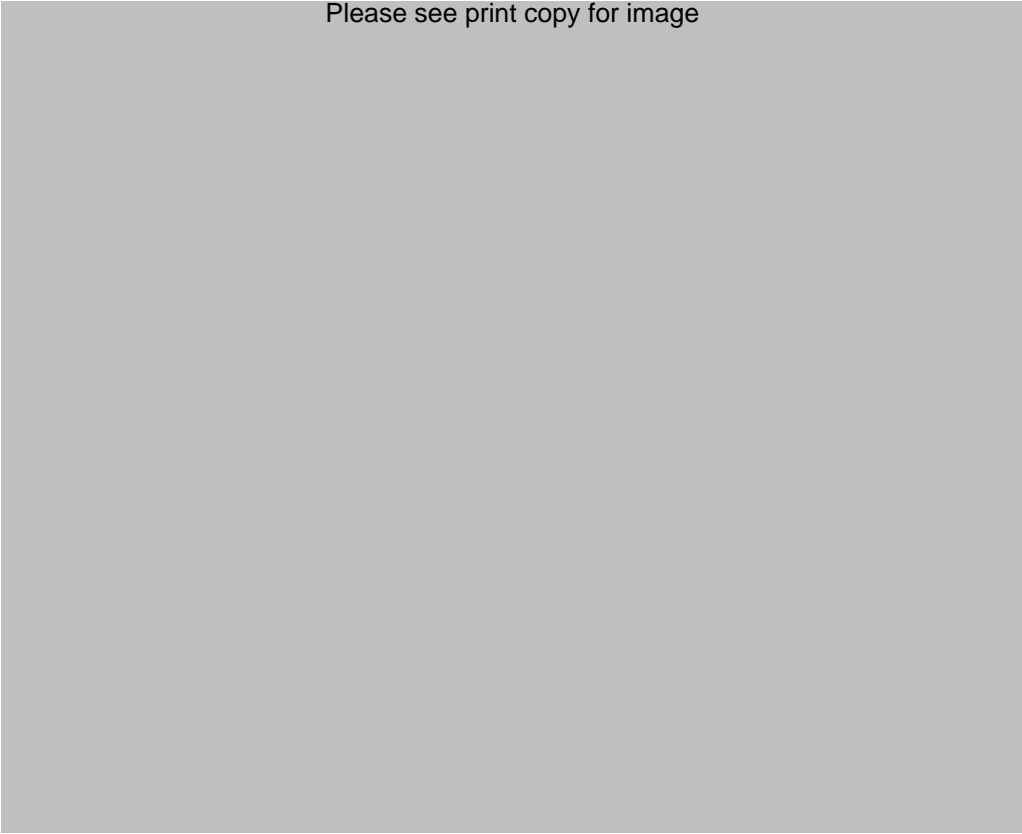
RELATIVE SKILL EMPHASIS FOR DIFFERENT MANAGEMENT LEVELS



Source: D. Hellriegel and J. W. Slocum (1978)
" Management ; Contingency Approaches ",
Figure 1.2, p11

FIGURE 17
HIERARCHY OF MANAGEMENT SKILLS

Please see print copy for image



Source: P. J. Guglielmino (1979) in " Training and Development Journal " 33 (4) April 1979, p. 12, Figure 1.

level of executive or manager. Obviously, these are generalisations and there are important exceptions. For example, first-level research and development managers are likely to need substantial conceptual skills. To a greater or lesser degree, every manager needs to possess some combination of technical, human and conceptual skills.

The above literature review suggests that these skills represent the skills needed by all executives or managers. The degree of each skill that should be posed by an executive or manager depends on the level or position occupied. These skills can be implanted and transferred to the management through various means or modes of training.

3.11 Japanese Sepcific Managerial Skills and their transferibility

Those who work at the management level, whether in a Japanese controlled company or not, will need at certain degree of conceptual, human and technical skills, termed here as **general managerial skills** (see Chapter 2.18.3). Specifically, in a Japanese controlled company, the managerial staff need not only the general managerial skills but they are also expected to acquire various Japanese specific managerial skills since they are required to implement various elements of the Japanese management.

The elements of the Japanese management system are discussed in Chapter 3.9 and those elements are to be related to other Japanese concepts of strategic business management and production management techniques, namely, long-term planning (LTP), the just-in-time (JIT) or **kanban** (a Japanese word, pronounced kahn-bahn, meaning 'card' or

more literally 'visible record') and total quality control (TQC) techniques.

The Japanese have been well known for their long-term planning perspective both in the economic areas and in business sphere. Tadashi Mito (1981) pointed out that Japanese companies learned the fine points of drawing up and executing such plans from the United States. The question now is how have Japanese long-term planning become a distinct characteristic of Japanese industry?. Part of the answers to this question was provided implicitly by Mito (1981). Mito argued that the reasons are that Japanese business is extremely competitive both domestically and internationally, and that the survival and growth of the companies are closely linked to marketing expertise and innovation, as well as to on going improvement in productivity. These reasons may provide some background on the need for Japanese companies to have long-term planning. There are many other reasons to support Mito's arguments. However, what is clear here is that the long-term plans of Japanese companies go beyond consideration of short-term profit or loss to take into account long-range trends in the corporation's economic, technological and social environment (Mito 1981). In addition, Mito stated that Japanese companies stress the expansion of net sales and market share rather than the rate of return on investments as commonly found in Western companies. In the Japanese case, a company's top managers see themselves as leaders of corporate communities. Furthermore, Japanese

"company's leaders devote themselves to supporting

and developing the whole of their firm, to prevent losing employees (and sales) to competing companies. In the past, profit was seen as the important goal, but nowadays survival and growth for the whole operation are seen as more important. Because the Japanese companies draw business plans which favor sustained development over all other concerns have succeeded in developing an industrial system from which enterprises in other nations learn much" (Mito, 1981, p. 9).

For Japanese companies, planning has been based upon a long-term perspective, and this is an indispensable part and characteristic of any Japanese business venture. The long-term planning characteristic of Japanese companies may explain why Japanese companies operate differently from that of other international companies, and may also provide a primary reason why Japanese companies have been so successful in carrying out international business expansion and long-term plans which are rarely experienced by most Western companies. In fact, Japanese companies are more likely to survive and grow in an environment of fluctuating and competitive international markets than do their counterparts in other countries, because the survival and growth of Japanese companies, according to Mito (1981), are closely linked to marketing expertise and innovation, as well as to on going improvement in productivity.

The emphasis of Japanese companies on the need for long-term planning has characterised the strategic management concept of Japanese companies' operation both internally or internationally. That practice, in turn, has become one of the main issues of dispute because Japanese foreign partners generally want to know and acquire the skills that contributed to the company's long-term planning

process.

The Japanese LTP does not operate in isolation. It is supported by other business management aspects at the production level, namely, just-in-time (JIT) and total quality control (TQC), which are key ingredients of Japanese production management.

The just-in-time, according to Lubben is "best represented as an 'umbrella' philosophy dealing with how manufacturing subsystems are integrated into an overall manufacturing system. JIT is not a patchwork of systems; however, it does incorporate key aspects of other systems and melds them into a synergistic system" (Lubben 1988, p.7). In practical terms, the concept of JIT is really to

"produce and deliver finished goods just in time to be sold, subassemblies just in time to be assembled into finished goods, fabricated parts just in time to go to subassemblies, and purchased materials just in time to be transformed into fabricated parts" (Schonberger, 1982, p. 16).

The Japanese integrated this concept into their overall production management more than a decade ago. The implementation of this concept, along with other management concepts, has provided them with a significant lead and competitive edge in the tough international business competitive world. Having a competitive edge implies being more efficient, having a better product, or providing a better service than the competition (Lubben, 1988). The net result of implementing the JIT concept, among others, is "significantly higher quality and productivity and provides visibility for results so that worker responsibility and commitment are improved" (Schonberger, 1982, p.15) and

reduced waste. Profits made from waste reductions, Lubben (1988) argues, are probably the most significant, as they translate directly to the financial bottom line: every dollar saved adds one dollar of profit. The success of JIT implementation has led to one comment that "Japanese industry produces small quantities 'just in time'; Western industry produces massive quantities 'just in case' " (Schonberger, 1982, p. 16).

The prevailing view of the JIT concept is as an inventory control system. In fact, Schonberger stated that "it is not uncommon to find JIT used synonymously with **kanban**, which is the name for a specific Japanese replenishment system developed by Toyota. **Stockless production** is another term that is sometimes used. Kanban is indeed one device for moving toward JIT production, and 'stockless production' captures the inventory control flavor of JIT. But I view just-in-time production management as much more" (Schonberger 1982, p.17).

The concept of kanban refers to a manufacturing control system developed and used in Japan. Its practical use is best described by Lubben (1988). He said that kanban is a mechanism by which a workstation signals the need for more parts from the preceding station. The type of signal used for a kanban is not important. Cards, coloured balls, lights, and electronic systems have all been used as kanban signal. A unique feature that separates a true kanban system from other card systems, such as the travel cards used by most companies, is the incorporation of a 'pull' production system. Pull production refers to a demand system whereby products are produced only on demand

of the using function.

The application of the JIT or kanban may stand alone or may operate in concert with the TQC. However, the combined application of these two concepts enhances the quality control aspect of the production management within the company. The total quality control itself will provide the company as whole a ground base for producing quality outputs.

One of the world's leading proponents of the TQC is Mr. Hajima Karatsu (see Mito (1981), executive director of Matsushita Communication Industrial Company. His book **Quality Control to Expand a Company-Successful QC-From Top Management to the Factory Floor** published in Japanese language in 1966, is regarded virtually as the bible of TQC methodology. As discussed by Tadashi Mito (1981), the book addresses the foundation of quality control, lists appropriate statistics and discusses a wide range of theories, techniques and principles. Karatsu (1966) argued, according to Mito (1981) that the proper objective of quality control is to eliminate quality control. In other words if high quality products can be manufactured in the first place, without any rejects, there will be no need for inspection per se. This means that all phases of a company's operation-design, raw materials, machining equipment, work process, production sections, raw materials and finished goods warehousing and all other equipment and personnel, must be united in the effort to eliminate defects completely (Mito, 1981).

The application of the TQC concept can be explained by comparing the practices of the Japanese and the West. In

the Western system, inspection is performed by inspectors from a quality control department, and in Japan, workers and forepeople (not a quality control department) have primary responsibility for quality, and everyone else is expected to contribute, often at the request of the workers and foreperson. The flow consists of engineers building automatic error-checking devices (aside from those supplied by equipment suppliers), personnel provides quality control training, and management is quick to approve funding for any ideas that might enhance quality. The Japanese practice suggests the direct participation of workers involved in the making of the products and operators of the machines in the factory floor. Meanwhile, Mito (1981) observed that there was no fundamental difference in goals between the Japanese version of TQC and what has been called 'scientific management' in the West. But "TQC in Japan is far more effective in realising its goals, a fact which reflects Japan's distinctive managerial environment" (Mito, 1981, p.7). The effectiveness of the application of TQC in Japan has been moderated, among other things, by an appropriate national environment, in terms of socio-cultural and political conditions. This proposition leads us to question whether the Japanese management system or practices such as TQC, JIT or kanban, and others are transferable to, or can be effectively practiced in, other countries ?.

Research conducted by Fukuda (1987), Ichimura (1982), Kono (1984-85), Hattori (1986), Keys and Miller (1986) and Mito (1981), pointed out these key features of the Japanese management system. As argued by Fukuda (1987), none of

these practices are fully implemented overseas in their original form as normally practiced in large Japanese companies in Japan, and that this is due to differences in socio-cultural environment, mentality, values, and philosophy of the countries. The characteristics of Japanese cultural values are certainly different from those of Western and other Asian cultures. This difference has made it difficult to fully practice them in countries outside Japan.

It should be pointed out that most aspects of the Japanese personnel management system took shape after the Second World War as a result of rational (.e. westernised) thinking rather than drawing on the unique culture of Japan, and, according to Kono 1984-85), many systems that originate from the core of the culture are not transferable. A study by Kono (1984-85, pp.37-38) identifies some aspects or elements of the Japanese system of management that are transferable or not.

The non-transferable elements include: (a) strong identification with the company. Where individualism is strong, identification with the company as in Japan cannot be expected. A life-time commitment and long overtime cannot be transferred, (b) ambiguous job designation, (c) too much emphasis on length of service for wage increase and promotion.

Transferable elements of the system include (a) systems that are congruent with the value of the society. One union in one company is advantageous both to the workforce and to the company, (b) systems that are related to conflicting values. The class system and egalitarianism

are conflicting values, and both are still in existence. Equal treatment can be transferred and can be supported by a majority of the workforce, (c) unclear aspiration levels. A system of working in one large room, or one with frequent change of job, is transferable, because the aspiration levels on the matters are not clear.

Ueki's survey (1982) in Brazil on thirty Japanese subsidiaries, quoted by Kono (1984-85), found that the subsidiaries that transferred the Japanese system of management performed better than those that did not. Ueki investigated in the survey the extent to which the Japanese system of management was used, and established ten items. These are: use of business creed; life time employment; job flexibility; application of length of service to wage increase and promotion; use of consensus; use of large room for the office; extent of welfare system; transfer of general management skills; transfer of marketing skills; and transfer of production and quality-control skills.

Ueki found that 15 majority owned subsidiaries used the Japanese system to the greatest extent, 7 subsidiaries that were joint Japanese-Brazil ventures used it to a lesser extent, and 8 subsidiaries that were joint ventures with the government used it the least. That the selective transfer of Japanese management skills is effective for better performance was supported by Kono's latter study (1984-85). Ueki also found that training and communication was also important as a means of making the transfer acceptable to local people.

4. C A S E S T U D I E S

The following 16 (sixteen) Japanese companies operating in Indonesia were chosen for intensive and in-depth case study analysis. This description and analysis are based largely upon intensive interviews conducted in the respective company's offices in Indonesia but also draw upon readily available published materials. The interview questions were derived from operational version of the research question set out on pages 17 and 18 above. The format of the interview was semi-structured with all respondents being asked the same basic questions but with scope for respondents to answer in their own words.

4.1 P.T. POLEKAO INDONESIA CHEMICALS - THE POLEKAO GROUP, INDONESIA, A JOINT VENTURE WITH THE POLEKAO CORPORATION, JAPAN

4.1.1 Introduction

P.T. Polekao Indonesia Chemicals is an Indonesian private company respenting a joint venture with a Japanese company the Kao Corporation. Information regarding this company was obtained from the Indonesian Foreign Investment Board in Jakarta and JETRO's Jakarta office. The visit and interview with this company were personally arranged. An appointment was made with a Japanese chief executive officer and with an Indonesian senior manager or director. The appointment with the Japanese executive was unsuccessful, I was, however, successful in contacting Drs. Sjahrir Sjafruddin, the company's Director of Finance (an economics graduate) for an interview. After the first interview, I conducted further two interviews subsequently.

Beside being a Director of Finance of the Polekao

Indonesia Chemicals, he is also Director of Control Department of the Poleko Group as well as being a director of another four companies within the Poleko Group. At the time of the interview, he had been Director of Finance of the company for two years and was also the Director of Control Department of the Poleko Group. Before joining this company he worked for six years with another Japanese company in Jakarta. Before and after working with this company, Drs. Sjafruddin was sent to Japan, including to the Kao Corporation's head-quarters in Japan to attend a technical and management training scheme. Before occupying his current position he had worked in the plant beside Japanese supervisors for some years until he achieved his present position. The background of Drs. Sjafruddin as an Indonesian director working with the Japanese joint venture company in Indonesia has made him an appropriate person to be the subject of this research.

In total there were three intensive face to face interviews conducted and each lasted one to two hours.

4.1.2 Background

The P.T. Polekao Indonesia Chemicals (hereafter called 'Polekao') is a Japanese controlled subsidiary company with a minority ownership by Indonesian companies, and is involved in manufacturing surface active agents. The Polekao Indonesia Chemicals is one of 25 Indonesian companies belonging to the POLEKO GROUP.

The Poleko group is named after Mrs. Pole, mother of the Chairman of the group. Pole means 'welcome' in the South Sulawesi dialect. The business lines of the companies under the Poleko Group are industry, agrobusiness,

maritime, hospitality services, manufacturing industry and trading.

It was established in 1977 with a head office located in Jakarta and started operating in 1978. The company's factory is located in the small town of Bekasi about 42 kms from Jakarta. The factory is currently using 5,000 square meters of space, out of 60,000 square meters available in plant area. Polekao Indonesia Chemicals has 300 employees, of which 4 are Japanese working as management executives on the Board of Management of Polekao and another is an advisor and technician in the Polekao plant.

According to the Polekao 1990 report the company's authorised capital at the time of its establishment was US\$ 6,000,000, and in 1989 its sales turn over was around Rp. 50.00 billion (or around A\$ 3,344,482) and its total assets were Rp. 38.80 billion (or around A\$ 25,953,177). by 1991, according to Drs. Sjahrir Sjafruddin, the Polekao's capital investment is around Rp. 5.00 billion (or A\$ 3,344,482).

Polekao's shares are owned by three share holders: 60% is held by KAO CORPORATION, Japan, P.T. CIBITUNG POLEKO REAL ESTATE, Indonesia holds 20%, and P.T. POLEKO TRADING COY, Indonesia holds 20%. These figures clearly indicate that the Japanese company is the major share holder in Polekao. The proportion of the company's share ownership is also reflected in the number of personnel in the executive structure of Polekao as shown in the composition of Polekao's board of directors, of which the President Director is Dr. A.A. Baramuli, SH (Indonesian), Vice President is Dr. Kiyoshio Maruta (Japanese, President of the Kao Corporation), Vice President Executive is Mr.

Kiyoshi Sakamoto (Japanese), Director of General Affairs is Mr. Amir Bahar, B.A. (Indonesian), Director of Finance is Drs. Sjahrir Sjafruddin (Indonesian), Director of Marketing is Mr. Kiyoshi Hamaoka (Japanese), and Director of Plant Management is Mr. Kadota (Japanese). This composition clearly suggests the importance attached to the control of Polekao by the Japanese. This control is a reflection of the majority ownership of the Japanese in the Polekao Corporation.

Since its establishment, Polekao has produced various kinds of surfactant (for shampoo, cosmetic, agrichemicals, textiles auxiliaries and other products) related products, such as alkyl sulfates (powder, needle, liquid), alkyl ether sulfates (liquid, paste), alkyl aryl sulfonates, and other chemical surface active agents such as scouring agents, leveling agents, penetrating agents, conning agents, and softening agents.

It is reported by the Poleko Group's Chairman, Dr. A.A. Baramuli, as stated in its published 1990 report, that 1989 was a year of great success for most of the companies of the Poleko Group. One of the Poleko Group's companies, P.T. Polyub Swadaya Utama, was awarded a certificate of appreciation by the Indonesian Government for its ranking among the 150 highest tax paying companies in Indonesia at the national level. Similarly in the Jakarta metropolitan region, P.T. Polekao Indonesia Chemicals was also awarded the same certificate of appreciation for being one of the highest tax payers in 1989. The company gave the rapid growth of the Indonesian economy as the main reason for the growth of the Poleko Group. The group has shown its

commitment to the Indonesian government's development programs. The company stated that the steady increase of the country's population has made it possible to create new job opportunities, which provide room for the company to expand its activities and establish new companies. To take advantage and exploit the Indonesian government's recently adopted policy reforms and deregulation measures in economic and financial sectors, the company has been working on new projects in which the company hopes to be operational in 1991.

Polekao states that its operation is based upon the company's basic philosophy, that is, to contribute to the development of the country and its people as well as to promote health, economic growth, welfare and happiness of the whole nation, while participating in the development of non-oil exports as programmed by the Indonesian government. The company argues that to activate this basic philosophy, it is necessary to follow the so-called 'Seven Principles of the Company' which consist of (1) reliability, (2) ability, knowledge and skill, (3) honesty, (4) dedication and devotion, (5) discipline and loyalty, (6) unity, and (7) maximum efficiency and productivity.

Polekao's line of production, in many respects, is similar to that of its Japanese partner, the Kao Corporation.

As described in Kagono, et al. (1985) the Kao Corporation, established in 1887, is Japan's largest manufacturer of soap, detergents, laundry finishing agent, and hair care products. The company's name **Kao** derives from the name of the first toilet soap the company put on the

market which means 'queen of the flower'. Its key corporate value is **seiketsu**, meaning cleanliness or purity. The Kao Corporation states that it is developing new products to **help people make themselves and their surrounding cleaner**, and its success has made the corporation's smiling crescent moon trademark one of the most familiar in Japan. At present some 60% of its production input is imported from overseas.

The corporation's success has been due to its advanced research and development programs. As said by its President, Dr. Yoshio Maruta, in his New Year (1989) speech "the most important thing for us to do is to develop manufacturing and all related technologies based on the creative research and development achievements". He further said that "research and development and technological development will be the nucleus of our business" (Polekao Indonesia Chemicals 1990, p. 2).

The Kao Corporation's research and development activities have become one of the most important aspects of the Kao Corporation's corporate policies. The corporation has stressed integrated R & D. Its initial major breakthrough came in 1928, when it developed Japan's first modified edible fat and specifically for confectionery and bread-baking use. Following this success, the Corporation embarked on efforts to improve its hydrogenation and splitting technology for oil and fat, to establish its own technology for high-pressure hydrogenation. The research results led to expanded activities into new areas, such as synthetic detergents and shampoo. Its technologies have been put into use in an extensive range of industrial

chemicals.

From its success in R&D activities the Kao Corporation then, according to its President, "has grown based on the development of several business segments such as detergents and other related areas since the end of the war. However, now for the first time in its history, Kao has achieved its significant business growth in spite of saturated traditional business. This fact implies that we have successfully established a new good base for our continued future growth. It is really an epoch-making development in the company history" (Polekao Indonesian Chemicals 1990, p. 1).

The Kao Corporation is now believed to be a leading chemical manufacturer with some 200 household products and over 1,000 industrial products. The Kao Corporation's international operation and its collaboration through joint venture mechanism with an Indonesian company, P.T. Polekao Indonesia Chemicals, has brought with it from Japan to Indonesia the technology to produce the same line of products.

4.1.3 Technology Transfer

The transfer of the Kao Corporation's technology to its subsidiary, P.T. Polekao Indonesia Chemicals in Indonesia has been through a joint venture mechanism.

Kao's transfer of technology to Indonesia was undertaken in the seventies, a period when Indonesia was actively involved in promoting its industrial development program. This program was a substitute for the previous policy of importing goods from overseas, and thus attracted

foreign investment. During this period Indonesia was still in great need of foreign investment to generate employment and economic growth. To encourage such investment, rules and regulations were relaxed for this period and as a result of this, investment and technology transfer for this period grew at a tremendous rates.

The Kao Corporation has been regarded by the Polekao company as the main source of Polekao's technology and managerial skills and techniques, according to Drs. Sjafruddin, through Kao's majority control of the company and conditions of the joint venture agreed upon by those involved. A consequences of this, according to Drs. Sjafruddin, is that the Indonesians may expect to live with the Japanese system of management and to acquire work skills based upon the Japanese system for some considerable time. Questions as to the degree the Japanese system of management is practised in the subsidiary, and to what extent, and whether the Japanese related management skills are transferred to the Indonesian employees will be answered later.

All the technology transferred by the Kao Corporation to its subsidiary was characterized by Drs. Sjafruddin as (1) of medium scale size, (2) being conventional or fairly well established and wide spread in the advanced countries, (3) not as sophisticated as the ones found in the advanced nations, but certainly not as low as those used in many developing countries, and (4) in terms of the level of sophistication, it is certainly different from the technology used in the Kao's plant in Japan, because the technology transferred to its subsidiary in Indonesia is

not new. This was despite the fact that when the technology was imported to Indonesia in 1977-1978, the technology was considered to be very advanced technology in the Indonesian technological environment.

Drs. Sjafruddin nominated four main reasons why the technology used in the Kao's factory plant in Japan is different from the one utilised in its subsidiary in Indonesia : (1) difference in labour costs and availability of skills between the two countries, (2) the difference in the size of the company, the Indonesian subsidiary being much smaller, (3) differences in the cost and availability of capital, and (4) differences in government regulations or policies for the chemical industry in the two countries, especially in relation to environmental and technological concerns. It has been widely acknowledged that the Japanese have much stricter environmental control regulations than Indonesia, and the Japanese community is much more critical of environmental issues than their Indonesian counterparts mainly because the Japanese in the main, are better educated and more politically free to protest than the Indonesian public with regard to environmental concerns, and as a result environmental control for industry in Indonesia is of a much lower standard than is found in Japan.

All the technology transferred to Indonesia is actually carried out through employing Japanese staff or experts, training Indonesian staff, self-study by the Indonesian staff in the form of direct observation conducted privately without supervision, and through the transfer of documents in the form of plant layouts, process

designs, product specifications, patents or trademarks, blueprints, computer software, and instruction manuals. Among these mechanisms, training and self-study has been regarded by Drs. Sjafruddin as the most effective ways of transferring the technology, that is, the knowledge to develop or form the skills of the Indonesian employees working in Polekao.

4.1.4 Training

Training has been the most important instrument for forming or developing the skills in the Japanese companies. This practice is also evident in Polekao where efforts and opportunities are given to the company's Indonesian employees, including management staff, to take part in the company's training programs. The practice of training in the Polekao company supports Fujimori's arguments (1986) which suggest that training is an essential factor of technology transfer. Opinions expressed by Kosenko and Samli (1985, p. 128) and Parpia (1974, p. 101) also support a proposition which says that that training is a vital factor in technology transfer, as it is through training of personnel that technology is made effective. In Polekao's case, training is not officially formulated, but formally, the training program and opportunities are provided to both the technical and managerial staff on request.

It was pointed out by Drs. Sjafruddin that there is no specific or predetermined training program for the managers or directors of the subsidiary company. Polekao appears to disregard or ignore the Indonesian government's requirement for foreign companies to provide training for

their local employees. The point here is, according to Drs. sjafruddin, that whether the government regulations exist or not, the company does not feel compelled to provide training for its employees. However, the company does provide training for its staff, in this case, the managerial staff, when new technology is introduced and used in the company, or when the chief executive officers wanted one or more of the company's managers or directors to be trained in Japan or other countries. In addition each manager or director can, if he feels the need, apply to participate in any executive development program, but this will be approved only when it suits the company's needs. This latter is what the company calls '**bottom-up training initiative**'. In view of these points, it is said that the management training in the end, comes from either managerial or executive initiative staff (**top-bottom training initiatives**).

Generally the modes of training which have been used by Polekao are (1) on-the-job training or in house training, (2) off-the-job training, (3) attending short course programs such as executive development programs, attending seminars, conference or up-grading, and (4) counterpart systems, that is, working at different companies of the same or different groups. Up to now, Polekao has not provided any formal training to its managers or directors, or encouraged them to attend courses at an educational institution such as university, institute or academy, to obtain formal qualifications at either undergraduate or graduate level.

4.1.5 Managerial Skill Formation; Experience and

Practices of the Polekao

Our analysis of Polekao begins describing the experience of the company's Director of Control Department, Drs. Sjahrir Sjafruddin, who indicates that in his six years employment with Japanese companies including Polekao, he has been sent twice to Japan to attend training programs at the company's head quarters in Japan. Such training was in the form of off-the-job training at the company's head quarter and lasted for around ten days.

Before he was sent to Japan he was advised that he was going to see working systems and procedures in the parent's company and that he would then attend courses that were relevant to his job in Indonesia. He therefore hoped to gain some relevant experience in Japanese business management and technical skills and knowledge. His participation in the company's two training programs in Japan did not materialise as he expected. He regarded his training in Japan as very much a recreational visit, although not as a holiday, instead of training to gain skills and knowledge. While in Japan he met various people who came from other countries for the same purpose. In Japan they were shown the parent company's complex, participated in a guided tour of the parent company's factory, and attended seminars to hear the history of the company and talks about Japanese language and culture. Based on this information, Drs. Sjafruddin said that "we did not get anything useful or specific from such business policy, either in the form of Japanese strategic management, or various elements of Japanese system of

management. What we received from the so-called training in Japan were lessons on Japanese language and culture, and to see Japan". He was then asked how and where he gained his Japanese related management system and skills. He replied "I studied them myself in my spare time, observing working procedures and mechanisms at work, and learning by doing or through experience at work". Drs. Sjafruddin added that it should be mentioned that as Polekao is the subsidiary and under control of the Japanese company, the Japanese system of management has been employed, although not fully. The Japanese system of management as seen by Drs. Sjafruddin is applied much more in Polekao's plant, than in the head office. But overall, the Japanese system of management plays a dominant role in the running of Polekao. The elements of the Japanese system of management management as practiced in Polekao are (1) a life-time employment system, (2) special consideration of employees' personal welfare, (3) seniority-based promotion and pay system, (4) decision making by consensus, democratic and participative management, (5) a group rather than individual responsibility system, (6) emphasis on group harmony, (7) on-the-job and off-the-job training, (8) job rotation at factory / shop floor level not at the management level, (9) production quality control such as just in time (JIT) production control or **kanban** techniques along with total quality control (TQC) techniques. Although Polekao has not yet fully employed these techniques and management elements, the company is committed to apply them fully in the future.

Polekao clearly indicates that it will not use the Japanese system of industrial relations, because Japanese labour-management cooperation techniques or company based bargaining system are regarded as not suitable for the Indonesian socio-economic and political environment. The Indonesian environment, it seems, has not been clearly understood by the Japanese. This is a sensitive issue in Indonesia, and for this reason the Japanese appointed an Indonesian to head employment and industrial relations within Indonesia.

Job rotation is not considered applicable and is not given to management staff such as those in directorial and managerial positions.

In the case of managerial skills formation, the practice and experience of Polekao show that most of the managers are those people who have already been in the company for many years and promoted from a lower level to management position, and very few are recruited fresh from outside. Those newly recruited from outside generally have had a great deal of working experience at management level, and therefore Polekao does not feel it necessary to provide managerial skill development training for them.

When Drs. Sjafruddin was asked 'why the company does not provide management training for its managerial staff, his answer was that "the company does not have a written formulated training program and policy, but not because of a shortage of funds, time or other reasons. Training is given, as indicated by 'the needs' of the moment ". Drs. Sjafruddin explained "when the training is required, the relevant manager will be called upon to attend a training

program, or when the manager or director concerned feels there is a desperate need to acquire certain knowledge to do his job, he then proposes it to the top executives, and if the top executives agree with his proposal he is then authorised to participate in the training program. That's about all".

Meanwhile, the experience of those managerial staff who took part in company sponsored off-the-job training indicates that all instructors are personnel from the parent company or from one of the international subsidiaries of the parent company. The difficulties generally mentioned by participants were (1) language problems as the Japanese language was used in the training, (2) the time of the training was too short, and (3) the program was too compact or condensed. But Drs. Sjafruddin said that he personally did not experience any major difficulty while attending training programs due to his prior knowledge of the subjects taught, and also his proficiency in English and Japanese. Nevertheless Drs. Sjafruddin concluded that due to his prior knowledge of the subjects taught, he basically had gained no new knowledge or skills from attending the training programs, other than to review or refresh his existing knowledge and skills. He also said that he wanted to part take in other training programs to acquire completely new knowledge and skills that were more relevant to his present and future jobs. He pointed out that most of his prior knowledge and skills were obtained from his earlier working experience and from his university classes. Drs. Sjafruddin sees that in many respects, on-the-job training, that is, by way of learning while working

in the work place without job rotation, to gain experience, can be regarded as the means of skill formation for the managerial staff in Polekao.

What is indicated by the Polekao case, is that training programs and policies were not explicitly designed and described in the company's stated corporate long-term strategy. Training therefore appears to be spontaneous and informal. The same situation exists in the case of job descriptions within the company.

It is often said that everyone is expected to know as much as possible in his or her own informal way and to be capable of accomplishing any duties assigned to him or her. To support this way of managing the company, Polekao's executives provide wide flexibility and working freedom for its staff to do his or her job. That working flexibility is controlled by high working discipline.

The Japanese working discipline system applied in Polekao has been, to some extent, successfully implemented by the Japanese within the Indonesian environment where such discipline is rarely found in Indonesian owned companies. The researcher asked one of Polekao's staff who wishes to remain unonymous 'why can Indonesian employees work with a high degree of discipline in this company, and not in the Indonesian fully owned companies ?'. The answer given was that "in this company, the executives talked less about working discipline but they showed us in a practical way". This is supported by the facts as follows.

The Japanese executives such as directors or managers start working on time at 8.00 am and leave their office at 7 or 8 p.m., while the official end of work is 4

p.m. The Japanese staff have shown that they work hard and concentrate fully on their assigned duties so as to contribute the group's success. The Japanese system of management encourages employees to work together as a team and therefore everyone is involved in the decision making process. Drs. Sjafruddin commented that "what is decided in the meeting room represents a collective decision and every one there is responsible for the execution of the decisions made". Drs. Sjafruddin continued "the Japanese did not instruct us or teach us how a decision should be made in the company, but the Japanese invited us to participate directly in the decision making process. That is how we learned the practices of the Japanese system of management and how we acquired their skills".

The Japanese management approach toward the employees in the case of Polekao company, is one of 'openness' and 'active participation of staff' which appears to work well within the Polekao company. In running his or her own department, every manager and director in turn automatically follows the Japanese way of management as practiced in the company. In this case, the company executives did not fully implement the Japanese way of management, especially in the case of job rotation for management staff, as is commonly found in other Japanese companies. No reason was given as to why. However, it can be assumed that such a practice was probably regarded as not as important for the company management system as other mechanisms of management, such as through active participation in various meetings and the decision making process which could be regarded as a replacement to job

rotation. It is widely maintained that job rotation has been an important part of the training process to develop the skills and knowledge of the staff.

However, although no job rotation is provided to the managerial staff, the managers and directors, according to Drs. Sjahrir Sjafruddin, are always given a chance to propose to executives that they participate in seminars, conferences and short course programs, even also outside the company, to up grade and acquire new knowledge and skills and all expenses are paid for by the company. Every director and manager of the company is also required to participate in the company's top executives' meetings, interdepartmental meetings, and departmental or sectional meetings to discuss various issues considered important to the company's interests, irrespective of whether the issues discussed are related directly to each director or manager's areas of responsibility. The company sees attendance at such meetings, not only as a routine activity but also as part of information gathering, to be training and skill formation for directors or managers of the company. The company's executives believe that by so doing the directors and managers can learn from other directors' or managers' experience and, at the same time, can understand what other departments or sections within the company are doing. This, according to Drs. Sjahrir Sjafruddin, has been made possible because of the company's adoption of a management system which provides (1) ways of encouraging the employees to actively participate in the decision making process. The decision making process within the company is based upon consensus, a process with which

the Indonesian staff have no problems at all, because of its similarity with Indonesian culture in this regard; (2) comparative freedom for the employees without too many regulations or rules in the work place; (3) high working discipline, and (4) a sense of belonging and loyalty of employees to the company. The system adopted by Polekao is the Japanese system of management in a modified form. The system, in its original form, is aimed at developing the company's human potential. This encourages employees to see their interests and the company's as being one. The basic personnel management philosophy of the Kao Corporation as being implemented in Polekao is to create an environment "in such a way that each individual really feels that he/she is respected as human being and to make full use of his/her wisdom, and that the company really believes such an effort will be the driving force for the development of the company" (Poleko Group, 1989C, p. 1).

However, in practice the human resource development of Polekao's directors and managers, according to Drs. Sjafruddin, still follows the same model as implemented in the Japanese skill formation concept. But as no formal or deliberate training programs has been designed specifically for the Indonesian directors or managers of the Polekao company, they often question the effectiveness of managerial skills transfer through the joint venture.

Lack of such formal and deliberate management training for local managerial staff means that they have to plan and implement their own training program to cover this deficiency in company policy and planning

As pointed out by Drs. Sjafruddin "the Japanese

rarely communicate with you and they seem to ignore what you are doing because they are too busy with their own affairs. They want you to do your work or duties as assigned, freely in your own time but without unnecessary delay. They do not ask your methods, but only wish to see the results of your efforts".

Another member of managerial staff of Polekao added that in most cases the Japanese, during the technology transfer, rarely give any guidance to local managerial staff on how to do the job, so the locals have to achieve it by themselves through their own initiative. But he added that "the Japanese are willing to talk to you if you have a problem with your work". In this respect the system employed in Polekao provides local managerial staff with a chance to be active and creative at work. Promotion in the company is partly based on the staff's reputation and success in achieving targets, and another part is based on seniority. The combination of these two aspects is rather unique in a Japanese subsidiary, where it is a normal practice for all promotion to be based upon seniority. As a result of the management practices at Polekao, the staff are competing among themselves to achieve success and to stay on with the company because of promotion prospects. This may explain why the rate of labour turnover is very low in this Japanese subsidiary, although the salary rate for managerial staff, in comparison with other foreign subsidiaries in Indonesia, is relatively low. Ambition to achieve prestige and success in the work place has motivated the Indonesian managerial staff to work harder. This also motivates them to study and develop their

managerial skills relevant to the company's needs.

As shown by Drs. Sjafruddin's own experience as a director with Polekao, there is room for development of personal potential in the company, and although training is initiated and given by company's executives to technical workers, mostly although on-the-job training program, there is no such training for management provided by the company, though director or manager can use his / her own initiative to apply to take part in any kind of training, such as attending seminars, executive development programs or other short course programs. This is one of many mechanisms of managerial skill formation in Polekao. The only alternative to this mechanism is for local managerial staff to keep in continuous interaction with other more senior or experienced staff, and by intensive observation of existing company practices. Drs. Sjafruddin maintained, that local managerial staff accumulate a greater amount of managerial skills by on-the-job experience with the company.

4.1.6 Types of Managerial Skill Acquired

The focus of this study's investigation is the local managerial staff's acquisition of managerial skills while working with Polekao.

As already discussed, this study divides the managerial skills into three elements: (1) Japanese specific managerial skills; (2) functional or professional managerial skills; and (3) general managerial skills which are divided into conceptual skills, human skills and technical skills. Drs. Sjafruddin was asked how much general managerial skills had he acquired before joining

the company. He indicates that he had only acquired technical skills with no advancement in other skills. He was then asked the following question, 'which of the management skills do you feel you have gained the most since joining this company?'. Drs. Sjafruddin stated that it was mainly human and technical skills that he had gained. This answer is consistent with his answer to a question of the importance of conceptual, human and technical skills, and his present position remains unchanged.

Judging from the above answers it is clear that he had not acquired a great deal or only very few of conceptual skills during his employment with the company, despite the fact that he has occupied various important management positions in the company. He maintained he would be making an effort to acquire and develop conceptual skills in the future, however, he recognised that the task might be difficult because to acquire such skills he needed to interact closely with the chief executive circle, and, in particular, with the Japanese management staff. He felt he would have an opportunity to acquire such skills in the future. That opportunity may exist, but the question remains whether the Japanese are prepared to share and such conceptual skills with local managerial staff. Because of the importance of the conceptual skills to the whole operation of the company, the Japanese technology transferor has as competitive advantage over the Indonesian technology transferee, which is why the Japanese executives are reluctant to share conceptual skills and their related strategic concepts with local managerial staff. Katz (1971)

points out that conceptual skill involves the ability to see the company as a whole including recognising how the various functions of the company organisation depend on one another, and how changes in any one part affect others. It also extends to visualising the relationship of the individual company or business industry, the community, the industry, and the political, social and economic forces of the country as a whole. Furthermore, conceptual skill also covers an ability to effectively coordinate various parts in the organisation and to determine the corporate personality. Knowing the reluctance of the Japanese to make public their company's policy, strategy, philosophy and other secrets, it appears that there is not much possibility of the Indonesian managers or directors working at Polekao, being able to acquire that conceptual skill. This situation has been recognised by the Indonesian managerial staff. However, Drs. Sjafruddin argues that "it will depend upon the individual approach and determination to progress". He continued to say that "if we fail to acquire those skills we have to find other ways to acquire the strategic management concept and other relevant skills that guide the company's operation in this country". He was then asked 'do you think that the Indonesian government can play a significant role in this case to help you and other Indonesian managerial staff to force the Japanese to provide the needed skills?'. His reply was

"I cannot see anything that the government can do. The government was already introduced regulations which require technology transferors or foreign investors to provide training for the locals, and laws which require foreign investors for a certain period of time to give locals an opportunity to

occupy various management positions. The reality today in Indonesia is not very promising or advantageous to local Indonesian employees. In other words, the government regulations or policies do not significantly motivate the foreign investors to transfer their skills to the local Indonesians. And we have to live with this reality".

It was pointed out by various staff within the company that

"the Japanese are the controlling partner in this joint venture, so they have a greater authority to say something or to determine the company's direction and policy. And do not forget the Japanese are much more experienced partners than are the Indonesians and that's why the Japanese have successfully created our technological dependency on them".

However, the Indonesian managerial staff in Polekao recognize that despite such an unfavourable position in this joint venture, the Indonesians must appreciate the fact that the Japanese have exposed the locals to the Japanese system of management. That exposure has resulted in their understanding of various aspects of Japanese management philosophy, corporate knowledge, production management techniques and other managerial skills and expertise.

The other managerial skills and expertise that are of interest to the Indonesian managerial staff are functional managerial skills and Japanese specific managerial skills. Drs. Sjafruddin claimed that he has acquired 'very many' functional managerial skills, not only skills related to his marketing portfolio, but also skills related to production management. His acquisition of these skills, he stated, was due to his long association with the company and participation in the company's training programs. He also claimed that he acquired 'very many' Japanese specific managerial skills. However, he stated that his acquisition

of the skills was directly related to the implementation of various elements of Japanese system of management. The essence of the Japanese system of management includes total quality control (TQC), just-in-time or 'kanban' techniques, labour or industrial relations management, long-term planning techniques, and quality function deployment (QFD). The implementation to varying degrees of these techniques, and the skills required for implementation of the techniques in Polekao are integrated within the implementation of the overall Japanese system of management. This implementation suggests that Polekao is run according to the Japanese business management system and this also suggests that the internal environment of the company is very much in accordance with the Japanese system, but with Indonesian operators or employees. Working in such an environment, according to Drs. Sjafruddin, will result in some positive effects on Indonesian employees' skills formation or acquisition, in two ways.

The first effect identified by Drs. Sjafruddin is "the transformation of Indonesia's less disciplined and inefficient working system of management to one of a very disciplined, and very efficient productive working system of Japanese management". Such a transformation is acknowledged by Sjafruddin as very significant, because the Japanese working environment as set up in Polekao has proved to the Indonesian employees that they have the same capability and potential to work efficiently and productively as the Japanese. The second effect is that "by working in a Japanese business environment within Indonesia, the Indonesian managers, whether they like it or

not, have acquired work experience according to this system of management. That experience has provided the Indonesian managers or employees with ample opportunity to learn and acquire the skills derived from the application of the Japanese system of management".

Drs. Sjafruddin and others maintained that the Japanese executives and advisors stationed in Polekao communicate and interact less with the Indonesian employees than do Indonesian executives with their staff. This condition provides less opportunity for the Indonesian managerial staff to learn explicitly about various aspects of the Japanese system of management and the skills needed to apply that system. What the Japanese staff have been doing in the company is not teaching the theoretical principles of Japanese management in lectures or seminars, but have concentrated on the practical application of managerial principles in the work place. This is especially so in the plant. In the office, the Japanese act the same way but with minimal supervision. In such a situation the Indonesian employees have to act on their own initiative to understand, to observe and to study various aspects of the Japanese system of management and that is the way Indonesian managerial staff acquire their Japanese managerial skills. When Drs. Sjafruddin was asked the question "how much of the Japanese specific managerial skills, such as just-in-time or kanban techniques, total quality control techniques, long-term planning techniques, labor-management cooperation techniques, or quality function deployment techniques, have been acquired by you during your employment with this company ?". His answer was

'very much'. But he qualified his answer by saying that before he joined the company, he had already studied the Japanese system of management in a faculty of economics where he obtained his graduate degree in economics and has also worked six years with another Japanese company's plant although at a different position. He went on to add that " had I not had previous study and work experience, I would not have expected to fully comprehend the Japanese system of management, and would not have been able to acquire the Japanese managerial skills as they are practiced in a Japanese controlled company".

An analysis of Drs. Sjafruddin's experience working with Polekao and his acquisition of specific Japanese managerial skills, shows some aspects that need to be elaborated further particularly in relation to total quality control techniques, just-in-time or **kanban** techniques, and long-term planning techniques.

a. Total quality control techniques.

The total quality control (TQC) represents one of the current issues of the Japanese management which attracts a great deal of attention round the world including by Indonesian employees working in Polekao. The concept of TQC techniques has been fully implemented in the company's production plant and the company plans to extend the application of this technique to the entire company, including the administration offices. The aim of the company, as understood by Drs. Sjafruddin, is to apply TQC techniques to all areas and departments and to all levels of staff from the top managers down to the rank-and-file,

and from purchasing to sales. Although TQC techniques have been strongly emphasized in the production department it will in the future also be widely practiced throughout the company's whole administration. The application of TQC techniques in the production plant is directly supervised and controlled by a Japanese acting as manager of the production department. With respect to the application of TQC techniques in Polekao, Drs. Sjafruddin observes that "TQC is not a program but is a fundamental production function that has to be practiced in all areas of the company to produce top quality products with zero defects with an objective of minimising costs, maximising profits, and increasing sales". With such objectives in mind, TQC has become the key element in the company's production system and everyone in the plant, including the directors and managers, are expected to know the concept of TQC techniques. That is why Drs. Sjafruddin said, he was motivated to acquire the knowledge and skill of the TQC concept.

b. Just-in-time or kanban techniques

The application of the TQC can not be separated from the application of the just-in-time (JIT) or **kanban** techniques as it is one of the more important concepts of production management and productivity improvement. Though this term is not widely known in the company, the company, under the direction and control of a Japanese supervisor, automatically implements the kanban techniques. The concept of JIT is often viewed as an inventory control system, but in fact, as suggested by Drs. Sjafruddin in Polekao, "it

deals with how manufacturing subsystems are integrated into one overall manufacturing system to provide ways of producing quality products efficiently as planned".

c. Long-term planning techniques

Another issue that is of interest in Polekao is concerned with the company's strategic objectives, and how to position the company in unstable environment. These, like other objectives, are rarely discussed by the company's executives with their Indonesian managerial staff. These elements are the essence of the conceptual skills that the Japanese are reluctant to share with the locals. However, with some intensive and close observation of how the company is run and directed, the managerial skills, including knowledge to devise the company's long-term plan, are acquired.

4.1.7 Principles of Management of the Company

Another dimension to the Japanese system of management practices in Polekao is the environment created within the company to accommodate the various elements of the Japanese system of management. The fundamental basis of the system are those principles outlined in the company's managerial policy. One outstanding principle of management is this company's obsession with discipline in the work place. The term 'discipline' is very striking to the Indonesian mind considering the general lack of this principle in the work place. In most companies, employees and staff are late for work, leave early, are slow to respond to inquiries from outside, and are slack in

completing assigned tasks. This Japanese emphasis on work discipline is not new to Western countries. It is, however, new to the Indonesian environment. However, Indonesian employees, according to Drs. Sjafruddin, can live comfortably with Japanese management practices, and in fact do so and are quite productive.

The practice of work discipline in Polekao, as found in most Japanese companies, is accompanied by delegation of authority to the workers in order essentially to provide freedom and trust for them to do their job. Although the Japanese often provide no clear-cut direction or authority to staff, such an approach is a part of on-the-job training for the company's employees, especially the managerial staff. For managerial staff, practical training for their position is conducted through the transfer of authority from superiors to subordinates. The essence of these practices is to provide respect, trust and appreciation, to the staff for their contribution to the company. The effect of these practices on Indonesian staff working in Polekao, according to Drs. Sjafruddin, is that, it results in (1) absenteeism is absent, or this is reduced significantly; (2) no one comes late to work; (3) overtime is either not worked, as all the work is completed on time or overtime is reduced significantly; (4) there is increased cooperation among staff and greater team work, because individual success of an assignment is regarded as a group achievement.

This approach of cooperation and team work is an essential ingredient for developing a sense of belonging or loyalty among employees. A strong sense of belonging

coupled with reliance on seniority in determining pay and promotion have been responsible for the company developing the Japanese approach of life long employment which provides room for widespread participation of employees in the decision making process.

The Japanese management system of decision making, is seen as a bottom-up approach is aimed at (1) developing staff initiative; (2) increasing staff involvement in the decision making process; (3) creating an atmosphere of togetherness among staff; and (4) widening the staff's understanding and knowledge about the company's operations.

The active participation of staff in the decision-making process is conceded by the company's Indonesian managerial staff as positive, because they can observe and learn about how the company is run. However their participation is limited to the practical aspect of the company's business and not strategic ones, since strategic aspects of the company are normally restricted by Polekao's Japanese executives for their parent company's interest. On this point, Drs. Sjafruddin concludes that the transfer of Japanese managerial skills is limited only to practical aspects and this reflected in the limited provision of training given to Indonesian managerial staff at Polekao Indonesia Chemicals.

Recognising the limitation of training provided to local Indonesian managers, it is fair to mention that the application of the Japanese system of management has brought about many positive effects, and of these, the development of the local managerial staff's understanding and perception of an effective system of management need to

be mentioned, and has led the company to innovate a new system of management to called **Total Creative Revolution** be applied in Polekao.

4.1.7 Total Creative Revolution

Total Creative Revolution (TCR) is a newly invented style of management developed at Polekao Indonesia Chemicals. In December 1989, this new style of management was introduced and applied both to Poleako Indonesia Chemicals and to the whole Poleko Group in Indonesia.

Examined closely from a Japanese perspective, there is nothing original or new in the TCR concept, although it is new from the Indonesian point of view. TCR, according to Drs. Sjafruddin, is derived from the Japanese system of management as applied in Polekao. TCR in fact confirmed the transfer to Indonesia of both Japanese technology and its management system to Indonesia. TCR concept is in fact revised form of the Japanese system of management. Drs. Sjafruddin, writing about TCR principles of management management (Editor, 1990, pp.103-104) bases it on mutual trust between employees and management with a minimum amount of direct supervision, to encourage creativity. The concept relies on human resources through new innovations and a spirit of excellence expresse as a desire to excel in the work place. The whole thrust of the concept seems to be based on a more relaxed form of management that encourages employees to use their own initiative to a much greater degree.

Furthermore, Drs. Sjafruddin maintains the concept involves the whole spectrum of business administration

covering among other things, marketing and office administration.

This system of management decreases the need for a large bureaucracy, which in turn, decreases the need for excessive amounts of paper work and thus increases the efficiency of the management of the company. This also accelerates the flow of information to all sectors of management and simplifies the running of the company.

The development of TCR is one of many effects of the Japanese technology transfer to Indonesia in the case of Polekao Indonesia Chemicals.

4.2 P.T. KRAMA YUDHA TIGA BERLIAN MOTORS, INDONESIA

JOINT VENTURE WITH THE MITSUBISHI MOTORS, JAPAN

4.2.1 Introduction

The researcher visited the company's head- quarters to make an appointment with a Japanese executive or expert and an Indonesian manager. The appointment with the Japanese was unsuccessful. I was advised by a receptionist that the executive was "too busy" and then that "he is out of the office" showing a reluctance to participate in the research or interview. It is widely known that Japanese working in foreign subsidiaries are reluctant to give information relating to their business activities. One of the Indonesian managers, who asked that his name not be mentioned, confirmed this and he even added that "it has been the policy of the parent company in Japan to direct Japanese stationed here not to talk to any one outside the company regarding company affairs, before consulting the parent company in Japan". Finally, an appointment was made with an Indonesian manager, Drs. E. Rizal Dahlan, Manager of the Delivery Department, Marketing Division, P.T. Krama Yudha Tiga Berlian Motors, for two lengthy interviews. Drs. Rizal, an economics graduate, asked for a short interview to be conducted in his office and another outside the office.

4.2.2 Background

The parent company of P.T. Krama Yudha Tiga Berlian Motors was P.T. Krama Yudha established in 1970. In the same year, P.T. Krama Yudha's President Director, Drs. H.

syamoedi Said signed a cooperative agreement with Mr. C. Fujino, President of Mitsubishi Corporation. The signing of the cooperative agreement led to the establishment of P.T. Krama Yudha Tiga Berlian Motors (KTB). KTB's main line of operation was as a sole distributor of Mitsubishi vehicles in Indonesia. In 1971 another company, P.T. Krama Yudha Surabaya Mojopahit Motors (KSMM) was established assemble Mitsubishi vehicles in Indonesia. KSMM started operating in 1972. In 1973 KTB established a joint venture with Mitsubishi Motors Corporation (MMC) and formed a new company called P.T. MITSUBISHI Krama Yudha Motor & Manufacturing (MKM) which started operating in 1975. In 1990 MKM enlarged its production with the Mitsubishi Motors Corporation by making 110 engine units at the MKM's plant, and also producing automobile component parts, including cylinder heads, cam shafts, connecting rods, crank shafts, and cylinder blocks for Mitsubishi 4G17 1300 CC. This new expansion created some 200 plant-based jobs. MKM was specifically designed to produce automobile component parts and engines of which it was the first manufacturer at that time. In 1976 they built a new office complex as head quarters for all of its operations in Indonesia.

The Krama Yudha Tiga Berlian (KTB) has 118 dealership around Indonesia. As at the end of 1990, KTB had 373 professional staff consisting of 6 directors, 16 managers, group technical advisors, and 334 supporting staff. All of KTB's technical advisors are Japanese. Krama Yudha Tiga Berlian controls 31% of the shares of P.T. Mitsubishi Krama Yudha Motors & Manufacturing.

At P.T. Mitsubishi Krama Yudha Motors &

Manufacturing, there are 700 employees consisting of one President Director, Mr. H. Kurozumi (Japanese), two Vice President Directors, Mr. H. Sidabutar (Indonesian) and Mr. H. Sasaki (Japanese), and six directors of which, three are Japanese and three are Indonesian. The rest are technical, administrative and managerial staff. According to Drs. Rizal, the number of employees working in the Krama Yudha group is around 2,000. MKM produces 72,000 automobile component parts of Jetstar, Colt, Colt diesel, and Fuso trucks, and 60,000 gasoline engines of 1,600 CC, 2,500 CC diesel, 3,300 CC diesel, and 6,900 CC diesel. The composition of Mitsubishi Krama Yudha Motors & Manufacturing is 25.4% owned by Mitsubishi Motors Corporation, 25.4% owned by Mitsubishi Corporation, 18% owned by P.T. Krama Yudha, and 31% owned by P.T. Krama Yudha Tiga Berlian Motors.

Since its establishment 20 years, ago Krama Yudha Tiga Berlian Motors has distributed some 600,000 Mitsubishi motor vehicles in Indonesia, around 25% of total Indonesian sales. Much of Mitsubishi-Krama Yudha's production has been exported overseas. In KTB's Reports state that the company is proud of the awards won in Indonesia by their products. This, according to the company's executives, is due largely to the technology, well-trained staff and expertise in the company producing quality products.

The production of Mitsubishi vehicles in Indonesia is of three types. Firstly, there are the Lancer and Eterna sadans, secondly is Colt diesel, and thirdly the Fuso truck. Each has a local content of 80% for the sedans, and between 40% to 50% for the Colt and Fuso trucks. These

percentage figures show that a great deal of the inputs for production have to be imported from overseas, notably from Japan. As mentioned in the Mitsubishi's Indonesian publication that there are also vehicles that are 100% Indonesian inputs. A large part of the components for the vehicles are imported from the company's principal partner in Japan (Mitsubishi Anda, 1990, p.10).

4.2.3 Transfer of Technology

The establishment of KTB has been supported fully by Mitsubishi Corporation and Mitsubishi Motors Corporation and these two corporations together have been major share holders of both KTB and MKM. This majority shareholding shows the controlling power of the Japanese corporation over their Indonesian partners. Looking at the history of the establishment of, its Indonesian partner, it is clear that the only source of technology of the Indonesian partner comes from Japan. Most strategic positions in MKM have been occupied by personnel from Mitsubishi, and all technical staff and key advisors also come from Mitsubishi. The system of management employed in the Indonesian companies is Japanese. Dependence by the Indonesian counterpart on the Japanese technology is shown by production methods of Mitsubishi's Indonesian plant. This dependency has been re-inforced by the fact that most of MKM's input supplies come from Japan. Moreover, up to the present some strategic decisions of the Indonesian counterpart, such as the level of production and marketing, still have to be accepted or approved by the controlling and principal partners in Japan, Mitsubishi. This was

pointed out by MKM's Deputy General Manager of Production and Engineering, Mr. Azil Hasnam (Mitsubishi Anda, 1990, p. 8).

The signing of cooperation agreements between Krama Yudha and MITSUBISHI Corporation and between Krama Yudha Tiga Berlian Motors and MITSUBISHI Motors Corporation form the basis of joint venture efforts to accommodate the transfer of technology from Japan to Indonesia.

The scale of technology transferred from Japan to Indonesia through this joint venture, according to Drs. E. Rizal Dahlan, is very large, and the technology can be classified as 'up to date technology' compared to the technologies used in some advanced countries. Therefore, Drs. Rizal maintained that the technology transferred to the Indonesian subsidiary is not very different from that used by its principal partner in Japan.

Like other processes of international technology transfer, the technology transferred by Mitsubishi to its partners or subsidiaries in Indonesia has been carried out through various mechanisms such as the employment of Japanese staff or experts in the company, through the transfer of documents such as plant lay out, process design, product specifications, blue prints, computer software and programs, instruction manuals, and through the training of staff both in Indonesia and in Japan. However, after working for more than 16 years for the company, Drs. Rizal himself has never been sent to Japan to participate in technical or managerial training. Nevertheless, Drs. Rizal (an economics graduate) has been given a great deal of opportunity to attend various

seminars or short course programs in Jakarta. In fact he was given every chance to go to university to pursue his degree program in economics. His participation in those programs reflects the company's willingness to develop its human resources, and especially to develop its employee's skill and knowledge.

4.2.3 Managerial Skill Formation and Training

Unlike Polekao Indonesia Chemicals, KTB has a formal written training policy. Training has become one of the important parts of KBT's business development programs, especially in relation to the company's human resources development. Training has been regarded by the company as part of its employees' skill formation process. To effectively execute the program, the company in 1975 established a training center in Malang, East Java province, about 950 kms from Jakarta.

Some of the activities of the Malang training center have been designed to train selected top senior technical high school graduates. At this training program, trainees were provided with allowances to support their study at the center without any obligation for them to work for the company. Those trainees, when they have completed their one year course at the center, were asked whether they would like to join the company. In fact, all of those trainees who attended this course, decided to join the company.

Those who join the company are given further on-the-job and off-the-job training. Those who show excellent performance at work are given greater opportunity to participate in further training, as a next step for

promotion. Off-the-job training can be in Indonesia or overseas. In Indonesia a formal and intensive training program for senior staff is held at Bandung Institute of Technology (ITB) and Cevest Bakasi, Jakarta, and the overseas programs are normally at the Polytechnic, Mitsubishi Motors in Kyoto, and Kawasaki Factory-Mitsubishi Motors in Tokyo. As at 1991, KTB has sent some 100 staff to take part in the training program at the Kawasaki Factory of Mitsubishi Motors. Beside taking part in these training programs the managerial staff are also given the opportunity to take part in other short course programs, seminars, conferences, and executive development programs. All are financed by the company.

Those trainees who attended in the Malang Training Centre will after ten years working with the company, become a important group of experts. These experts, according to Drs. Rizal, are an important asset to the company and will then be stationed as mechanical experts or regional managers at various company as experts or regional offices around the country. Within one five years period (1975-1979) the company produced 159 well-trained mechanical experts whose expertise is equivalent to that of a second class Japanese machinist.

Drs. Rizal has been working with the company for 16 years and has achieved his current position of manager in the marketing division through a process of what he called 'a bottom up promotion process'. He described how he first joined the as a photocopy boy and climbed his way up to his present position as a manager. The way to his present position was through a variety of various technical and

managerial training programs, both on-the-job and off-the-job. What this tells us, according to Drs. Rizal, is that "in the Japanese controlled or owned company there are two factors always at work. One is training to develop and employee's skills in various areas and, the other is seniority determining promotion and pay". He went on say that during his employment with the company he has always been told to improve his skills and increase his knowledge not only about company operations but also in gaining functional skills, such as marketing, personnel management, accounting and economics, as well as skills or knowledge related to the Japanese system of management. Drs. Rizal was told by his company's President Director that only by possessing those skills and knowledge that he could be promoted, and Drs. Rizal agreed this observation. He maintains he was motivated to work harder, to engage in self study, and to attend various training programs provided by the company. But the training for a manager is in many respects no different from that of technical training in the factory. The difference, according to Drs. Rizal, is that the manager is given greater responsibility with no specific guidance and no job description. However, he had more freedom to do the job, and more self-discipline than is needed by technical staff. All the training he has had up to now has been aimed at acquiring a completely new set of skills and/or knowledge in a variety of fields. However, often the training matter is not much relevant to his duties at work. It is not known why such discrepancies exists. Drs. Rizal assumes that it is probably due to the trainer or instructor's lack of understanding of the

practical aspects or problems faced in the work place, as most of the trainers or instructors come from outside the company. In the case of training in Japan, instructors generally come from within the parent company. However, because such training is conducted in Japan the Indonesian managers often experience language problem. This problem has resulted in Japan-based training to be less effective and less productive than it could be.

The formation of managerial skills in Japanese controlled companies such as this one provides greater possibility for managers than in Indonesian owned and controlled companies. A Japanese controlled company is generally run according to the Japanese system of management. Drs. Rizal maintains "that system of management provides all the necessary ingredients for the manager to make of himself what he wishes to be". The Japanese system of management includes the following elements (1) a life-time employment system, (2) special consideration of employees' personal welfare, (3) seniority-based pay system, (4) seniority-base promotion, (5) decision making by consensus, (6) democratic and participative management system, (7) a group rather than individual responsibility system, (8) on-the-job training to develop the 'company man' loyal and useful to the company, and (9) job rotation for technical staff. These are cited by Drs. Rizal as factors that motivate managers to gain knowledge and skills while working in a Japanese company. However, Drs. Rizal pointed out that "not all factors of the Japanese system of management are fully practised in the company in its purity". The reasons for this are (1) a different cultural

and political environment, (2) the low standard of education employees, (3) a lack of experience and exposure of local managers to other systems of management, values and political affairs, and (4) a lack of "forward planning perception" among Indonesian staff in comparison to their Japanese counterparts.

Despite all the effort that has been put into developing the managers' skill and knowledge, Drs. Rizal believes that the training opportunities given to the managerial staff are still not enough and, therefore, each manager has to acquire any further learning through his or her own initiative. This is seen as one of the most important factors in the skills development process. However, Drs. Rizal's personal experience of this training programs has led him to believe that the most effective method of management training is on-the-job training. The next most effective method is training at an educational institution, such as at a university, institute, academy, or by attending short course programs, seminars or conferences.

4.2.4 Types of Skill Acquired

There are three type of managerial skill that Indonesian managers are expected to acquire while working for KTB and these skills are a major forms of this study. They are functional or professional managerial skills, Japanese specific managerial skills, and general managerial skills such as conceptual skills, human skills, amd technical skills, as illistrated by Drs. Rizal's personal experience and observation.

4.2.4.1 Functional skills

As discussed in Chapter 2.19.3 functional skills includes the skills which managers could gain during employment with any company. Drs. Rizal was asked the following question 'how much of the functional or professional skills such as marketing, finance, personnel management, management, industrial relations, and other general skills have you acquired since working with this company'. His answer was "very much". The reason given by him was that "it was through of my long experience of working with the company and my experience of this system of management which provided on-the-job training for managerial staff, as there was no clear job description, valuable experience was gained through the necessity to work and planning with my colleagues". Drs. Rizal Dahlan added that

"the environment within the company has been created in such a way as to force every manager to perform well and compete with his associates to achieve results and reach to targets".

Internal competition is the basis on which each manager is assessed for promotion. The company's requirements for promotion indicate that each manager is required to possess two types of knowledge and skill, that is (1) managerial knowledge and skills, and (2) leadership and personality. Managerial knowledge and skill consist of two main elements, (a) 'administrative management', and (b) 'technical management'. Administrative management requires skills and knowledge in the fields of planning, organisation, guidance, coordination, control, and communication. Technical management requires knowledge and

skills in the field of factory and plant organisation, labour relations, logistics and supply. A manager therefore needs (a) to be bright and intelligent, (b) to believe in his/her own ability and cooperative, (c) to be creative, self motivated and progressive, (d) possess expertise and skills relevant to his or her own field, (e) wise, (f) to be stable emotionally and patient, (g) to be submissive and loyal, and (h) to be disciplined (Krama Yudha Tiga Berlian Motors, 1991, p. 31).

These requirements for promotion have encouraged staff to improve their expertise and skills and to work harder to achieve success in their profession.

4.2.4.2 Japanese specific managerial skills

It is recognised by Drs. Rizal that "the success of a manager to acquire functional skills in the company has been greatly assisted by the successful application of the Japanese system of management". That system of management, Drs. Rizal added,

"has been instrumental in transforming Indonesian managers and employees and encourages habits conducive to greater efficiency productivity, and discipline. It is here that the Japanese system of management has made its greatest contribution to the development and improvement of the Indonesian philosophy of work".

In practical terms, almost all elements of the Japanese system of management are practised to varying degree in the Indonesian company. Thus the Japanese concepts of production management such as just-in-time production or *kanban* techniques and total quality control (TQC) are fully employed in the company at both levels of

the company, that is, at the factory and administration levels. Elements of the Japanese system of management that are not employed in the company are (1) job rotation at managerial level, (2) Japanese marketing techniques and strategy which stress the long-term profits and larger market shares, since Indonesian ways of conducting business are regarded as being more appropriate, (3) long-term planning techniques, (4) labour-management relations system, since the Indonesian ways of dealing with labour matters are more applicable.

The employment of the Japanese system of management has been made possible, because, (1) from the outset, the company's executives have decided to create a work environment more Japanese than Indonesian, (2) the adoption of the company's philosophy of **harmony & discipline** has produced, in the company's work "a harmonious working relationship among personnel working in KTB, and this has been regarded as one of the main assets for the company's success" (Mitsubishi Motors, 1990, p.9), and (3) the company is run both by Indonesian executives and managers as well as Japanese advisors, and the management system include elements of the Indonesian system of management with respect to marketing and personnel management. This shows that the environment within the company is really a mixture of the Indonesian and Japanese systems of management with Japanese elements being more dominant. This "mixed" type of environment has been responsible for aiding Indonesians to obtain key positions and to fully understand the operation of the company in general, and, therefore, to acquire a great deal of Japanese specific managerial

skills.

The acquisition of Japanese managerial skills has been accelerated through the direct involvement of a manager implementing the Japanese system of management. In implementing this system, the manager performs various administrative jobs while still formally filling a specific position within the company. This suggests that the manager should experience a wide range of administrative jobs. At the same time, each manager participates in various meetings at an executive level. Such meetings are held approximately every two weeks, or less when a decision needs to be made. When a decision is made each manager participates in the decision making process. Such participation provides ample opportunity for staff to know and understand the operation of other departments and assists in the acquisition of information and knowledge of the company's operations. This process ensures a close contact and interaction, not only between managers but also between manager and executives. Through this contact and interaction the transfer and formation of managerial skills is accelerated for all who participate in such interaction and contact. Having had such experience, the manager not only acquires skills through doing his or her own job but is also extremely useful and effective when it is necessary to train other managerial staff through on-the-job training or in-house skill formation. Seen in this light, the methods of Japanese managerial skill formation is very effective. However, Drs. Rizal maintains the effectiveness of these methods depend on the company's chief executive seeing that it is necessary to implement

skill formation process, and this depends on the chief executive of the company having a great deal of experience in personnel management. This is only possible if trained staff do not leave the company and move to another company.

Other Japanese specific managerial skills are related to total quality control (TQC) techniques. The concept of TQC techniques has preoccupied the thinking of not only the Japanese but also the Indonesian executives in the company. The senior executives of the company often remind to departmental managers that the quality of the job will determine the quality of output and therefore every effort should be made to ensure the satisfactory application of total quality control techniques. These techniques are not only practiced on the factory floor but also at every level of management. Japanese TQC techniques have provided a good solid foundation for the manager to work effectively for the company to produce zero defects, low costs and high quality output. Drs. Rizal suggests that the total quality control concept is responsible for the high quality achieved through the just-in-time techniques. Everyone is expected to participate and contribute improving the higher quality of finished goods. In conclusion, he said that "TQC will provide a way of improving the product quality and the JIT or kanban provide a way to reduce costs"

4.2.4.3 General managerial skills

The challenges faced by managers of all organisations or institutions are immense. These challenges range from improving quality and productivity at the factory floor, to all levels of management. Managers should

acquire basic managerial skills to enable them to effectively deal with various challenges and problems confronting them in their duties. An objective of this study is to investigate the mixture of managerial skills, including conceptual skills, human skills, and technical skills, that have been acquired by managers during their employment with this company.

Hellriegel and Slocum, Jr. (1978) have suggested that the relative degree and mixture of the skills needed by a particular manager will depend on the level of management and the types of responsibilities assigned. An analysis of the basic managerial skills formation of the managers in KTB is, therefore, based on the particular responsibilities of manager. Before asking Drs. Rizal Dahlan how many of the general managerial skills had been acquired by him since he joined the company six years ago, he was first asked 'how many of the basic managerial skills had you acquired before joining this company ?. His answer was 'not very many for conceptual skills, not very many for human skills, and quite a lot of technical skills". This answer is understandable, given the fact that since completing his senior high school certificate, he has only worked for three years as general assistant to a non-Japanese construction company. He then stated that since joining the company he has "acquired a lot of technical and human skills, but very little conceptual skills". The reason given for only acquiring little conceptual skill are as follows: (1) He has been in his managerial position for less than three years, although he was an assistant manager for some years: (2) His position is not high enough to be

able to sit together with, or to have access to, the company's chief executive officers, and (3) he has not had enough exposure to international business issues. The last reason refers to his lack of experience of overseas off-the-job training programs in Japan or other countries. This is despite the fact that he maintains that in his present position he needs more conceptual and human skills than technical skill. He said that in the future he would concentrate on increasing and improving his conceptual skill to prepare himself to compete internally and produce more impressive working results for the company. The prospects and opportunities for him to acquire conceptual skill are there, but he said "whether I will be successful in developing these skills or not, will very much depend upon myself". Meanwhile, Drs. Rizal Dahlan is quite satisfied with the skills and experience he has gained since joining this company some sixteen years ago, given his personal problems and struggle to work his way up to his position.

KTB has a formulated training policy and programs. These programs are not only designed for technical and operative workers but also for managerial staff. Although it appears that the programs are formless and lack detail, there is ample opportunity for the company's managers to initiate and participate in company training programs.

In analysing the type and nature of the skills transferred to KTB, we have to look at skills in their entirety. Drs. Rizal was asked by this researcher how does he regard the managerial expertise and skills transferred to his company, compared to the managerial expertise and

skills in other companies operating in Indonesia and in advanced countries. His answer was that "in terms of managerial expertise and skills, the technology was very advanced and sophisticated when it was first transferred to Indonesia, and were not that different to advanced countries' technologies. And this company's executives are always updating and developing their expertise and skills of its managerial staff through training in line with changing technology. As a result, the company's products, in terms of quality and price, are very competitive in the market as reflected in the steady increase in production levels and sales".

The managerial expertise and skills acquired by, or transferred to, Indonesian local managers have been initiated and motivated by the managers themselves. This is due to their motivation to achieve success and 'prestige' condition of promotion in the company, rather than it being initiated or compelled by the Indonesian government. The success of a manager, according to Drs. Rizal, is the result of a group effort rather than an individual effort. It is therefore to be assumed that there is a good cooperative relationship among the staff. This relationship has become an important characteristic of the company. That relationship has also played a role in accelerating the smooth process of managerial expertise and skills transfer to the Indonesian managers.

However, one issue that remains and that is, to what extent are conceptual skills acquired by the Indonesian managers. This question, according to Drs. Rizal, is in everyone's mind and is a pressing issue.

Conceptual skills have been regarded by most managers as a necessity for them to execute their jobs. One of the company's managers, who declines to have his name mentioned, claimed that "the success of any managerial decision depends very much upon the conceptual ability to make a decision and then to put it into action". He exemplified this by stating that an important change in marketing policy will critically affect production, control, finance, research and development, and those who are involved in this process. It remains critical for every executive or manager who must implement such a new policy change. If each executive or manager recognises the overall relationship and significance of the change, he or she will almost certainly be more effective in administering it. Consequently the chance of it succeeding is greatly increased. Thus not only does the effective coordination of the various departments of the company depend upon the conceptual skill of the managers involved, but so does the whole future direction and tone of the company's organisation.

The high expectation of KTB's managers of acquiring the conceptual skill in the near future within the company reflects the importance they place on conceptual skills to help them execute their tasks. Conceptual skills become increasingly critical the more responsible a managerial position is and in such a position its effects are maximised and most easily observed. Discussion with Drs. Rizal reveals that a higher level administrators of company or departments regard conceptual skill development as the most important issues. Drs. Rizal comments that "one of

the most important lessons which I have learned from becoming the manager of the Delivery Department of Marketing Division, is the importance of coordinating the various sections and different employees into an effective team, and also to recognise the change of emphasis from time to time of the relative importance of various sections or employees to business activities".

It appears that the need for conceptual skill increases rapidly as position and responsibility increases. It is easier to acquire technical and human skills are because of early exposure to lower levels of administrative responsibility than conceptual skills, but later the need for technical and human skills become relatively less important.

4.3 P.T. UNICOR PRIMA UTAMA and P.T. INDOMOBILE UTAMA (THE INDOMOBIL GROUP), A JOINT VENTURE WITH HINO MOTORS LTD., THE SUZUKI MOTOR CO. LTD., THE MAZDA MOTOR CORPORATION, and THE SUMMITOMO CORPORATION OF JAPAN

4.3.1 Introduction

There are two companies that are the subjects of this part of study: P.T. Unicor Prima Utama, represented by Mr. Frans Wibowo whose position is Hino Marketing Director; and Indomobil Utama, represented by Mr. Djohan Widjaja, Senior Assistant to the Managing Director of Personnel & General Affairs. Both companies belong to the INDOMOBIL GROUP and have offices in the same building in Jakarta.

4.3.1 Background

The Indomobil Group was established in 1970 and started with the establishment of P.T. Indohero Steel & Engineering Co which produced Indonesia's first Suzuki motor cycles: the A 100, FR 70, and GT 100. In 1976, with a new management and under the leadership of Mr. Soebronto Laras as Chairman of the Executive Committee and President Director of the Indomobil Group, in 1976, the Group expanded its operation by establishing a new company called P.T. Suzuki Indonesia Manufacturing to support a program of producing not only motor cycles but also cars. After successfully operating for sometime, the Group in 1975 established a joint venture company with the Mazda Corporation to produce Mazda 626 and 323 sadans, and with a

joint venture Hino Motor Limited to produce the Hino super ranger bus and Bus AK chassis. In 1986 the Group expanded its operations by establishing joint ventures with Nissan and Volvo. However, it is the Group's joint venture with the Japanese corporations that have formed the basic nature of the Group's business operations and management. (Indomobil Group, 1990).

Since its establishment, the Indomobil Group has a number of companies under it, including: (1) P.T. Indomobil Niaga International (in collaboration with Suzuki Motor Co. Ltd., Japan) which operates as the sole distributor of Suzuki; (2) P.T. Indomobil Utama (in collaboration with Suzuki Motor Co. Ltd., Japan) operates as sole agent for 2 wheeler Suzuki; (3) P.T. Unicor Prima Motor (in collaboration with Mazda Corporation and Hino Motor Ltd., Japan) operates as sole distributor for Suzuki in Indonesia; (4) P.T. Nayaka Wirawan (in collaboration with Nissan) operates as sole distributor for Nissan in Indonesia, (5) P.T. Central Sole Agency (with collaboration with Volvo) operates as sole agent for Volvo in Indonesia, (6) P.T. Indohero Steel & Engineering Co, operates as in house supplier of 2 wheeler and 4 wheeler engines; (7) P.T. Suzuki Indonesia Manufacturing operates as in house supplier of chassis, press components and steering system; (8) Hino Indonesian manufacturing operates as in-house supplier of engines, steering and press components; and Suzuki Engine Utama operates to produce automative engines.

Indomobil Group has around 20,000 employees and that includes 2,000 employees working in the Suzuki related companies or group. Around 3,500 work in P.T. Indomobil

Utama, 189 employees in Suzuki Engine Industry, and 45 employees in Hino Indonesia Manufacturing. It has plants in Pulau Gadung, Bakasi, West Java, and in East Java.

In terms of ownership, the shares of these above companies are mostly owned by the Japanese counterparts, which explains why many Japanese are positioned in these companies as President Director, Director, technician, supervisor or as expert. From the perspective of ownership, the Indonesian partners regard these companies as their own, and the Japanese, because they have a majority share in the companies, regard the companies as their subsidiaries. Although the number of Japanese in the companies is small but they always occupy key positions leading the company often with Indonesians as deputies. However, at the manager level, all positions are occupied by Indonesians. From a strategic point of view, the placement of Japanese in key positions indicates the controlling power possessed by the Japanese, and the Indonesian partners see it as "just to maintain the top quality standards" of the goods produced (Indomobil Group, 1990, p. 14).

4.3.3 The system of management employed

Both Mr. Frans Wibowo, Hino Marketing Director - Unicor Prima Motor, and Mr. Djohan Widjaja, Senior Assistant to Managing Director, Indomobil Utama, stated that their respective companies employed the Japanese system of management, though not fully. The system has been modified and practiced since the commencement of the companies' operation. Mr. Wobowo argued that "the lack of

facilitators and time, as well as a different environment in terms of culture, habit and system, responsible for difficulty in fully implementing Japanese system of management". Nevertheless, a great deal of the Japanese system of management practices are being utilised in his company. This is because of direct Japanese involvement within the company. It was pointed out to the researcher that the direct involvement of the Japanese executives, advisors and experts with the companies began the establishment of the company, and they who set up and designed, the guidelines to practice the Japanese system of management. That is why Mr. Wobowo said that "the Japanese system of management has been dominant in the company and the system itself has become a model for the company's business administration and working systems".

Some aspects of the Japanese system of management practices are not fully employed applications, namely:

- (1) Seniority based promotion and pay systems. In both companies, promotion and pay are only based on both seniority and also on performance. Although the system adopted here is basically the Japanese one, the seniority system concept has to be accompanied by working performance, and those who can show success in his or her job will get priority for promotion and/or an increase in pay. In addition, the company has created an environment within the company where everyone is motivated to compete and perform well and achieve targets;
- (2) A life-time employment system. This system is implemented only in theory and not in practical terms,

because to employ such system the company, according to Mr. Wobowo, must provide conditions that encourage employees to enjoy working in the company. The conditions referred to here are very basic such as a comparable level of salary with other companies outside the Group, various relevant allowances such as health, recreation and, family guidance, and facilities such as sport and accommodation. The company is not yet able to provide these conditions to its employees. In other words, the company has to be able to make the employees feel secure for their future prospects and 'feel at home'. Only when these conditions are fulfilled "can we raise the employees' sense of belonging to the company". Although at this stage "we can feel that we have, in some degree, a sense of belonging to the company, but that sense may fluctuate depending on other conditions within the company and offers from outside". Nevertheless Mr. Wibowo said that the labour turnover here is very low. This suggests that the company is still competitive and healthy.

- (3) Job rotation system. Mr. Wibowo explained that although he attended some of the company's on-the-job and off-the-job training since his appointment to his current position he has not been rotated to different jobs. He recognises that job rotation is one of the factors of the training program of the Japanese company to develop employees' skills and knowledge. Job rotation seems to be practised only at lower levels (clerical and technical workers) and not at managerial level. The job rotation system as implemented in the plant or in the

office, was part of the on-the-job training program given to technical and administrative / office workers. Although, Mr Wibowo argued that the job rotation program seems nothing to do with formal on-the-job training, it would seem to play an important role in the company's skill formation program. However, the skill formation program for managerial or directorial staff is different from that the technical and clerical staff.

The techniques of just-in-time (JIT) or **kanban** techniques and total quality control (TQC) techniques were both just introduced into the company just over two years ago, despite the fact that the company had been in existence since the early 1980s. The introduction of these techniques was in line with the creation of quality standards that have to be followed by the company. Mr. Wobowo acknowledge that application of these techniques still in its early stage and the employees involved in the production line in the plant are still developing their skills under the direct supervision of Japanese experts. The introduction of these techniques was accompanied by some difficulties. Mr. Wibowo maintained this was due to

- (1) what he termed a 'lack of facilitators', that is, a lack of well prepared training programs, and of intensive direct supervision by those personnel who understood the culture and language of the workers being supervised; and
- (2) a lack of time for the employees to really learn and understand the whole concept of both JIT and TQC.

The manager or director may understand the concepts, but

when it comes to implementation, the manager or director has to put aside some of his or her valuable time in order to become fully get involved in the implementation of these techniques. In the case of Indomobil Utama, Mr. Widjaja maintains, the process of implementing both techniques has been quite smooth. It has been implemented to some degree in various levels of the production process, particularly at the plant.

The Japanese system of management adopted by companies in Indomobil Group as exemplified by Unicor Prima Motor and Indomobil Utama, in theory, provides room for the company to give special consideration to employees' personal welfare, as is commonly practiced in the Japanese companies in Japan. However, the implementation of such practices in Unicor Prima Motor, according to Mr. Wibowo, is still limited. The future development and growth of the company, Mr. Wibowo argues, is expected to help extend the current company's welfare programs. The same is also true for the development of Japanese long-term planning techniques. The techniques, though already practiced, and still hard to monitor closely. The planning of the company is really a top level executive task. As the top executives of the companies (Unicor and Indomobil) are dominantly Japanese, one may expect that policy making, strategy design and formulation of planning, are hardly shared with the local managerial staff. As pointed out by Mr. Widjaja, the techniques used to develop the company's long-term planning are the Japanese techniques, but the ultimate decision is still in the hands of the Japanese at headquarters in Japan. The Indonesian managerial staff are

only involved in information gathering as required by the company's decision making proces. The Indonesian managerial staff realise the importance of, and need for, the company's long-term planning. The same situation is basically occurring in the Unicor company as was pointed out by Mr. Wibowo. In fact, Mr. Wibowo thought that the planning systems and techniques used in the company are "much more Indonesian than Japanese". It is, however, not clear as to whether this is because the Japanese top executive officers' are reluctant to allow Indonesian managerial staff to get involved in the planning process (the Japanese are often said as always to keep secret the company's strategic policy), or because of the Indonesian managers' inability to undertake planning, or for some other reason. We can not know the real reason, but the researcher learned there that there were many Indonesian managerial staff who did not know precisely the nature of the real long-term strategic planning techniques and strategies employed by the Japanese, and therefore knew little of the practical application of the Japanese system of management long-term planning techniques. If that is the case, how will the Indonesian managerial or directorial staff acquire the Japanese system of management?. The following section addresses this very question.

4.3.4 Managerial skills formation and training

There is not much information gathered from the experience of Mr. Djohan Widjaja who works at Indomobil Utama as he has not yet participated in the company's management training program. Mr. Widjaja had 20 years

working experience with the Caltex Oil Corporation before joining the present company 3 years ago. His employment background may explain why he has not taken part in the company's training programs. The company itself has a formalised written training program designed for both managerial and technical staff. At present the company does not have its own training center and has just entered into a collaboration with P.T. Intisalim to conduct company off-the-job training programs for managerial staff. This suggests that the training of company managers does not necessarily lie with head- quarters in Japan as is normally the case with most Japanese controlled companies. However, those who have participated in such off-the-job training programs for managers stated that language has been a common problem in attending training in Japan.

Indomobil Utama has provided various modes of managerial staff training such as:

- (1) attending short course programs, seminars, conferences, and executive development programs;
- (2) the off-the-job training program; and
- (3) the on-the-job training programs.

Most training conducted so far has been given to production-related managers, and the training is aimed at acquiring completely new skills and knowledge in the same field.

But the training that has been provided by the company to its managerial and technical staff thus far has been more "through in-house training than through educational institution training". This fact indicates that the company puts greater emphasis upon on-the-job training

as the main mechanism of managerial skill acquisition than any other modes of training. The fact also indicates, as argued by Mr Widjaja, that "the training program and its organisation needs to be improved further, and more coordination is needed because the company is part of a large group of company and is growing". If this can be done the company's training program can be more effective and productive. The effectiveness of the program itself, Mr. Widjaja argues, depend to some extent on the right selection of the modes of training. He suggests that the company's managerial staff training program should utilise four modes of training. They are: on-the-job training; off-the-job training; formal training, that is, by attending university; and counterpart system, namely, working at another company. He said, however, that the latter system might be difficult to undertake, especially with other unrelated companies, because such a practice might be considered by other companies as "business spying".

The above discussion on Indomobil Utama and the experience of Mr. Widjaja, illustrate almost the same features as does the case of Unicor Prima Motor as experienced and observed by Mr. Wibowo. Mr. Wibowo, whose working experience a Director of Marketing for 6 years with the company, has participated personally in the company's managerial training both overseas and in Indonesia. He has attended all types of training. They were mostly intended to up-grade and expand the skills or knowledge he already possessed. By doing so, he expected to be able to assist himself in performing his duties more effectively and productively. However, he was disappointed because, as he

said, "In reality, I did not find the training I attended had any relationship or relevance with, the job I am doing. It only gave me new views and visions about general things that were not very useful in accomplishing my tasks". He said the company now sends three managerial staff to Japan to attend management training. The training that was usually attended was "a cross cultural management training program to provide a new dimension to and perspective on, international cultural differences. Most of the training apparently adopts too much theoretical rather than practical approach". Nevertheless he said, "when I have time I will always make an effort to attend any training program recommended or approved by the company's executives". But of his experience participating in the company's management training program in Japan, he said it "provided me with a new dimension to my understanding the global or international operations of Japanese companies, at least seen from the point of view of the company where I am working". He went on to say that " the result of my managerial training in Japan is a 'big zero' in terms of its practical utilisation for my task to solve problems I face in the company". With regard to the various modes of training provided so far, Mr. Wobowo believed that "on-the-job training and the counterpart system are the most effective ways for managerial staff skill formation".

Having looked at the way the Japanese company develop the skills and expertise of its managerial staff, it seems that the managerial training program is very limited in terms of the company's interests and needs, and is not in the interest and needs of the managerial staff concerned.

Such a situation is reflected in the way the management training is provided. As pointed by Mr. Wobowo, "not all managers working in the company are given an opportunity to participate in the company's management training program". Management training is undertaken "only when needed at any time by the company's executives, not when needed by the manager". When Mr. Wibowo was asked by the researcher the following questions : 'do you know if there is any Indonesian government foreign investment regulations which compel the investors to transfer their skills and expertise or knowledge to the Indonesian managers or directors like yourself?'. His answer was : "No. there is none. The Indonesian government is still very weak in negotiating with foreign investors because of many reasons. Indonesia still very much depends on foreign capital and technology, especially the latter. But Indonesia must realise that it has some strong bargaining power with respect to its political stability, cheap labour costs, a lot of natural resources, loyal workers who were prepared to work harder, and big market potential". If that is the case, "how significant is the Indonesian government's directive guideline to foreign investors to make a speedy process in developing Indonesian managerial staff skills or potentials ?". His response was "Not significant, but it does to some extent motivate the company to provide training to local managerial staff, but planning should, however, be seen in relation to the strategic goals of the company which may determine the degree of importance of management training".

In the absence of formalised training programs, the company's skill formation, however, can be seen from a different angle, that is, in terms of the role played by local managers or directors in running the company. In Unicor Prima Motor, most departmental positions in personnel, finance, transport, administration, factory foreman, and logistics are occupied by Indonesian managers. In terms of the company's responsibility, the execution of company planning is given to Indonesians, and this should be regarded as "progress on the part of the company's executives". Placing local managers in those kinds of position suggests some degree of skill transfer to local managers. The rationale is that by having occupied a top position in any one department within the company, the person concerned will learn naturally the working system and the operation of the department he or she leads and automatically the position the company as a whole. Although the degree or nature of the power and authority of anyone appointed to occupy a position may be limited, on the appointment of local managers provide a good opportunity for local managers to develop managerial skills and expertise. That opportunity can be regarded as one form of the manager's skill formation process.

4.3.5 Type of skills acquired

There are three types of skills that are the focus of this research's investigation, namely, functional skills, Japanese specific managerial skills, and general management skills. It is expected that Indonesian managers or directors, to some degree, acquire these skills. The

acquisition of these skills might be expected to be integrated with the management system adopted by the company. In the case of Unicor Prima Utama, the Japanese system of management is the system predominantly employed in the company. However, as stated by Mr. Wibowo, "the application of the Japanese system of management is blended with the Indonesia system of management or the Indonesian socio-cultural and political environment". The blending of two components, on the one hand the framework of the Japanese system of management, and on the other hand the elements of the Indonesian socio-cultural and political environment, make it an interesting subject to expose the actual acquisition or transfer of skills by Indonesian managerial staff.

Mr. Wibowo's experience in participating in various management training programs in Japan stated that the result was a "big zero" in terms of its application to solve problems he faces in his work place in Indonesia, because, he said, "what was given in that training were too theoretical and the subjects presented were already known by me". Mr. Wobowo, however, argued that his employment with the company as Director of Marketing did "provide him a lot of general functional or professional skills such as accounting, finance, administrative, marketing, and so on". However, he said "it is natural that such skills are automatically acquired by any one when he or she occupies a certain directorial or managerial position". Another point that can be seen from the Japanese controlled company is that the Japanese executives as much as possible direct their staff to work within a predetermined set of policy

and working mechanisms as practiced in the company's head quarters in Japan. That is why, Mr. Wobowo said that "the Japanese executive or experts always want you to work according to their guideline". "That", Mr. Wobowo said, "does not mean that we are not given freedom to work here, no. In fact, the Japanese model of working is very relaxed but disciplined, and you can do your job in your own time with your colleagues as a team, but you must produce results".

The direction given by the Japanese to their local managerial staff was felt by the local managerial staff to be too 'rigid' and not flexible enough, and it was particularly felt so by those managers whose previous working experience was with Western companies, because many of them believe that the Japanese working system or its system of management places too much stress on cooperative effort or team work rather than individual effort and high personal achievement. That system, according to Mr. Wibowo, often frustrates local managers who feel that their contribution is not properly appreciated. Nevertheless, the end, it was recognised and conceded by the Indonesian managers that "the system being applied is the Japanese specific system that may be strange or new to those who have never heard it before. The application of the system seems unavoidable as no viable and commonly acceptable alternative exists to the system. But the most important aspect of all, is that the Japanese are the senior partner in the joint venture and they have greater power to say or decide almost anything they want to, including the system of management practices".

Mr. Wibowo later added that the application of the Japanese system of management "has provided me with a great deal of knowledge and understanding as to what the Japanese system of management is all about". He was then asked by the researcher 'how much of the Japanese specific skills, such as just-in-time (JIT) or **kanban** techniques and total quality control techniques (TQC), have been acquired by you?'. He answered this by saying that "I acquired very very little JIT or kanban skills, but acquired a lot of TQC related skills". He said this was, because, (1) the techniques were instituted in the company some two years ago, and (2) the training provided very little practical knowledge regarding the application of the techniques". However, Mr. Wibowo again conceded that the techniques and the associated skills are the property of the Japanese and they represent a competitive advantage for the Japanese. Therefore, it is understandable as to why the Japanese do not really want to transfer these skills to the outsiders. Indeed, the Japanese are very keen to learn anything that is new to them, but they are very reluctant to give away anything they know especially concerning business practices. Mr. Wibowo stated that "the Japanese communicate and relate very little with locals and they generally interact with their own people at their own club". This suggests, he said that the Japanese company's operation in Indonesia are concerned mainly with profit accumulation rather than of developing the local managerial staff's skill acquisition. Thus he said "I mean to say that the Japanese learn much more about our Indonesian system and management skills than Indonesian managers or directors

learn above or acquire, Japanese technical and conceptual skills of business operation in Indonesia". In practical terms, Indonesian managers seem to acquire only a great deal of labour management skill. This is not because the Indonesian managers practiced a Japanese system of labour management, but is because the Indonesian managerial staff are given authority and power to involve themselves and deal directly with labour problems in Indonesia, problems that the Japanese seem to try and avoid. This direct involvement allows them to acquire labour management skills. But some question the type of labour management skills they acquired, because in the final analysis, the Indonesian managers are really conducting labour matters according to the Indonesian system rather than the Japanese system. This is why the Japanese executive in the company appoints an Indonesian to be in charge of the labour or personnel section. One can in fact witness the application in the same organisation of two system of management, the Japanese and the Indonesian system of management. The question was put whether 'the two types of systems can work together in harmony Mr. Wobowo replied, "it is hard to say, but harmony on the surface seems to exist, but it remains to be explored whether the manager is personally happy with the fact that at the end he or she is only regarded as 'a robot' who is always ready to be pressed into action".

By and large, it is acknowledged by those working in the company, including Mr. Wibowo, that they have understood the strategy and policy of the company's operations, and therefore acquire, to some extent,

managerial skills such as functional skills as well as Japanese specific managerial skills, while working in the company.

In the meantime, the managers working in the company acknowledge the importance of general managerial skills, namely, conceptual, human and technical skills. When Mr. Wobowo was asked whether he had acquired these skills, he said "not very much except technical skills". He indicated that technical skills were the most relevant managerial skills to his current job, but he intended to acquire more human skills in the future. However, this is subject to his prospects for promotion. He regarded human skills as essential and a vital part of everything the manager or director does, examples of inadequate human skills being easier to describe than were highly skillful performance.

He maintained the human skills, with regard to his marketing responsibility, is his ability to work effectively as a group member and to build cooperative effort within the team he leads. In other words, human skills are primarily concerned with working with his staff within the division. However, he was not quite sure as to whether he would be able to have an opportunity to acquire these skills in the future, because he would be very busy with his work. With regard to the technical skill, Mr. Wobowo stated he had acquired such skills, as evidenced in his understanding of, and proficiency in, a marketing activities, particularly those involving methods, processes, procedures, and techniques of marketing. He regarded marketing technical skills to be involved in specialised marketing knowledge, analytical ability within

marketing, and a facility in the use of the tools and techniques of marketing. He believed that his marketing technical skills were acquired not because of his participation in management training in Japan or in Indonesia but because of his strong involvement in his work and with his own staff in the marketing division.

**4.4 P.T. MESIN ISUZU INDONESIA, INDONESIA, THE
ISUZU MOTOR LIMITED, C.ITOH & CO LTD., and
TOYO MENKA KAISHA LIMITED, JAPAN**

4.4.1 Introduction

P.T. Mesin Isuzu Indonesian is a joint venture company between Indonesian companies, Japanese companies and a United States company. There were three visits made to this company. The first visit was to make an appointment to meet and talk to one of the Japanese executives and to one of Indonesian managers working, but was unsuccessful, after waiting almost thirty minutes waiting for a reply, because the researcher was told by the company's office staff that "the Japanese executive is busy and not available for an interview, but please come back next week". An appointment with an Indonesian manager was successful for the next week, but he asked the researcher to observe a condition of not discussing the company's financial matters and dealings in Indonesia. The researcher agreed with that condition. An interview was next made with an Indonesian manager, Drs. Fachruddin Latief, Assistant to Director of Sales and Marketing Department. The attempt to have an interview with the Japanese executive was not successful.

The first interview with Drs. Fachruddin Latief, an economics graduate, lasted for only about 40 minutes, but he agreed to have a second interview, which lasted for almost two hours. After completing the interview the

researcher asked Drs. Fachruddin if he could provide published company documents, but he declined to provide either published or unpublished company material, such as annual reports, brochures, or leaflets, except for pictures of company products.

4.4.2 Background

P.T. Mesin Isuzu Indonesian is a Japanese controlled subsidiary company which has a head office right in the very center of Jakarta and a plant site of 55,000 square meters in Tangerang, just outside Jakarta. The company was established in February 1983 and started operating in May 1985. As at the end of October 1989, the company had 104 workers consisting of 4 Japanese expatriates (3 members of the Board of Management and 1 manager) and 100 Indonesians including 3 members of the Board of Management, 12 managers, and 85 workers. The composition of the company's Board of Management is: President Director Mr. Sugimoto (Japanese); Vice President Director Mr. A Malik (Indonesian); and the Directors are 1. T. Maruo (Japanese), 2. Drs. T. Yokota (Japanese), 3. Mr. Soemarmo WS (Indonesian), and 4. Mr. Laupase Malau (Indonesian). At present, the company has around 150 employees.

The company has an authorized capital of US\$ 15,400,000.00, and of which 44% was paid up. The shares of the company were owned in the following proportions. The Indonesian companies' shares are: 21% owned by PT. Garmak Motor; 21% owned by PT Panca Motor; 7% owned by PT. Indauda. The Japanese companies' shares are: 25% owned by

Isuzu Motor Limited; 8% owned by C. Itoh & Co. Ltd.; and 8% owned by Toyo Menka Kaisha Ltd. The United States share is 10% owned by General Motor Corp. These figures suggest that the majority ownership of company is the Japanese.

The company manufacture various models of Isuzu automotive diesel engines with 15,000 units produced per year. Technology used to produce these engine comes from Japan.

4.4.3 Principles and System of Management

Drs. Fachruddin described three working principles that are emphasized within the company. Firstly, there is the **on time** principle. This principle appeals to all members of the company's staff to start working on time and to produce and deliver products and services according to specification on time. This principle, according to Drs. Fachruddin, is one of the main concepts in the Japanese just-in-time or **kanban** technique that is being implemented in the company. Secondly, there is the **cost down** principle. This principle directs the company to always pursue high quality output and to lay stress on the reduction of production and operational costs. Thirdly, there is the **target oriented** principle. This principle demands that everyone in the company sets his/her own target and works to achieve the previously set target.

The principles of the company's system of work have been developed within the framework of the Japanese system of management principles. Drs. Fachruddin stated that the three principles mentioned above may not be entirely

derived from the Japanese system of management. Nevertheless, the essence of the principles seem very much to reflect Japanese business philosophy. This argument, according to Drs. Fachruddin, is based on the fact, "every worker here is pushed to have a certain field of expertise in accordance with his/her responsibilities. And every manager is encouraged to make progress and to have a capability to accomplish the duties assigned to him/her".

What is implied in Drs. Fachruddin's statement is that the company very much emphasizes individual ability to do a job or assignment rather than being based upon a collaborative or cooperative effort, as is normally understood in the practice of the Japanese management system. The emphasis on individual ability implies that a manager or staff member must improve and develop his/her own skill to be able (1) to successfully achieve the target set earlier, and (2) to compete with other managers to perform well. Drs. Fachruddin stated that the most important criteria for promotion (whether in position or for pay rise) is personal performance in achieving the predetermined target. This criteria seems in some degree to be in contrast to the Japanese system of management which specifies 'seniority', not individual achievement, as the main basis for promotion.

This suggested that the operational management of the company, according to Drs. Fachruddin, followed a mixed system of management, that is, a mix between the Japanese system of management and the Indonesian system of management. This mixed system of management , Drs.

Fachruddin argued. " is not in any way to suggest that the Japanese system of management is not relevant or inapplicable in the Indonesian environment, but it really suggests that the Japanese system of management needs to be modified to be implemented effectively in a company where the majority of employees are Indonesian". Drs. Fachruddin did not elaborate as to what he meant by an 'Indonesian system of management', but stated that the basis of this company's operation fundamentally utilised the Japanese system of management.

The utilisation of the Japanese system of management in the company is quite widespread. When the researcher asked Drs. Fachruddin 'to what extent are Japanese management system components practised in this company ?'. His to-the-point response was "(1) a life-time employment system is fully implemented, (2) special consideration of employees' personal welfare is partly practised, (3) a seniority-based pay system is partly implemented, (4) decision-making by consensus is fully implemented, (5), democratic and participative management system is implemented, (6) a group, rather than individual, responsibility is not implemented, (7) on-the-job and off-the-job training is implemented, (8) job rotation is not implemented, (9) long-term planning system is indeed practised in the company, as executives here are dealing directly with the parent company in Japan, (10) Japanese labour relations management is not implemented but Indonesian labour management is applied, and other production management practices such as TQC (total quality

control) and JIT (just-in-time) techniques are fully implemented".

Although the Japanese system of management is not fully applied in this company, Drs. Fachruddin pointed out that "there appears to be no viable alternative system to replace the Japanese system".

The implementation of the Japanese system in the company has been responsible for shaping the operation and orientation of the company. In the plant, all operations or techniques used follow the Japanese production management system where JIT and TQC have become the fundamental principles in production. The operation is very effective and productive according to the principles of the Japanese production management. The same kind of principles are also found in the company's offices which have been designed to reflect the Japanese working environment where the set up of the offices is not separated by partitions. The set up of such an environment is aimed at creating an impression of openness and togetherness between executives and other staff members. Apart from this, the real Japanese environment is manifested in the day-to-day operation of the company. Drs. Fachruddin gave an example of this with regard to the decision making process. In his marketing department, a decision is made only after long discussion with other staff including company's executive members, and the decision reached is by consensus. It seems that it takes quite a long time to make any decision. However, because the decision making process involves a wide participation by the company's staff, the decision process

is regarded by Drs. Fachruddin as not only very democratic, but also as a platform to develop shared responsibility among employees or managers. At the same time, the process is intended as a 'learning process' for managerial staff to understand the application of the Japanese system of management and to forming their managerial skills.

4.4.4 Managerial Skill Formation Process and Training

The mechanisms used by the company to forming the managerial skills of the Indonesian managerial staff, in many respects, is similar to other Japanese controlled subsidiaries in Indonesia or in other developing countries. There is, however, one basic difference in that there is no follow-up management training given to managerial staff to develop their managerial skills. This is understandable because the company does not have any formal written training program for its employees. The only management training given to managerial staff is only when they first join the company. The only training provided was on-the-job management training, and that training, according to Drs. Fachruddin, is really 'an introduction program' or induction program. The program, which lasted for three months, is designed, among other things, for the newly recruited managers to get to know (1) the physical setting of the company, (2) the mission of the company, (3) the business of the company, (4) his/her areas of activities and responsibilities as well as to understand other managers' tasks and responsibilities.

The three months managerial training program is in

fact the beginning of the manager's tasks and responsibility for his assigned position, and during and after the training period the manager works in his/her only department as no job rotation is applied to the managerial staff. The time table of the three months training program was not detailed, except it was expected that the manager was to be able to do his/her job after one month of the training period. Apart from this three months training program, there was no other type of management training given to managerial staff, except for technical staff who are provided with both on-the-job and off-the-job training in Indonesia and Japan.

The researcher then asked Mr. Fachruddin 'how does the company develop the skills and knowledge of its managerial staff?', and in the absence of management training 'how do managerial staff improve their expertise in light of the company's promotion criteria which requires manager to be exceptionally capable?'.

As there was no formal and elaborate management training for managerial staff provided by the company, Mr. Fachruddin suggested that "the managers themselves have to rely on their own initiative to learn how the company is run under the control of the Japanese by, for example, making note the company's approach to its environment, the formulation of policy and strategic direction, and to undertake self study of Japanese-related specific managerial skills and knowledge". However, Mr. Fachruddin noted that most of the managerial staff were too busy with their work to do such things. This leaves them with no

other option for developing and acquiring the relevant managerial skills and knowledge other than 'learning through experience'. Meanwhile, there is another mechanism of managerial skills formation, namely, through direct involvement in the company's management meetings. This involvement can be regarded, in some ways, as a replacement for a job rotation program, because the meetings are attended by personnel from all divisions within the company. Everyone in the meeting is urged to understand fully what other managers or divisions are doing. To accommodate this, every manager is given the company's overall flow chart of activities which consists of each division's working priorities. Through this method, every manager is encouraged by the management system to participate in the program. This participation is seen by Drs. Fachruddin as " one of the managerial skill formation methods adopted by the company".

The absence of a formalised training program for managerial staff has lead some to start questioning of the company's intention of developing local managers' managerial skills and expertise. There is no apparent reason as to why the company does not provide management training to local managerial staff. Drs. Fachruddin provided some possible reasons for the absence of management training, might be because of (1) the company's cost reduction policy. This policy is seen by Drs. Fachruddin as not only implementating one of the company's 'cost down' principles but is also a reflection of the company's recent performance where only in the last two

years of operation did the company experience a profit, (2) Lack of training facilities, and (3) company executives may have thought that the managerial staff are still quite capable of accomplishing their duties with their existing skills and expertise. Drs. Fachruddin commented that these reasons maybe acceptable for the time being, but in the long run the company needs to give greater attention to this issue because management training, according to him, "should be part of the company's commitment and program to develop its human resources for the long-term benefit of the company itself".

In view of the above reasoning, the researcher then asked Drs. Fachruddin 'whether he knows the existence of Indonesian government regulations which require a foreign company to provide skills training to local employees' and 'how significant are Indonesian government regulations in compelling your company to provide training to local managerial staff?'. His answer to the questions was "yes, the Japanese executives know of the existence of the government regulations that require the technology transferor to provide skills training to local employees. But the regulations appear to not affect and compel the company to provide the training". This fact appears to suggest that there is no apparent significant pressure from either inside or outside the company to provide management training. It seems that the company will keep its current policy for sometime a long as there is no change in the current position of either the government or company concerning the concept and direction of technology and

skills transfer from overseas to Indonesia. Drs. Fachruddin pointed out that "the current Indonesian government regulations are not clear and firm enough to force a foreign technology transferor to transfer managerial skills to us, the technology recipient. Therefore, the Indonesian government should look at its foreign investment policies if a significant transfer of skills is to be realised".

4.4.5 The Nature and Extent of the Managerial Skill Acquired.

4.4.5.1 The Japanese Specific Managerial Skills

The ultimate question that the researcher wanted answered was 'whether Indonesian managerial staff acquire any managerial skills during their employment with the company?'. The answer to this question was provided by Mr. Fachruddin.

The skills referred to here are those skills associated with the application of various elements of the Japanese system of management. The Indonesian managers' involvement in implementing the system has provided them with these skills. This involvement suggests that the skills, according to Drs. Fachruddin, are acquired not at formal management training but through practical working experience, direct observation at the workplace, and through self study. He considered that he has acquired 'enough' Japanese specific managerial skill since he started working almost four years ago, especially with respects to JIT or *kanban*, TQC, marketing, and some aspects

of running the company. But again, Drs. Fachruddin noted that the amount of those skills acquired by him may not be as much as it should be, if he had provided opportunities to take part in management training.

The JIT, TQC, and work philosophy such as the decision making process, labour-management cooperation and group harmony related skills, were the main skills were acquired by him. The acquisition of these skills was felt by him to be (1) the skills are new to the Indonesian system of management, and (2) the skills are the product of the proven system of Japanese management which produce good result and successful team work. Furthermore he indicated that one of the most important part of the Japanese specific management skills is the one closely related to his duties and responsibility 'marketing'. The chief of the marketing division is an Indonesian with a Japanese as a deputy. However, although the Japanese is at the second position in this division, the whole direction and decision is in the hands and control of the Japanese executive. The executive direction, according to Drs. Fachruddin, is very much guidance which is given during a weekly evaluation meeting. In the meeting, his past week's performance is evaluated, and through this evaluation process, he learns the concepts of Japanese management marketing system including its techniques and strategies. However, it was suggested by Drs. Fachruddin that the local market environment of Indonesia is different to the Japanese local market. This difference is reflected in how business deal and negotiations are conducted in Indonesia. Technically

Indonesian know more than the Japanese of how to conduct marketing technically in Indonesia and that is why the company appointed an Indonesian to be the front line of the marketing division. Drs. Fachruddin's experience in working in the marketing section has led him to believe that "very little of the Japanese concept of marketing techniques, strategy and system can be implemented in the real world of Indonesia, and much of the marketing concept applied are Indonesian or are drawn from the Indonesian model as normally practised in Indonesia". However, he recognises that "the Japanese system of management as applied in this company has given me a new understanding of marketing in particular and of business operations generally. And I also learnt about the Japanese obsession to achieve long-term profit objectives and greater market shares".

One of the company's staff commented that the implementation of the Japanese marketing concept would be best implemented in concert with other elements of the Japanese system, it may not produce a good result if it is practiced in isolation, that is, independent from other elements of the overall Japanese system such as TQC and JIT, unionism and consensus concept.

4.4.5.2 The Functional Skills

Functional skills consist of those skills that are related to a manager's position and the responsibilities assigned to him/her. Drs. Fachruddin was asked by the researcher 'how many functional or professional skills have you acquired since working with this company?'. His answer

was "quite a lot". However, he explained that his acquisition of such skills has been assisted by his close attention and observation in the work place of how things are done and his earlier background. Therefore, he said that "I can say that the degree of a manager's acquisition of these skills, to some extent, depend upon the manager's (1) previous working experience and exposure, (2) educational background, and (3) the system of management adopted by the company where the manager works. And had I not had such earlier experience and background, I do not believe that I could have acquired the relevant functional skills in this company".

Drs. Fachruddin placed a great deal of emphasis on the role of the "management system" practised in the company which accommodated the manager in acquiring the skills. Drs. Fachruddin's explanation appears quite acceptable considering the practices of the Japanese system of management. The system as widely understood, allows the manager (a) to interact with other managers and executives through various meetings held within the company, (2) to be directly involved in the decision making process , and (3) to participate in the company's job rotation program. Although job rotation at managerial level is not practised in this company, the company working system as such has assisted managers to understand the company's operation as a whole, and therefore, to acquire the skills that result from that understanding.

Among the skills Drs. Fachruddin feels he has best acquired are marketing related skills. This is because his

duties and responsibility lies in the marketing department. He believes that he has gained a financial management related skills the least because "this key position of financial affairs is under strict control of the Japanese, and only the Japanese know precisely the exact position of the company's finances". In terms of managerial positions, although Indonesians occupy most managerial position, but the key positions in the company, such as chief executive officer, and heads of finance department, the production department, and the technical and engineering department; are occupied by Japanese. This suggests that the Japanese are fully in control of the company's operation. Drs. Fachruddin points out that the Japanese may have followed Indonesian government directive policy which appeals to foreign companies operating in Indonesia to promote local employees to managerial positions if there are the Indonesian employees capable of filling these positions. In other words, foreign expatriates are only permitted if qualified Indonesian are not available.

The nature of the functional skills acquired in the company, according to Drs. Fachruddin, is in many respects different from those skills found in many other companies. The difference lies in the Japanese context where functional skills as found in Japanese companies, are characterised by the corporate culture of, and implemented within the framework of, the Japanese system of management. When one examines the nature of such Japanese skills, one finds a unique aspect to the skills. The uniqueness is found, according to Drs. Fachruddin, in the way the skills

are utilised within the Japanese philosophy of work. Japanese working philosophy is essentially characterised by (a) its close relationship between staff and executives, (b) group instead of individual responsibility, and (c) a high level of working freedom and discipline. Therefore, the nature and type of functional skills acquired in Japanese subsidiaries such this company may be seen from this light.

4.4.5.3 General Managerial Skills

The relative level and mixture of general managerial skills needed by a particular manager will depend on the level of managerial position and type of responsibility assigned. The extent of the skills acquired by a manager can be measured in terms of the manager's position and responsibility. In view of this rationale, Drs. Fachruddin was first asked by the researcher 'how important to you are the various components of the general managerial skills while working in your current position ?'. He was then asked 'how much of the general managerial skills, conceptual, human, and technical, has been acquired by you since you joined this company ?'. This question was asked while taking into consideration his previous work experience prior to this company.

His answer to the first question was that "conceptual and human skills are very important compared to technical skills. I regarded the possession of these first two skills has been extremely important for the effective execution of my kind of duties in the marketing field". He

elaborated on his answer by saying that the approach to marketing issues is an integrated one where every aspect of a company's internal and external environment is evaluated then a marketing strategy is formulated. The implementation of marketing strategy requires marketing people to deal with both human (i.e. consumers) and organisational (e.g. competitors) factors. Considering both these factors, he argues, a marketing manager at a higher level increasingly needs conceptual and human skills. Drs. Fachruddin pointed out that as "the company has grown faster in the last two years I increasingly needed conceptual skills. Because as the company grows, marketing work has become more complicated and sophisticated, and I increasingly feel the importance of conceptual skills, because conceptual skills will enable me to formulate various strategic decisions and position the company in the market, while human skills help me to deal with and communicate effectively". Recognising the importance of the first two skills, he responded to the second question by stating that "I am still developing and acquiring both conceptual and human skills, because I feel I gain much more technical skills than conceptual and human skills since working with this company. Therefore, I am concentrating on acquiring conceptual and human skills". However, Drs. Fachruddin is not quite sure whether he will have an opportunity in the future to develop and acquire those skills, because, he maintained, it will very much depend upon (1) his own performance in the job, and (2) the performance and growth of the company as a whole. Apart from these two points, his prospects in developing and

acquiring the skills is not that promising, since, according to Drs. Fachruddin, there is no management training program provided to managerial staff, and there is the weak position of the Indonesian counterpart, including the Indonesian government, in not motivating the Japanese partner to provide such training.

The acquisition of general managerial skill by Indonesian managerial staff in this company parallel somewhat the situation found in other Japanese subsidiaries operating in Indonesia as shown in the first three case studies. However, this company case study illustrates an interesting example where in a small company, in terms of the number of employees, the transfer of skills to local managers is not that much better than in the larger companies. In the case of general managerial skills, the experience of Drs. Fachruddin suggests a limited transfer of skills to the local manager. This experience needs to be investigated further as to whether the mechanism used to transfer the technology, or the type of technology transferred, may have something to do with what has happened in this company.

4.4.6 Transfer of Technology

The technology transferred to Indonesia from Japan was through a joint venture between the Indonesian, Japanese and the United States companies. When the technology was transferred, the technology was classified as 'large scale' and 'very sophisticated', compared to existing technology in Indonesia in the same industry. It

was further stated that some portion of the technology transferred to Indonesia was as sophisticated as that used in the parent company in Japan, although some was less sophisticated. In the opinion of Drs. Fachruddin, the reasons for this was because of (1) Indonesia's low labour cost, (2) Indonesia's favorable foreign investment regulations, (3) Indonesia's large market potential, and (4) the internationalisation of the Japanese company. The Indonesian government's favorable foreign investment regulations may have been seen by the Japanese partners to be economically and politically encouraging the Japanese to invest in Indonesia. However, at the same time, the Indonesian government regulations have led no effect on the Japanese in forcing them to transfer their managerial, and in fact local Indonesian managers. This is especially true as no attempt has been made by the Japanese to provide any management training program for Indonesian managerial staff.

The actual transfer of Japanese technology to the Indonesian counterpart has been through the employment of Japanese executives, managers, and advisors or experts in the company, the transfer of documents such as plant process designs, product specifications, and the training of technical workers but not of managerial staff. It is true that these transfer mechanisms aid the flow of knowledge or technology transfer to Indonesia, but, according to Drs. Fachruddin, Indonesian managerial staff still have some difficulty in gaining access to technological and business information that are important

to the running and operation of the company. The difficulty of this transfer process, as stated by Drs. Fachruddin, is "because of the apparent reluctance on the part of the Japanese to share their technological expertise with the locals, and because of the economical and cultural barriers that exist between the Indonesian and Japanese partners".

The economic barriers refer to the abundant Indonesian resources that still need to be developed by using foreign capital and technology, and the cultural barriers refer to differences in cultural background between Indonesia and Japanese, such as the language problem, and the less personal or informal interaction between two different nationalities. The Japanese tend to isolate themselves from social activities with the locals. This sort of difficulty has in fact become one of the barriers to the transfer of knowledge or skills. This kind of difficulty or problem has been widely documented by various studies in Southeast Asian (see Heineman 1985, Kosenko and Samli 1985, and Cook 1974) as was discussed earlier in Chapter 3.8. That this problem occurs in this company could have been anticipated and the issue is not really a new phenomenon in the study of international technology transfer. In fact this study confirms the findings of earlier studies in many countries.

4.5 P.T. BRIDGESTONE TIRE INDONESIA, INDONESIA,

BRIDGESTONE CORPORATION, and MITSUI & CO. LTD, JAPAN

4.5.1 Introduction

The first visit to this company to make an appointment with the company's Japanese executive and Indonesian manager was unsuccessful, because the receptionist stated that "the Japanese executive / manager is busy and does not want to talk about the company's affairs to anyone outside the company, and the Indonesian manager should ask for permission first from the relevant officer before expressing his view". A second visit was made three days later to make an appointment with one of the Indonesian manager. After explaining the objective of the study I was then allowed to see a senior Indonesian manager, and a time was arranged for an interview for the following day. A two hours interview with Mr. Charles Soedargo, one of the directors of the company, was conducted at the company's head office in Jakarta.

4.5.2 Background

Bridgestone Tire Indonesia (Jetro 1990b) is a joint venture company between an Indonesian company, PT. Sinar Bersama Makmur, and two Japanese companies, Bridgestone Corporation and Mitsui & Co, Ltd. The company was established on 8th of September 1973 based upon Indonesian Law, Act No. 1/73 concerning foreign capital investment, and started operating commercially more than two years later in January 1976. The establishment of the company was

based "Fundamental Agreement" signed by the parties involved in the joint venture.

The agreement states that the company would have an authorised total capital of US\$ 20,800,000, and an initial operating capital of US\$ 8,000,000 in which 58% of the initial capital was from the Japanese companies and 15% was from the Indonesian partner. As the company developed and operating profitably, the shares of the company changed so now 50% is owned by PT. Sinar Bersama Makmur, 43% by Bridgestone Corporation, and 7% by Mitsui & Co, Ltd. This percentage put Indonesia and Japan on an equal share basis. This change of shares ownership is not reflected in a change in company management and leadership structure. At present, the President Director of the company is Mr. Nakagama (Japanese), the Vice President Director is vacant, and the Directors are Mr. Y. Nagao (Japanese), Mr. S. Kawamura (Japanese), Mr. M. Hatakayama (Japanese), Mr. Tanudjaja (Indonesia), Mr. Yaw Tjo Hin (Indonesia), Mr. B. Jananto (Indonesian) and Mr. C. Soedargo (Indonesian). Currently the company has 2113 employees consist of 1,191 Indonesian foremen and workers, 4 managers and 4 directors, 4 Japanese directors and 10 advisors/technical experts.

The company has a plant at Bekasi, approximately 50 kms from Jakarta. In October 1975, the company started its first production of automotive tyres, and by 1976 the company's plant was in full production. In 1977 the company started marketing its first products to Automotive Assembly Manufacture. Despite being its very first year of production, the company successfully won 43.4% of the

domestic markets.

The company's market share has continued to increase since 1979. 1979 was the company's year of expansion in every aspect including level of production, employment, market shares, marketing activities, research and development, technological development, and the establishment of Bridgestone Skill Training Centre and other facilities for the welfare of company's employees.

As at the end of 1989, the company was reported to be producing 1,816,000 of tyres, 1,200,000 units tubes, and 355,000 'flats' annually. Many types of tyre were produced at the plant including passenger tyres, commercial tyres, and tyres for industry, agriculture and off-the-road use. For sedan, light truck and minibus vehicles, the company also produces radial construction tyres as well as the more standard construction tyres. For sedans, the company also produces many different designs and series of tyres such as series 82, 70, 65 and 60 model. These products are aimed at catering the domestic market of Indonesia, as well as international markets, and the company has been exporting its products to Japan, the Middle East, Oceania and other countries. In producing these products, some 30% of the input still has to be imported from overseas because no domestic content is available. The company wishes to reduce its imported inputs in the next few years.

4.5.3 Transfer of Technology

The transfer of technology from Japan to Indonesia was initiated by the Indonesian counterpart. Up to now,

Japan is the only source of company technology, and there has been no attempt made to change the current company's technological policy to acquire technology from countries other than from Japan. According to Mr. Soedargo, the technology transferred to Indonesia is similar to the technology used by the company's principal partners in Japan, and therefore, the technology being used in Indonesia is new and far more sophisticated or advanced than that previously found in Indonesia, and is the same as that used in Western countries.

The technology transfer to the Indonesian subsidiary is actually through staff training, the employment of Japanese staff / experts, and through the transfer of documents. The documents provided to Indonesia are in the forms of plant layouts, process designs, product specifications, blueprints, computer software, and instruction manuals. The transfer of these technological materials has been initiated by both sides, the Indonesian and Japanese partners. When Mr. Soedargo was asked 'how significant are Indonesian government regulations or policy motivating your company - the Japanese - to transfer technology from Japan to Indonesia ?'. His response was "not that significant, because the regulations are not very clear or, precise and no sanctions are given to those who do not adhere to the regulations. What should be pointed out is that the technology transferred to Indonesia has been motivated by the needs of, and initiated by, the company itself. As far as I know there is no external force that compels the company to acquire Japanese technology".

Although the Indonesian government regulations play little or no role in forcing the transfer of technology to Indonesia, it is fair to mention that the company does acknowledge that the Indonesian government's efforts in creating stable socio-political environment and a more liberal or deregulated economic policies have successfully motivated the company's Japanese partners to transfer their technology to Indonesia. This motivation is further encouraged by the existence of relatively cheaper costs of production, especially with regard to labour and raw materials in Indonesia.

Having seen the flow of technology transferred to Indonesia, Mr. Soedargo commented that "the joint venture has provided the recipient partner with a great deal of business opportunities. But it remains to be seen as to whether this kind of business partnership will provide more of skill transfer from the foreign partner to the local partner than would another type of business venture mechanism". Mr. Soedargo further stated that he personally had no problem with the joint venture arrangement, but he qualified this by saying that "when the Indonesian company is in a relatively stronger financial position, it would be better to have a turnkey arrangement rather than a joint venture, because a turnkey arrangement allows the technology recipient to have a greater say in, and control of, the company". However, Mr. Soedargo's argument did not take into account the technological weakness on the Indonesian part where finances may not be capable of compensating for technological shortages within the

country. However, Mr. Soedargo's preference for the turnkey approach, at least in the long-run indicates two possible scenarios: (1) the local preparedness of Indonesians to gradually become independent in running large projects such as this company; and (2) the weakness of the joint venture arrangement seen from the technological recipient's point of view. As stated by Mr. Soedargo, the current arrangement and management of the joint venture is very much based on a Fundamental Agreement, and that Agreement is very much in favour of the Japanese partners, despite the fact that at present the Indonesian partner owns half the company's total shares. Historically, the Fundamental Agreement was made and signed when the local Indonesian partner (which had only 15% of the shares in the company) was still both financially and technologically very weak. But the Agreement has been used as the guiding principle to manage the company. It is not clear whether there is any attempt by the Indonesian partner to renegotiate the Agreement, and whether the Japanese partners will be prepared to come to the negotiating table considering (a) the strong position they are enjoying, and (2) the steady growth, in terms of market shares and profitability, experienced by the company. The importance of the Indonesian government's role in assisting the local partner to negotiate with foreign investors such as the Japanese, remains to be seen. Any intervention by the government of the technology recipient could result in either (1) greater control by the local partner of the business venture, or (2) an increased degree of reluctance

on the part of the technology donor to transfer their technology because of their loss of control.

Meanwhile, the current arrangement of technology transfer between in the joint venture, as pointed out by Mr. Soedargo, is "truely benefiting the locals in the short run, but in the long run the current arrangement needs to be further looked into provide greater benefit and control to the Indonesian local partner". Three benefits derived from this joint venture are: the creation of employment opportunities for the locals; the acquisition of various skills from the foreign partners, especially managerial skills, which Mr. Soedargo thinks, is "very important in establishing and managing any form of companies including this one; and the exposure of Indonesian managerial staff to a new business management system, in this case, the Japanese system of management".

4.5.4 Application of the Japanese system of management

The introduction of Japanese technology into the Indonesian economic and business sphere has brought with it a Japanese management system. The system has become the fundamental framework under which Bridgestone Tire Indonesia is run and managed. According to Mr. Soedargo, since the establishment of the company, to some degree, all elements of the Japanese system of management are practised in the company. However, there are two elements of the system that are not intentionally practised, namely, (1) marketing techniques, and (2) labour relations management techniques. The reason given for the exclusion of these two

elements, according to Mr. Soedargo, is because the Indonesian environment is so different from that of the Japanese. Furthermore, there has never been any major labour or industrial problem, such as a strike, occurring or either government and private companies in Indonesia as is commonly found in many parts of the world. Part of the reason for this is that the Indonesian government has maintained strong and effective control of industrial relations and of the labour union organisations. This has also moulded the nature of Indonesian employee culture as rather submissive and involving consensus based decision making process. Of course, economic reasons such as worrying about losing one's job has helped to quiten down the industrial relations front and provides a reason why the Japanese system of industrial relations of labour management in the company is not employed. Hence, an Indonesian was appointed as manager of personnel matters in the company as he is expected to be able to deal with employment issues. Although the Japanese system of labour or industrial management is not employed, but, Mr Soedargo stated that "the essence of the Japanese system is still implemented such as the close relationship between managerial staff and technical/administrative staff.

With respect to the marketing sector, this researcher asked Mr. Soedargo, 'how many Japanese marketing techniques are employed in your company ?'. His answer was "I do not think that we are employing the Japanese system of marketing here. What we do here is basically based an Indonesian techniques. These techniques were formulated by

a collaborative effort between Indonesian and Japanese staff. To illustrate our marketing strategy, when demand for our products in the market is declining, what we do is withdraw them from the market to stabilize the prices instead of reducing prices. By doing so, we can keep the product's top quality image in the eyes of consumers". This strategy, according to Mr. Soedargo, was made possible because of "(1) our products are known for their top quality, (2) our very competitive prices, (3) the large potential markets in Indonesia of 180 million people and a large foreign demand, and (4) relatively weak domestic competitors". It was also suggested by Mr Soedargo that the formulation of the company's marketing techniques or strategy is within the framework of the management system adopted by the company.

The nature of the Japanese system of management in this company was reflected in many forms. The system, as seen by Mr. Soedargo, produced a high sense among the employees' of "unity, loyalty and working discipline". He further stated that Indonesian employees can adopt this kind of working philosophy. The Indonesian managerial staff in particular experience much that is a new in the company as reflected in there being no complaints or opposition submitted to the executives.

It should be realised, however, that the Japanese executive officers and managerial staff who are stationed with the company for between three and five years have different background; personalities and perceptions than do Indonesian. This difference has some impact on the way the

company is run and the relationship that assist between Indonesian and Japanese management staff. A change in the executive officer and other managerial staff often creates some problems when new comers have different working styles, philosophies and approaches to work. Some of the Japanese who have been sent to the company in Indonesia, as Mr. Soedargo said, "sometimes do not have alot of initiative to solve problems faced by the company. Some just do their routine work. In this respect, the Indonesian managerial staff are often better than the Japanese, and after more than 15 years working with company I believe Indonesians can run and manage this company".

However, he pointed out that there is very little possibility that the Indonesian staff can lead the company because the Fundamental Agreement stipulates an ultimate right for the Japanese to lead the company. This ultimate right, in essence, justifies the right of the Japanese executive officer to apply the Japanese system of management to the company. Mr. Soedargo acknowledges that the company's system and the ability of its managerial staff have been partly responsible for making this company perform very well with no loss experienced since the company started its first production in 1975. Other contributing factors were (1) technological excellence; (2) continuous and consistent improvement in technology, and the skills and expertise of managerial and technical staff; (3) consistent price policy, that is, by withholding supply or withdrawing products from the market when demand declines; (4) continuous improvement in quality, and

withdrawing products from the market as soon as possible when damage or faulty is found. Therefore, the management system and particularly its marketing techniques, according to Mr. Soedargo, have been regarded in Indonesia as 'a model' for a successful company. And everyone in the company including the Indonesian managerial staff, Mr. Soedargo says, can take credit for the company's excellent performance.

The application of the Japanese system of management is 'not without problem'. There are issues that have displeased the Indonesian managerial staff, notably the seniority based promotion and pay system, and the long-life employment system. These two elements, according to Mr. Soedargo, are a source of irritation among Indonesian managerial staff. The level of staff salary is determined by two factors, (a) the length of time one has worked with the company, and (b) the Indonesian government's minimum salary. The minimum level of Indonesian salary is very low, though at the same time productivity is generally low and working hours are relatively short. While in this company salary is based on the government standards and on seniority, at the same time the work load is heavier, working hours are longer and productivity is high because of the highly disciplined working environment. Promotion cannot be expected quickly because of the seniority system. Not many alternatives are open to the Indonesian staff except to prolong this employment period with the company with the expectation of increased salary and promotion in the future. That is why, Mr. Soedargo says, the long-life

employment system is applicable in this company. Apart from other personal reasons, many managerial staff, enjoys working under the working philosophy and environment of the company, and this induced him and other managerial staff to stay with the company.

Despite criticism and animosity towards the Japanese system of management as practised by this company, Mr. Soedargo recognises and acknowledges the contribution of the system not only to the growth of the company itself, but also to the development of the company's human resources. The application of various factors, such as group rather than individual responsibility, job rotation, democratic and participative management and decision making by consensus, as well as on-the-job managerial training to create multi-skilled staff and develop the 'company man' loyal and useful to the company, all play an important role in developing the Indonesian staff's managerial skills. Mr. Soedargo stated that his long and direct involvement with the company's management has provided him with a wide understanding of the Japanese system of management and of the skills to implement that system.

4.5.5 The managerial skills required

One type of managerial skill that Mr. Soedargo claimed to have acquired are Japanese specific managerial skills, that is, the skills that are associated with the application of the Japanese system of management in the company. He stated that he had no prior knowledge of and skills in this area before joining the company more than 15

years ago. He believes that he has acquired a great number of skills associated with the application of just-in-time (JIT) or **kanban** techniques, total quality control (TQC) techniques, decision making processes, quality function deployment techniques, that is, techniques used to gather market information, and the work philosophy of the Japanese system. The application of all these techniques on the factory floor and in the administrative offices has automatically forced anyone directly involved to adapt his/her self to the environment where the system is practised. This is, he said "firstly, because everyone is part of the system, and that is why the system is working in this company, and second, the system has become one of the most important tools of the company to produce outputs (products and services). The direct involvement and adaptation in the system has, the process of time, educated the managers concerned about the concepts of the system".

It was pointed out by Mr. Soedargo that the very essence of the Japanese specific managerial skills at the production level and which every managerial staff must know, is the TQC and JIT. At the administrative or management level, the essence of the system is delegation of authority, work discipline, the decision making process, groupism rather than individualism, and job rotation. He also pointed out that "each of these elements is integrated into one united system which can not be separated other elements if the best results are to be achieved".

The concept of TQC is really one of the most

important bases of the company's working system. The company's executives insist on producing top quality products and services with no faulty parts nor rejects, while maintaining low cost of production as stipulated in the JIT concept. The rationale put forward by Mr. Soedargo is that by producing high quality products and services "we do not need to have quality control work after the production process". The company has put a great deal of effort increasing the quality of output. These efforts have been continuously intensified with the establishment of the company's research and development centre in Indonesia additional the one already in Tokyo. The Indonesian centre is called the Technical Center for Research and Development and it works closely with the centre in Tokyo. All production concepts coming from the factories are examined here in this center. Beside this center, there is Total Management Quality Control unit of the company which specialises in controlling the quality of product. This unit makes sure that all products are of first class quality (Bridgestone 1988, p. 8).

The establishment of the Centre and Unit within the company indicates the company's obsession with quality. This obsession, according to Mr. Soedargo, has been successfully implanted into the minds of employees, particularly the managerial staff, as is indicated in the results of employees' working activities and the quality of goods and services produced.

As discussed above, the Indonesian managerial staff have very little involvement in the formulation of the

company's long-term planning (LTP) activity. This activity is exclusively the responsibility of the Japanese executive officers and is part of their relationship to their parent company in Japan. According to Mr. Soedargo, the Japanese rarely discuss the company's long-term planning with Indonesian managerial staff. This practice has made it difficult for Indonesian managerial staff to fully understand the long-term direction of the company. However, the Indonesians assume that the long-term planning of the company is basically based upon the Fundamental Agreement as originally adopted. The limitation or exclusion of Indonesian managerial staff from the formulation process results in a limited transfer of long-term planning skills to local managers. Nevertheless, Mr. Soedargo stated that despite limitations in acquiring LTP skills, he believes that he had acquired a large number of functional skills, especially marketing and personnel management skill. This, he said, was due to his long involvement with the company.

However, the acquisition of functional skills, Mr. Soedargo argued, could not be separated from the acquisition of Japanese specific managerial skills. The application of the Japanese system of management has been largely responsible for a build-up of managerial functional skills. This is, he says, because "the Japanese system of management, as practised in this company, provides (a) a delegation of authority to the manager, that is, the delegating job responsibilities in the course of daily working operations and various committee activities, and (b) greater working freedom in the work place". These two

points, he says, in fact assist managerial staff to acquire more than one kind of functional managerial skill. Mr. Soedargo's experience in acquiring functional skills is similar to his experience in acquiring the general managerial skills of conceptual, human and technical skills. He stated that conceptual skills are extremely important for his current position. He regarded human skills as 'important', and technical as 'not very important', but said "I need to have basic knowledge of how things operate and work". Asked how many general managerial skills have been acquired by him, he responded by saying "I have acquired very many conceptual and human skills, but some Indonesian managerial staff seem to need to develop this skill further, because this skill is hard to acquire considering the limited exposure and opportunity of Indonesia managerial staff to reach the top positions of the company".

Considering the importance of conceptual and human skills attached to his position, he expects to be able to develop these skills in the future. He believes that he would have an opportunity to develop the skills as long as, he says, he "keeps working here and studying further".

4.5.6 Managerial skill formation and training

The basis of Japanese managerial skill formation, as practiced in this company, is essentially achieved through (1) the direct participation of managerial staff in the decision making process, (2) the transfer of authority to managerial staff, (3) job rotation, and (4) training in the

use of on-the-job and off-the-job form of training as well as attending short course programs, seminars, and conferences.

Mr. Soedargo's experience shows that the company has a policy of promoting managerial staff to participate in the decision making process. This participation, he said, has made the staff feel they are appreciated for their potential and for their contributions, and has caused an increased feeling of loyalty or sense of belonging, to the company. It was further suggested by Mr. Soedargo that in many respect the delegation of authority to the managerial staff is regarded as a form of on-the-job managerial training. When the managerial staff are given the tasks of undertaking a particular long-term development in the work place, practical training for the managerial staff is conducted through this transfer of authority which indicates a great deal of trust between the executives and the managerial staff. The executives' trust in the managerial staff reflects the degree of responsibility the staff is given to do their job.

As part of the system of work, the managerial staff are not given a very detailed job description or specific assignments. This is because each member of the managerial staff is expected to be a multi-skilled manager capable of doing several jobs. These multi-skilled managers have been created through the continuous development of the manager's human resource potentials, especially by way of job rotation and training. As it is widely understood that the Japanese system of management

"emphasizes the development of human resources. It is viewed that 'people' are of primary importance and that human resources accordingly constitute a company's most valuable assets, with human capability and potential always possessing the possibility for broader development. Instead of the attitude that 'well, if I just do this job that has been assigned to me, then that is the end of my responsibility', the Japanese style of management stresses that each and every employee has an inherent ability for future growth. Thus, investment is made in relationship with the capacity and potential of each employee" (Jetro 1990a, p.4).

In the case of this company, the direct participation of the managerial staff in the decision making process and in various other meetings, along with greater authority and responsibility given to the staff on the one hand, and job rotation and on-the-job training on the other, have according to Mr. Soedargo, been regarded as the most important mechanisms used to form the skills and expertise of the managerial staff in this company. This statement suggests that the management skill formation of managerial staff is not solely achieved through formal training such as attending university, seminars, of conferences, but training is only part of the whole activities of skill formation. He further suggested that the transfer of authority to managerial staff and the staff's participation in both the decision making process and in the implementation of decisions, has been very significant in forming the management skills of the managerial staff. It is, however, Mr. Soedargo said, "not to suggest that training does not play an important role in managerial

skill formation. In fact, training has been responsible for accelerating the managerial skill formation process". The importance of training has been embedded in the company's strategic management policy as formally formulated in the company's training programs. The reason why training is considered important is because, according to Mr. Soedargo, "training, including the management training, has been regarded by the company as a necessity for both the company and the employees themselves". This necessity of training, he said, reflects the company's view concerning the dependency of the company's growth and performance on the continuous development of managerial skills and expertise. He went on to argue that "you can not expect the company to be developed and produce top quality goods if you do not develop the potential and improve the skills of the company's human resources, particularly, of the managerial staff. Therefore, the company has to provide management training to its managerial staff, and the training should contribute to the realisation of the company's strategic goals". This researcher asked Mr. Soedargo 'why do you single out management training as of most importance to the company ?'. His reply was that "everyone participates in the company's various training programs, but the mention of management training here is intended to suggest the important role of management staff in the running of the company. When you have capable and forward thinking

management staff, then you can expect continuous growth of the company".

Mr. Soedargo claimed to have participated in most of the company's management training programs, such as attending short-course programs, seminars, conferences, and on-the-job and off-the-job management training. Some of his off-the-job training was held in Japan (with Japanese instructor from the parent company) and in Indonesia (with Indonesian instructors). The objective of management training was for participation to acquire completely new skills and knowledge for both new and old areas of responsibility, and he basically experienced no difficulties in the training programs.

Having participated in the company's training program, Mr. Soedargo believes that (1) on-the-job and off-the-job training, (2) learning by doing or hands-on experience, and (3) the counterpart system, that is, working at a different company, are the most effective training mechanisms in developing the skills and expertise of managerial staff. The effectiveness of the mechanisms, he says, guarantee the effective transfer of managerial skills to local managerial staff.

4.6 THE MITSUI & CO., LTD, JAPAN

4.6.1 Introduction

Three visits to the head office of Mitsui & Co., Ltd., in Jakarta, were made. The first visit was intended to make an appointment with one of the Indonesian managerial staff and a member of the Japanese staff. The appointment with the Japanese was unsuccessful, but I managed to make an appointment with one of the Indonesian senior assistant managers of the General Affairs Division of Mitsui's Indonesia's head office, Mr. H. Hady Soerjanto SH, a university law graduate, as well as with a secretary of the Project Office of Mitsui's Indonesia head office in Jakarta, Mrs. Rita Wati, a Singapore academy graduate. Mr. Soerjanto has been working with Mitsui in Indonesia for more than 20 years and he had 5 years working experience before joining Mitsui. Mrs. Wati has been working there for 7 years with 3 years working experience before joining this company. Both were interviewed separately.

Mitsui was selected for this study for three reasons; (1) Mitsui is one of the largest Japanese multinational corporations and has been operating in Indonesia since Indonesia gained her independence, (2) Mitsui's Indonesian subsidiary is wholly Japanese owned and operate in the trading sector, not in the manufacturing sector as is commonly the situation of most Japanese subsidiaries in Indonesia, and (3) Mitsui has a very large business operation in Indonesia with no Indonesian national occupying a top position at company' management level. All

Indonesians are placed as second in charge, or only as operatives and technical staff. There is no Indonesian is appointed as chief of any division with Mitsui's office in Jakarta despite the fact that Mitsui has been in Indonesia for more than four decades. It is, therefore, interesting to see whether any technology or managerial skills are transferred to Indonesia, and if so, to what degree such skills have been transferred. It was learnt that there were around 30 Indonesians working at management level the Mitsui's head office in Jakarta.

4.6.2 Background

Mitsui & Co. Ltd. belongs to the Mitsui Group and also functions as a parent company of the group (The Mitsui Group 1986). The group is one of Japan's most prominent industrial, commercial, and financial grouping. The group's origin lies in the 17th-century House of Mitsui, which by the 1880s had grown into a zaibatsu, a larger industrial and financial combine owned by a holding company. Shortly after the post-World War II dissolution of the major zaibatsu, the present Mitsui Group emerged as an informal association of independent companies working in mutual cooperation. The Group has since expanded to include 69 companies with nearly 400,000 employees. The recorded total transactions of Yen 17,598 billion (US\$70,112 million) for fiscal 1985, 8.8% higher than for the previous year, maintained its position as one of the world's largest general trading companies. Mitsui's expansion was supported by gains in all major transaction categories, but

its especially high growth was attained in offshore trade, an area Mitsui has emphasized in recent years in line with its long-standing goal of promoting world trade and the development of competitive industries worldwide (Mitsui & Co., Ltd. 1985).

In recent years, the Mitsui Group has been placing particular emphasis on offshore trade and foreign investment as part of its efforts to increase profits. Now the Group has some 1,400 domestic and 600 overseas offices. The group claims that through its global network of offices and subsidiaries, it plays a key role in the importation, exportation, and offshore trading of various goods and in a broad range of commercial development activities, including the organisation of business ventures around the world including Indonesia (The Mitsui Group 1986). The areas in which Mitsui operates in Indonesia are in the nonferrous metals sector of nickel and copper in Ertzberg, in the agriculture and fishery sector with lumber in Kalimantan and prawns in Irian Jaya, in the oil and natural gas sector with direct participation in the Salawati project, and with investment, managerial and technical assistance, and other indirect participation, in (1) MOECO Irian Jaya Co., Ltd., (2) Indonesia Petroleum, Ltd, (3) Indonesia Nippon Oil Cooperation Co., Ltd, (4) Jambi Oil Development Co., Ltd, (5) Irian Jaya Petroleum Corp., and (6) Inpex Aceh, Ltd. Meanwhile, Mitsui also has what they call 'affiliated companies' in Indonesia. They are (1) P.T. Standard Toyo Polymer involved in manufacturing and selling polymer products, (2) P.T. Indonesia Toray Synthetics involved in

manufacturing and selling synthetic staples, and (3) P.T. Semen Nusantara involved in manufacturing and selling cement products.

The global operation of Mitsui has made it well aware of the importance of effective international communication and of technology and international technological transfer. Recognising the importance of technology not only for its global operations but also for its economic and social responsibilities, the Mitsui Group of companies has engaged in technology transfer and has conducted research and development in their own laboratories. Mitsui claims that technology transfer is a central requirement for promoting the development of industry and trade. That is why Mitsui is involved in arranging for the licensing and commercialisation of technology, perform surveys of overseas technology, provides information to clients and divisions within Mitsui, and makes assessments and has activities encompassing the planning and financing of venture businesses employing new technologies. In view of this, the core of Mitsui's activities are really its basic trading services, but in addition, Mitsui offers many other services including the provision of equity and loans for joint ventures and venture businesses, application of its know-how, experience, and other resources to raw materials development projects overseas, assistance to clients in obtaining appropriate financing for projects, the identification of new technologies, and technology transfer. In line with the rapid pace of technological change, Mitsui Group established the Mitsui Interbusiness

Research Institute in 1978. The institute which serves as a think tank for the **Nimoku-kai** (Second Thursday Conference, consisting of the chairman or president of each of the 24 leading Group companies, and aimed at facilitating inter-company communication and formulating basic policy of the company), and currently has 14 committees for the coordination of interindustry research projects in specific fields.

4.6.3 The system of management employed

As may have been expected for a Japanese fully owned subsidiary, the system of management employed is the Japanese system. The reason for this is obvious. All executives officers of the company are Japanese, including the senior managers of each division, and company's executive have no legal obligation to involve the local managerial staff in the top decision-making process regarding the running, managing, and operation of the subsidiary. However, Mr. Soerjanto stated that "although the Japanese system of management is employed in this company, the actual implementation of each of system is limited to the Indonesian staff working in this company". Mr. Soerjanto implied that the system elements of seniority based pay and promotion, job related training, and job rotation are not applied. He said that it might be applied only to Japanese staff who worked in the company as many of the Japanese staff sent from Japan were relatively young and much more junior than the Indonesian managerial staff working in Mitsui's head office in Jakarta. Those Japanese,

according to Mr. Soerjanto, "are still young and it seems that they are participating in their international off-the-job training program. It appears to me that those Japanese are coming over here to learn, not to teach us how to do things, and they learn a lot more from us [the Indonesian staff] than we learn from them".

One crucial issue that has become a source of resentment for Indonesian managerial staff is the seniority-based pay and promotion system. As pointed out by Mr. Soerjanto, it appears that the Japanese, on one hand, regard this system as a norm for the company and that, therefore, it should be adhered to accordingly, especially for those Japanese employees working in the company. On the other hand, the Indonesian staff feel that the system is not really applied equally to them. The experience of those Indonesian staff who work in this company indicates that the way their pay and promotion is arranged is not based upon a seniority system but rather on merit, that is, on the basis of their achievement and performance. Mr. Soerjanto further commented it that "if the seniority concept was really implemented here, after working for more than twenty years here, I should have had an executive position and my pay would be much higher than now. But the fact is that, I am still here and my pay is still low". He elaborated further that the Japanese system of management is very good and has been proven to produce excellent results in terms of quality, working discipline, employee loyalty and company growth, as is shown by most Japanese major companies. But the way the system has been applied in

the work place has created not only misunderstanding but also resentment among Indonesian managerial staff. The same point was also made by Mrs. Wati who worked in the project office. In fact, she said that the Japanese system of management had become a working framework for this company, but she did not know exactly whether various elements of the Japanese system of management were practiced at all, stating that "apart from life-time employment, group, rather than individual, responsibility and an emphasis on group harmony, none of the other elements are really practised here". She specifically pointed out the issue of decision-making based on consensus where everyone is supposed to be involved in the decision making process or at least consulted before a decision is made. However, the really, she said, is different, because "after five years of working here my colleague and I have never been consulted or invited to participate in the decision making process. No participation has been invited on our part in any kind of meeting to discuss company policy".

Another concern also raised by Mrs. Wati was the seniority-based pay system. She said "in the end, we have to ask ourselves about how the Japanese system of management should normally work in a foreign country such as Indonesia. We understand that seniority should help you to get an automatic pay raise after a certain period of time working in the company. The fact is that we have to fight the Japanese boss here to have our pay raised. If you do not ask and fight for it, you will not get your pay increased and they will just forget you". This researcher

then asked her whether she had performed her job very well according to the tasks given or job description and improved performance. She responded to this question by saying

"I was appointed as secretary in the Project Office of Mitsui's Jakarta head office and my work load has increased steadily along with the growth of the company over the years. I believe I have given service and contributed to the company and done my job very well. There is no detailed job description given to us which means that we have to do every thing and every job while still being a secretary. Even so, I am still excluded from the decision making process and still have to fight for any pay rise".

The experiences of both Mr. Soerjanto and Mrs. Wati who work for the same company but at different levels of responsibility suggest different facts concerning how the Japanese system of management is practiced in a fully Japanese-owned company. Both recognise the usefulness of the Japanese system of management to the company and they pointed out that the system has become the basis of employees' work guidelines in the company. As organisations, in which Mr. Soerjanto and Mrs. Wati are working, are not involved in manufacturing activities, since Mitsui's operation is mainly in the trading sector, they are not exposed to production management, and therefore have limited, if any, exposure to the application of either the just in time (JIT) or **kanban** and total quality control (TQC) techniques. Both have had exposure to the practice of a life-time employment system, of group rather than individual responsibility, and of the group harmony system. However, both have different opinion, on

the concept of 'special consideration of employees' personal welfare'. Mr. Soerjanto thinks that his office does allow for employees' welfare but it is not available to Mrs. Wati.

Both Mr. Soerjanto and Mrs. Wati considered that the environment of their organisation had been set up according to the philosophy of the Japanese system of management which is quite different from that of Indonesia. They stated that the work philosophy of the company has produced a high level of work quality which has been proven by the company's growth over the years. This quality, according to Mr. Soerjanto, has been as a result of "the ability of Japanese executives to have successfully framed both the Indonesian and Japanese human resources and their potentials together and fitted them into the company's management system". The Japanese management staff or executives, along with their system of management, he said, "have also succeeded in transforming the Indonesian employees' working behaviour into a more active and disciplined one". It seems that the system may have produced some discontent among Indonesian employees but the system has also provided an environment which has led the local staff to stay with the company. This is indicated, among other things, by the presence of Mr. Soerjanto in the company for more than twenty years.

4.6.4 The acquisition of managerial skills and training

To the question 'have you learnt something from this company after so many years of working for this company?',

both Mr. Soerjanto and Mrs. Wati responded that they had indeed learned something from working for the company. The following question was then asked 'what sort of things that have you learned in terms of business management ?'. Mr. Soerjanto's answer was "I have learned how the Japanese run a company and how they utilise company resources in such a way to bring growth to the company". Mrs. Wati answered the question by saying "I learned something of the so-called Japanese system of management, although I do not know precisely how the Japanese system of management should worked in full. However, of what I have seen in this company, I do not believe that the Japanese system of management is fully practised, and I do not think it can be practised fully because of our differences in culture, and economic and political setting".

The answers given by both interviewees suggest that they have learned something about the way the Japanese manage the company and the nature of the Japanese system of management as practised. But there are many questions that need to be answered such as whether the Indonesian employees acquire any managerial skills after they have joined the company. When they were asked a specific question of about skills, as Japanese specific managerial skills, functional managerial skills, and general managerial skills, the answers given by Mr. Soerjanto and Mrs. Wati were quite different. In the case of Japanese specific managerial skills, Mr. Soerjanto replied "not very much" for each element of the Japanese system of management. The reason given by him was that the system

itself is not implemented fully and he does not feel that he has really participated fully in the top management decision making process to devise the company's direction, goals, or activities. Furthermore, he said that no medium or facility, such as management training, was provided to local staff. His answer was quite acceptable, considering the company does not train its local staff, despite the fact that the subsidiary's parent company in Japan has formally formulated training programs for its technical and management staff. One of the key ingredients of its training programs is 'job rotation', and such a job rotation program, according to Mr. Soerjanto, is not practised in this company. He stated that from when he first joined the company up to the present, he has never been invited to take part in any of the subsidiary's training programs, and the company itself does not have any training program at all. The only mechanism used by him to acquire skills or knowledge was to attend short course programs and seminars. His participation in these programs, he said, was at his own initiative, and the executives have never encouraged local staff to upgrade local managerial staff or employees generally. Mr. Soerjanto could not provide any substantial reason why management training was not given to local managerial staff. However, he believed that from the company's point of view, this was because "the company does not regard it as necessary and important". From his own stand point, it was because he "does not have time, and is too busy with work". He elaborated further that he found working for this Japanese

subsidiary to be very demanding, because he said each staff member is forced to compete with other colleagues and to achieve targets was set out. The feeling of competition, he said, "is always with you, because by performing better, that is, by achieving or surpassing the planned target, you can expect to be promoted or to get a pay rise".

It should be pointed out that this company has adopted a policy of evaluating its employees' performance at the end of every year. Before the end of each month, everyone is given a 'report form'. Everyone must write down his/her own activities, plan and timetable for the coming month on the form. At the end of the month each employee must also evaluate his/her own performance, what he/she has or has not achieved or done, and provide reasons why he/she has or has not done or performed as such. The evaluation is really a self-evaluation process and the evaluation is written on the form. If there is any target for a particular year or month that has not been achieved, the person concerned has to accomplish the leftover elements in the next month or year, as well as achieve the coming month or year's target. All the completed report forms have to be handed over to the executive officers to be examined closely and the results of their examination determine the prospects of a pay rise or promotion for the person concerned.

This type of work system, he said, has made every one in the company busy, that is, busy thinking about the target and plan as well as its time table, and busy in making an effort to achieve the planned targets. This kind

of activity, he argued, "explains why the Indonesian managerial staff, including me, cannot spare the time to take part in any form of training program outside the company's normal business activities". He argued further that although the company executives provide freedom to their employees to take part in any training program, these employees have to take into consideration that they will be judged on the basis of their performance and the accomplishment of planned targets, and that such performance is strongly linked to the promotion and pay rise prospects of the employees.

Mr. Soerjanto was further asked by this researcher, 'what types of Japanese system of management related skills have you acquired ?. He replied "I feel there are no practical Japanese system of management related skills I have acquired, except skills or knowledge about the Japanese work philosophy, such as how a decision is made, how to create a work environment conducive to creating group harmony and competition among employees to perform, and to motivate staff to work harder in their own time, be disciplined, and be loyal to the company". However, he said those skills were acquired through a process of long involvement of working in the company and not from attending training programs, as the company did not have a training policy and therefore training programs were not provided to local Indonesian staff. The same process was also applied in the case of his acquisition of functional skills and general managerial skills. When asked about how many functional skills, such as administrative, accounting,

marketing, finance, and exporting skills, were obtained by him, he responded by saying "very many". But again he said it was due to his long employment within the company. The same reason applies with respect to general managerial skills, he believed he had acquired he felt "not very many" of the conceptual and technical skills, and he claimed to have acquired "very many indeed" of human skills. Among these skills, the human and technical skills were considered by him to be the most important skills for him in executing his duties, and he expected that he would be able to develop these types of skills further in the future. However, he "does not know" whether he will be able to acquire the skill because, as he says, "we do not know the company's policy" with respect to staff development or human resources programs and training programs.

In view of the absence of training programs in the company, and being a law graduate, Mr. Soerjanto, suggests that the company does not seem to consider any significance in Indonesian government policy appealing to foreign companies operating in Indonesia to transfer their skills to the local Indonesian employees. In fact, he says "Indonesian government regulatory action does not have any impact on the company in transferring their skills in to forcing the company to provide management training to locals". Asked what mechanisms of management training he considers to be most effective, he nominated four mechanisms, namely, (1) on-the-job training, (2) off-the job training, (3) attending formal training at an educational institution such as university, and (4)

attending short course programs, seminars, and conferences. Mrs. Wati agreed with the first two mechanisms, but disagreed with the last two, and replaced them with learning-by-doing or hands-on experience and a counterpart system, as the most effective modes of management training.

There were no training programs provided at her division either as the company, she says, "does not consider it important and necessary" and besides she says, she is too busy with her job. Therefore, she said, she has acquired "no conceptual skills, and not many human and technical skills". That, she says, is despite the fact that she feels she is in need of those skills, especially the human and technical ones. She anticipated no possibility for her to obtain such skills in the future as she foresaw no prospect of change in the company policy of staff development and training programs. Furthermore, as her division is involved in managing the projects of the company, there was no exposure to practices of other Japanese systems of management, such TQC, JIT and other elements. Then she was specifically asked how many of the Japanese managerial skills had been acquired by her and she quickly responded by saying "none", because, she says, "the company is only involved in project management, and key positions of the company are occupied by Japanese and they invite none of the Indonesian staff to take part in any decision making process".

The Japanese model of decision making process is by consensus and open an active participation of the staff in

the process. The exclusion of some staff, in this case, the Indonesian staff, indicates modification of the application of the system which might have its own rationale. However, this cannot be fully appreciated by the staff when they consider participation in decision making process to be regarded by the system as part of the skill formation process. Mrs. Wati is quite pessimistic as to whether she will be able to develop all her potentials at a maximum level in the future, considering the lack of participative effort on the part of the company's executives in encouraging staff to be more skilled. However, she pointed out, her critical view of the company's treatment of staff as she has experienced it, in fact, has given her considerable knowledge and understanding of how a company should be run and managed. This, she concludes, may be the way the Japanese executives and their system of management develop human resource potentials, that is, without the concerned staff realising it consciously.

4.7 P.T. INDONESIA SYNTHETIC TEXTILE MILLS

A JOINTVENTURE OF MITSUI & CO., LTD, JAPAN

4.7.1 Introduction

A visit to the Head Office of P.T. Indonesia Synthetic Textile Mills in Jakarta was made three times. The first visit was aimed at making an appointment for an interview and this researcher succeeded in meeting Drs. B. K., one of the Directors of the subsidiary company. After explaining the objectives of this study, he agreed to be interviewed later on two conditions, that is, first, not to talk about the subsidiary company's financial affairs, and two, not to publish his name in a widely circulated publication as, he said, his superior (referring to the company's Japanese executives) were not happy with that kind of exposure. The first interview was conducted at his head office and lasted for one and a half hours. At the end of the first interview Drs. B.K. agreed to have a second short interview, to clarify some points raised in the first interview.

4.7.2 Background

P.T. Indonesian Synthetic Textile Mills, formally abbreviated to ISTEM, is a joint venture between an Indonesian company, P.T. Perintis Textile Industries, and two Japanese major multinational companies, Toray Industry Inc. and Mitsui & Co, Ltd. P.T. Indonesia Synthetic Textile Mills or ISTEM was established in August 12th, 1970 with an

authorised capital of US\$ 19,234,000 (according to the Jetro 1989 record) or US\$ 10,300,000 (according to ISTEM's record), and started commercial operation on April 1st, 1972 to produce goods such as polyester / rayon, blended fabrics and yarn.

ISTEM's report (ISTEM 1990) states that at present the company has 1,500 employees, including 12 Japanese expatriates, consisting of 7 members of the company's board of management, 3 advisors / technicians, and 2 managers. The board of management of the company consists of Mr. Hasao Shinzawa, a Japanese (President Director), Mr. Akio Hirooka, a Japanese (Vice President Director), Mr. Sidik Murdiono, an Indonesian (Vice President Director), and directorial positions are occupied by Mr. Shinji Inaba, a Japanese, Mr. Takayasu Yamazaki, a Japanese, Drs. B.K., an Indonesian, Mr. Haro Nishikawa, a Japanese, Mr. Mamoru Enya, a Japanese, and Mr. Akira Imaida, a Japanese. This indicates that of the nine top management positions, 7 are occupied by Japanese and 2 by Indonesians suggesting, according to Drs. B.K., two things (1) the controlling power of the Japanese companies in the joint venture, and (2) the main source of the company's technology come from Japan, notably from Toray Textile Inc.. That power is clearly spelled out in the ownership of shares in which 25% are owned by P.T. Perintis Textile Industries, 25.10% are owned by Mitsui & Co, Ltd., and 49.90% are owned by Toray Textile Inc.

Being the biggest share holder of the joint venture, Toray Textile Inc.'s background is important. The

importance of this company, according to Drs. B.K., lies in its control of the company's management and technological sources. The company is Japan's largest manufacturer of synthetic fibres. The company also produces plastic and chemicals, and it has interests abroad in synthetic fibre production, mostly in Southeast Asia, including Indonesia. Toray was established (Kagano et al. 1985) as Toyo Rayon Co. by Mitsui & Co., one of the major Zaibatsus, in 1926 to manufacture rayon. The company expanded into nylon production in 1951 under a license agreement from Du Pont. Toray integrated backward into petrochemicals in the late 1960s and forward into knitted textiles in the early 1970s. In the 1970s, Toray also developed a number of new products and materials, such as ultra-fine vicuna-like **Toraylina** in 1976. Rayon production, the company's original business, had been progressively phased out and by 1975 Toray had completely withdraw from the business. In its current business operation, the company has four major lines of business. The synthetic fibre business, plastics, chemicals, and other products such as amino acids, carbon fiber, elastomeric fiber, and printing plates. Historically, Toray has had a strong orientation in research and development. Many Japanese (Kagano, et al. 1985) think of it as a technological leader.

4.7.3 Technology transfer

Japan is the only technological source of ISTEM. At the time the transferred technology arrived in Indonesia, the technology, according to Drs. B.K., was regarded as

very sophisticated compared to the technology being used in various companies in Indonesia, but was in fact not very sophisticated and was just conventional or medium level of technology compared with the technology being used in most developed countries. When the technology was firstly transferred to the subsidiary in Indonesia, the technology was basically similar to the technology being used in the parent company in Japan, although some of the technology is different. The reason for the Japanese transferring a different type and level of technological sophistication, according to Drs. B.K., was due to differences in labour costs and in the availability of capital and skilled workers in the two countries. In many respects, labour costs in Indonesia are much lower than in Japan, and Indonesia has less skilled labour than Japan.

In practical terms, the technology was actually transferred through the training of technical staff and the transfer of documents in the forms of plant layouts, process designs, product specifications, computer programs, and instruction manuals.

However, the problem was that most of the documents sent to Indonesia were in Japanese language which, Drs. B.K. said, "makes the transfer process less effective and therefore contributes little to the development of technological expertise and skills among local Indonesian employees". Apart from the cost factor, other reasons for the Japanese transferring their technology to Indonesia were for reasons of stability and a more favourable Indonesian socio-economic and political environment, and because of

liberal Indonesian regulations and policies towards foreign investment and technology transfer. It would seem the Japanese, according to Drs. B.K., want the Indonesian government to further liberalise its present policies. As this researcher failed to have an interview with any of the Japanese executives, Drs. B.K. was asked instead the following question 'how encouraging are Indonesian government regulations for the Japanese to bring in their technology and skills to Indonesia from Japan, and why?'. His response was "extremely encouraging in the sense that the present regulations are weak and the foreign technology transferors feel that they are not compelled or given sanctions if they do not transfer anything at all. In other words, the technology transferors have no obligation, and they can choose whether to transfer it or not". This response was further strengthened by his answer to a follow-up question 'do you think that technological expertise in any form has been transferred here to Indonesia'. His answer was "yes to some extent in terms of working within the Japanese system of management as practised here, but in real terms we are not given any management training as a mechanism of transferring skills to the local managers". He further said that all key managerial positions were filled by Japanese and this had left Indonesian staff only as technical or operative workers. With respect to the acquisition of managerial skills by the Indonesian managerial staff, he was quick to comment by saying "we received nothing from Japanese and we, therefore, do not know anything about the Japanese

technological expertise". However, he did concede that his long ten year association with the company has provided him with some understanding of Japanese management system practices, and of the behaviour and personality of Japanese executives in directing and managing the company's operation. Based upon the situation in this company, he concluded that the agreement which lead to the establishment of this joint venture "should be modified and further detailed, so as to be more balanced so that each party will have a reasonable share in advantages according to the proportion of shares owned".

However, when the issue was viewed from an Indonesian point of view, Drs. B.K. stated, the Indonesian partner should renegotiate the balance of power and control of the company. When such a balance is achieved, the Indonesian partner could expect the effective and productive transfer of technology. Meanwhile, he recognises that it is quite difficult to achieve this goal because the current Japanese controlling partner is not very willing to relinquish its controlling power. As this is the case, he said, "the Indonesian government should take regulatory measures to assist the local partner to have more say in the running of the company and expedite the process of technology transfer". He further argued that if the current situation continues, Indonesia in the long-term will have a disadvantage position in exploiting national resources because the controlling power of the foreign partners will remain strong and the local partner will continue to depend on foreign technology and capital, and any intention to

acquire foreign technology will remain a dream.

4.7.4 The system of management and skill acquisition

An analysis of the way in which the company is run, structured and managed clearly suggests that the Japanese system of management is applied, although not fully. Drs. B.K. was asked by this researcher to specify which elements, and what degree, of various elements of the Japanese system of management are or are not practised in the company. He explained that the life-time employment system is certainly not applied because other factors which accommodate the application of such a system are not adopted fully or are not even adopted at all. This includes a (1) seniority-based pay and promotion system; (2) democratic and participative management system; (3) a decision-making process where the Indonesian managerial staff are only invited to discuss routine matters and not strategic matters dealing directly with the survival, development and growth of the company, such as in the field of business planning, marketing, finance and production management; and (4) training, because the company does not have any formal management training programs.

However, at the production level the company does apply key elements of the production techniques such as just in time (JIT) or kanban techniques, and total quality control (TQC) techniques. In fact, Drs. B.K. stated the techniques have become the main basis of managing the production system of the company, and the company has successfully produced goods with high quality and reduced

production costs largely because of the application of those techniques.

The application of the techniques, he says, only gives a better understanding of the techniques, but does not necessarily give anyone the skills in the techniques. Because, he says "at the factory level the Indonesian workers only function as operators of the system and they are not taught specifically about the techniques. At the management level, the managerial staff are not given opportunities to fully participate in the application process of the techniques, because at the managerial level no job rotation is practised by the company. Apart from this, and even more important the company's executives attitude seems to be to have adopted a policy of excluding Indonesian managerial staff in the decision making process for strategic matters.

The exclusion of the local managerial staff provides no avenue for them to acquire the knowledge and skills relating to the Japanese system of management. Drs. B.K. commented on this by saying "it is rather unique, because the normal practice of the Japanese system of management is to include everyone in the decision-making process. The exclusion of the staff in the process does not seem to reflect normal Japanese practice for the skill formation process of the company's employees".

In view of the above discussion, Drs. B.K. was asked how many of the Japanese specific managerial skills and other skills such as functional skills and general managerial skills, have been acquired by him. He claimed to

have acquired 'little Japanese specific managerial skills'. Because of the way in which the executives operate the company provides little avenue to acquire such skills. There is, however, some knowledge of the Japanese system of management gained with respect to work discipline and personnel management. In relation to work discipline, Drs. B.K. stated that the Japanese system of management as experienced by him in this company, emphasised a very high regard for both group and individual discipline. This is to avoid interference with the opportunity of others to fully develop their capabilities, and at the same time, it is intended to give freedom to employees to perform their duties effectively.

In the work place, offices space is open and wide, and there are no partitions erected to divided off each employee's desks. This seems intended to show an atmosphere of togetherness among employees with no class structure and working freedom in which everyone can easily interact one with another. As noted by Drs. B.K., the Japanese system of management seems to provide mechanisms for promoting a relaxed atmosphere of mutual respect among employees. In view of personnel management, the Japanese system places much emphasis on the effective utilisation of human resources available within the company and stresses the importance of human resources development at the factory or technical level. However, Drs. B.K. stated, continuous technical training was always given to technical staff, while no management training was given to managerial staff. It was only through long involvement or association

with the company, and self study, that managerial staff could acquire the practical Japanese specific managerial skills. The same method was necessary to acquire functional and basic general skills.

Drs. B.K. claimed to have acquired 'very many' functional skills, but skills such as those in the fields of marketing, personnel, production, finance, and accounting matters were all in practical terms since every member of the managerial staff there learnt them through practical experience ('a learning by doing' process). This was because the Indonesian managerial staff are, in many way, only regarded as operators and never as theoreticians which remained the prerogative right of the Japanese executives. Therefore, he said, he had acquired many more technical and human skills than conceptual skills. This may answer a question this research put to him of how many of the basic general skills he has acquired. Of technical and human skills, he claimed to acquire many more technical skills than human skills, despite the fact that he needed many more conceptual skill than any other skills. It is, therefore, his intention to acquire and develop conceptual as well as human skills in the future. However, he stated that he will not have the opportunity to acquire those skills in the future in this company, because according to Drs. B.K., the company does not regard it necessary and important. Drs. B.K.'s statement is re-inforced by the fact that the company does not have a policy of management training designed for managerial staff.

Having experienced the above process, Drs. B.K.

believes that the company provides both in-house training and training through educational institutions very unsatisfactorily. In view of this, he believes that (1) on-the-job training, (2) off-the-job training, (3) formal training by attending educational institutions such university, and (4) learning by doing, are the most effective modes of management training.

However, he adds, the effectiveness of these methods will, among other things, depend upon the balance of power of the parties involved in the joint venture and the detailed clauses of any agreement subsequently designed. This is because, he says, as exemplified in this company, the agreement made provides greater power and control to the foreign partners and creates a continuous or long-term technological, but not necessarily capital, dependency on the part of the local partner. If this dependency is not modified or changed, he says, the current situation will continue and that will mean "very limited transfer of skills from the donor technology to the technology recipient, and therefore, we will experience an unproductive transfer of technology from the local Indonesian point of view".

4.8 P.T. UNILON TEXTILE INDUSTRIES

**JOINTVENTURE OF TOYOBO CO. LTD, and
C. ITOH &CO. LTD., JAPAN**

4.8.1 Introduction

The visits to Unilon Textile Industries were arranged personally by this researcher. There were three interviews two of them were face to face interviews conducted at Unilon's Jakarta Office and another was a telephone interview to the head office outside Jakarta. The interviewee a Unilon director, Drs. S. Sinaga. Drs. Sinaga has been working with Unilon for almost ten year. Before joining Unilon he already had more than ten years working experience. Unilon's head office is in Kabupaten Bandung, West Java, about 150 kms from Jakarta.

4.8.2 Background

P.T. Unilon Textile Industries is one of the leading textile mills in Indonesia and is a joint venture between an Indonesian company, P.T. Sarihasta Indah Tex , and two Japanese companies, Toyobo Co. Ltd., and C. Itoh & Co. Ltd. They respectively owned Unilon's shares in the proportion of 30%, 35% and 35%.

Unilon was established in February 1970 with an authorises capital of US\$ 10,500,000, and started operating in March 1971. Unilon started with a small scale mill with a policy of training Indonesian technicians at the same time as expanding its equipment acquisition. In its early

period of investment in March 1971, Unilon produced 150 frame looms. After extensive research not only into local markets but also into foreign markets, Unilon now has a fully integrated mill consisting of spinning machines, weaving mostly equipped with dobby machines, a complete textile processing range for bleaching, dyeing and rotary screen printing, an embossing calendar machine and resin finishing machines. Unilon produces textile fabrics by using basic materials of 65% polyester and 35% cotton which in the market is commonly classified as fine textile. Early in 1991, Unilon's annual production capacity was for spinning 16,000 bales, for weaving 18,600,000 yards, and for dying 26,000,000 yards. Most of the goods produced are exported overseas to countries such as the United Kingdom, Italy, France, Hungary, Canada, the United States, Japan, Hongkong, Australia, and to Middle East countries.

Currently Unilon has 1,260 employees consisting of 7 members of the board of management, 5 Japanese advisors/technicians, 1 Indonesian manager, with the rest being foremen and workers. The board of management consists of Mr. Makoto Suzuki, Japanese, (President Director), Mr. Yoshihiro Umemoto, Japanese (Deputy President Director), Mr. Jan Darmadi, Indonesian (Deputy President Director), Mr. Atsushi, Japanese, (Director), Mr. Kazuhiro Nakae, Japanese (Director), Drs. S. Sinaga, Indonesian (Director), and Mr. Noboru Shoda, Japanese (Director). This shows the Japanese dominate the running of the company, and this, coupled with the amount of shares they possess, clearly show that the Japanese are in full

control of the company. This control stems from Unilon's establishment whereby both financial capital the technological needs of the company have been supplied by the Japanese companies involved in the joint venture, and this supply continues to the present. This continuous supply appears to have created a dependency of Unilon on the Japanese capital and technology. This is acknowledged, because, as was pointed out by Drs. Sinaga, "this company is controlled and led by the Japanese companies and Japanese executives" and that explains why the Japanese system of management is employed in Unilon.

The original transfer of technology was initiated by the Indonesian partner, and after long negotiations between the parties involved, the transferral went ahead and has continued to the present. The scale and level of sophistication of the technology transferred to Unilon was classified as 'medium sized' with 'conventional or fairly well established and widespread use in advanced countries' (i.e. medium sophisticated technology). It was suggested by Drs. Sinaga that some of the technology transferred was similar and some different from that used in Japan, the difference being due largely to differences in both countries' labour costs, availability of capital, and that the market orientation of the company is primarily directed to the local market and to the parent company's other subsidiaries. Japanese labour costs are higher than in Indonesia but capital is easier to find than in Indonesia, since interest rates are higher in Indonesia than in Japan.

When the technology was first transferred to

Indonesia, the technology was regarded as new and quite advanced within the industry in Indonesia, and this made the company able to produce better quality products, the quality of which was high enough worth for export purposes. Since the first round of transfer, the technology has been actually transferred in many forms, namely, in the forms of staff training, employing foreign staff / experts, and in the transfer of documents such as plant layouts, process designs, product specification, and instruction manuals, mostly in Japanese language, which makes it useless for Indonesian staff who mostly cannot speak Japanese.

It was suggested by Drs. Sinaga that the transfer of the Japanese technology was initiated and invited by the Indonesian partner, and the Japanese seemed to believe that the Indonesian government's liberal and favourable regulations concerning foreign investment and technology transfer had been very important in motivating them to transfer technology to Indonesia, as was Indonesia's favourable socio-economic and political environment. However, the Japanese did not regard the availability of a better educated and skilled Indonesian labour force as 'extremely important' but as 'only important', and they did not regard the size of the company organisation as important at all. The type of industry and product/service produced was regarded as 'quite important' in considering the transfer of technology to Indonesia by the Japanese. A positive move by the Japanese towards various aspects of Indonesia's environment has led to the continuous flow of Japanese technology to Unilon, Indonesia. This flow of

Japanese technology has been accompanied by a set of Japanese corporate leadership values, philosophy and style, as well as a system of management.

4.8.3 The system employed and the skills acquired

The application of the Japanese system of management in Unilon is very obvious. However, it was noted by Drs. Sinaga, that some element of the system are not fully applied, because they are either (a) not suitable to the Indonesian environment or (b) some aspect of the Indonesian approach to management is far more appropriate, such as in industrial relations matters, or (c) this might have been intentionally planned by the Japanese executives, but no one knew the real reason, for not applying the Japanese system fully in running the company.

The elements of the system that seem to be mainly applied are (1) a life-time employment system, (2) special consideration of employees' personal welfare, (3) a seniority based pay and promotion system, (4) just-in-time (JIT) techniques, (5) total quality control (TQC), (6) decision making by consensus, (7) on-the-job training for technical workers, (8) off-the-job training, and (9) a labour-management cooperation system. Other elements such as (1) a democratic and participative management system is not fully implemented, because in any decision only the top or senior managerial staff are invited by the Japanese to participate in the decision making process meetings. However, it should be pointed out that discussion in the meetings is mostly concerned with technical matters or only

with implementation, because the main dimensions of the decision, according to Drs. Sinaga, have already been made at the parent company in Japan. (2) a group, rather than individual, responsibility system has been implemented, but the Indonesian staff within the company have some difficulty in understanding the concept, and therefore make it hard to make it work as originally intended by the Japanese executives. Subject to this difficulty, the company also finds it hard to implement (3) a group harmony system. There is (4) Job rotation, and (5) long-term planning, because this work is done wholly by the Japanese with no participation or input from Indonesian staff.

Despite the partial application of various elements of the system, the system itself, Drs. Sinaga says, has become the main working framework of the company, and that framework has served the company well in achieving its strategic goals. The application of the system has provided the Indonesian managerial staff with a good understanding of the system. When asked whether Drs. Sinaga has acquired Japanese specific managerial skills, he responded by saying "very many" for certain elements of the system such as JIT and TQC skills, personnel management and others, including the work philosophy of Japanese management system. But there are many elements of system-related skills that he has not really acquired because of their limited application to the company. It seems that the most fundamental skill that he appears to have acquired to the way the company has been run and managed by the Japanese

executives with their Japanese system of management. It was suggested by Drs. Sinaga that the three key elements of Japanese management as he saw it practiced in Unilon, were (1) a high level of work discipline; (2) a relaxed atmosphere of the work environment with a good sense of team work, and (3) a high level of self-worth of employees in achieving set targets or goals and in completing assignments given them in their own time and by their own methods.

There is another important point that was of interest to Drs. Sinaga and that is the way the system has provided room for managerial staff to develop themselves in the work place. Every member of staff is given every chance to find their own way to do their job. This means that it very much depends upon the staff themselves to initiate the improvement of their skills. The company does not have a formally written management training program for managerial staff to develop their managerial skills managerial staff. The managerial staff in Unilon, therefore, have to innovate their own mechanism or methods of learning while doing their job. Therefore the acquisition of knowledge or skills related to the system is not through direct participation in formal training but generally through personal observation, that is, by observing the work system as practised in the company. Drs. Sinaga claimed that although he had some knowledge of the Japanese system of management before joining company, his direct participation or involvement in the Unilon's management has certainly given him a greater degree of

skills acquisition within the company. The same mechanism lies behind in his acquisition of functional skills and general managerial skills.

It should be noted that Drs. Sinaga's acquisition of functional skills has been largely due to his long association with the company's managerial staff and his interaction with some of the Japanese executives working in the company. However, his educational background in an economic- related field, has, he maintained, helped him to accelerate the acquisition of these skills. He stated that he has acquired 'very many' functional skills. Although he did not specify what type of functional skills he believes he has acquired, he suggested that the company's system of management, as presently practiced, helps managerial staff to have an access to knowledge about what staff in other divisions in the company are doing. The weekly meeting between the executives and the managerial staff of the company is to report on, and evaluate, the performance achievements or even problems faced by the company as a whole and by each division within the company. This weekly meeting is an opportunity to understand the operation of the company and how to solve the problems being faced. The solutions found or agreements made in the meeting represents a group decision that every member of managerial staff has to follow and observe. The next step is that the managerial staff have to implement such decision in their respective divisions. There is no fixed way of implementing a solution or agreement in the company. Every managerial staff is given the freedom to implement the solutions or

agreements as long as they are within the framework of achieving the company's objectives. This freedom, in many ways, encourages managerial staff to innovate in implementing decisions made in the meeting, and this process is responsible for developing general managerial skills (such as conceptual, human, and technical skills) depending on what the staff's particular level of management and responsibility. Drs. Sinaga stated that he had acquired 'a lot of conceptual and human skill' and 'less of technical skill'. The reason given for this is because he does not feel he had acquired the skills during his employment with this company, and that he already had had that kind of skill before joining Unilon. He further said that his involvement with Unilon provides some new aspects of conceptual skills. But again, he said that what he has acquired in Unilon, in fact, strengthened and developed his earlier conceptual skills, as well as his human skills. In his position as a senior manager or director of the company, he believes that the conceptual and human skills are more important than technical skills, and therefore he expects in the future to develop further the first two types of skill.

However, Drs. Sinaga was not quite sure whether he would be able to develop or acquire conceptual and human skills in the future with this company, because of the "problem of control of the company". He elaborated on this by explaining that "the company has been under the control of the Japanese. This control will continue as long as the current proportion of ownership and technological

dependency of the company remains unaltered". Apart from this, Drs. Sinaga indicated that a lack of human resource development programs has become one of the sources of the many problems faced not only by private companies but also by Indonesia as a whole. Only when "this problem is solved can the other problems be effectively addressed".

He believes that there are three problems that the country has to overcome: technological dependency from overseas; financial dependency; and human resource development. These three factors should be dealt with urgently by the country, because, without solving these problems Indonesia will not be in a strong bargaining position with foreign investors or technology transferors. He said that it was his direct participation in implementing various decisions of the company, rather than by participating in management training programs, that has given him a sound comprehension of the balance of power and control between the parties involved in the joint venture and in technology transfer. He specifically mentioned management training in Japan because his participation in such training, provided some new skills or knowledge, but its relevance to his job was limited.

The nature of management training programs participated in by Drs. Sinaga was "off-the-job" training which was aimed at acquiring completely new skills or knowledge for different fields as well as his present which attending the training program, he experienced no major difficulty in comprehending the content or subject of the training programs except some language problems since all

the instructors were Japanese who had come from the parent company in Japan.

Having experienced work at management level as well as management training programs of the company, Drs. Sinaga believes that the company ought to provide more formal management training programs to its Indonesian staff and that by doing so, the transfer of skills to local employees could be accelerated. The company has no such policy of management training. Indonesian government regulations and policies have thus far had no significant impact on the provision and conduct of management training to local employees. The Japanese company cannot be blamed for this, because they believe they have been operating within the present legal framework of the government.

4.9 P.T. EASTERNTEX, INDONESIA

A JOINT VENTURE OF TORAY INDUSTRIES, INC., JAPAN

4.9.1 Introduction

The visit to P.T. Easterntex was arranged by the researcher. The interviewees were Mr. Budi Sugiono, Chief Accountant of the Finance Department, and Mr. M.B., Section Chief of the Business and Administration Department, of the company's head office in Jakarta. Mr. B. Sugiono was the main interviewee and two interviews were made with him on two different occasions. Like the other Japanese subsidiaries operating in Indonesia, the Japanese executives and managers declined to be interviewed.

Easterntex has a factory / plant area of 264,150 square meters located in Surabaya, East Java, around 900 kms from Jakarta. Both the company's head office and factory are headed by Japanese.

4.9.2 Background

Easterntex is a Japanese subsidiary and was established in June 1973 through a joint venture between an Indonesian company, P.T. Wisnu Tjandra, and a Japanese multinational corporation, Toray Industries, Inc. Authorised capital of the joint venture is US\$ 11,000,000 of which 20% and 80% of the capital are owned by the respective parties involved in the joint venture. The company commenced its operations in January 1976. As at the end of 1989, the company's annual production capacity was 8,124,000 pounds of yarn 45'S (65% polyester and 35% cotton), and 30,648,000 yards of gray fabrics (65%

polyester and 35% cotton) (Jetro 1990b).

The subsidiary is controlled by the Japanese as is reflected in their ownership of 80% of the company's shares and the structure of its organisation as follows: President Director is Mr. Satoshi Arakawa, Japanese; Vice President Director is Mr. Hadi Budiman, an Indonesian; and all five directors of the company are Japanese. No Indonesian has a position of senior manager in the company, and almost all of the company's 754 employees are technical workers, operators and foremen.

Easterntex is regarded by Toray Industries. Inc. as one of its 18 major joint ventures. Toray's subsidiaries are in nine countries, mainly in the Far East and Southeast Asia including Indonesia. The business activities of these subsidiaries and affiliates are centred on fibers and textiles including the manufacture of synthetic fibres and textile production processes such as spinning, weaving, knitting, dyeing and finishing. The majority of the overseas joint ventures have registered substantial improvements in both sales and profits. In Particular, synthetics fibre manufacturers in the Republic of Korea, Malaysia and Indonesia recorded remarkable business results. The company claims that these results are due to the reduction in manufacturing costs, the expansion of sales, the reorganisation of the Textile Alliance Ltd. aggregate, and supplementary investments in joint firms in Indonesia to reinforce their business foundations (Toray Industries 1985).

The reduction in manufacturing cost has been made possible, among other things, by the effective management

of the company, and by appropriate technology used in the company. As is the case of Easterntex, Mr. B.S. suggests that both the technology and the system of management employed in the company are Japanese. Japan is the only source of Easterntex's technology. The technology has been transferred to Easterntex through the establishment of the subsidiary in 1973 using its joint venture mechanism. The technology was actually transferred through the employment of Japanese expatriates in the company, the training of technical staff, and through the transfer of documents in the form of plant layouts, process designs, product specifications, computer programs, and instruction manuals.

It was suggested by Mr. B.S. and Mr. M.B. that the technology and technological expertise transferred to Easterntex (Indonesia) are not very sophisticated and just conventional of medium only compared to the technology already in use in Indonesia and in the parent company in Japan. In fact, Mr. B.S. stated that some of the technology which was already in Indonesia at the time the Japanese technology transferred was even more sophisticated. He further said that "on the contrary, many of the techniques in terms of machinery and equipment transferred by the parent company to Indonesia was second-hand Japanese techniques". Both Mr. B.S. and Mr. M.B. suggested the technology transferred to Indonesia was different from that used in Japan because of differences in various variables between Indonesia and Japan. Indonesia has been thought to have a short supply of skilled staff, and the size of the Indonesian subsidiary is such smaller than that found in Japan. Indonesian government industrial and environment

regulations are much less strict than those in Japan, and Indonesian markets have greater potential than Japanese local markets.

It was suggested by Mr. B.S. that there would offer to have been no questions raised or complaints made by the Indonesian partner with respect to the nature or characteristics of the technology transferred. He assumes this was due to the strong Japanese control of the company, and the direct or complete involvement of Japanese in supervising the use and application of the technology both in the plant and in the head office of the company. The direct involvement of the Japanese can be seen in the structural framework of the company's organisation where all departments within the company are headed or led by the Japanese, including the company's board of management, while the control mechanism of the Japanese is exercised through the ownership of the company's equity. Mr. B.S. concluded that "having understood the games played in the company, the Indonesian partner should find an alternative mechanism of technology transfer such as through a turnkey mechanism and through a degree of control of the company". He believes that the turnkey mechanism provides greater control for the technology recipient and control essentially lies in greater ownership of the company's equity. As he said, "if the practices seen in this company are employed elsewhere, a host country could not expect much productive transfer of technology in favour of locals and there would be none or very limited transfer of skills to local staff".

When asked, Mr. B.S. did not elaborate on whether the

question of control of the company had caused the transfer of unproductive technology, and the 'none or limited transfer of skills' to local staff. He did say that both variables played role to a certain degree, and he then argued that in many respects "it is the system of management adopted by the company that provides the work framework for employees". It was believed by both Mr. B.S. and Mr. M.B. that the company had employed the Japanese system of management.

4.9.3 The practices of the system of management and managerial skill formation

The Japanese system of management has clearly been practiced in Eastentex. However, Mr. B.S. stated that "the Japanese system of management is only practiced about fifty percent and only at the factory level and only between the Japanese themselves". The reason for this, according to Mr. B.S., is because of the absence of many aspects of the Japanese system of management that are not applied in the company, such as the Japanese long-term plan systems, a labour-management cooperation system, a group, rather than individual, responsibility system, an emphasis on group harmony, decision making by consensus, democratic and participative management system, management training for managerial staff and job rotation. It has been argued in the earlier chapters of this thesis that job rotation is one of the essential components of training, and training in turn becomes one of the core ingredients for technology transfer, as argued by Parpia (1974) and Kosenko and Samli (1985). Parpia has stated "training is a vital factor in

the technology transfer" (Parpia 1974, p.101), and Kosenko and Samli argued that "training personnel in order to make the transfer of technology effective is a necessary condition for then total process of transferring technology" (Kosenko and Samli 1985, p.128).

These elements of the Japanese system of management as practised in the company are not really appreciated by Indonesian managerial staff in the company. Mr. B.S. suggested that "the application of some elements of the system here do not really reflect the true concept of the system itself". It has been stated, he explained, that a life-long employment system is one of the key elements of the management system adopted by the company's executives. However, the reality, he said, did not reflect the realities concept of the system and the Japanese executives were not worried if any of the Indonesian staff left the company.

The concept of special consideration of employees' personal welfare is "only thirty percent of the system practised" judging from the limited services, allowances and facilities provided to local staff. The seniority-based payment and promotion system is only partly practised, because since the establishment of the company, there has been no Indonesian staff promoted to senior manager or director positions within the company, and the level of pay in this company for managerial positions, compared with other foreign companies or subsidiaries operating in Indonesia, is very low. He stated this with full confidence, being chief accountant of the company. He further explained that decision-making by consensus was not

implemented either. This fact, he said, showed that the Indonesian managerial staff were never invited or consulted before a decision was made. He said sometimes "we, the Indonesian managerial staff, were only invited to provide some support and suggestions about how a decision is to be implemented, and this means that the decision has already been made by the Japanese executives". Mr. B.S. argued that this practice shows that the democratic and participative system of Japanese management is not implemented in this company. Mr. B.S. stated that "there is no bottom-up decision making process practised here, and therefore, we know very little about the nature of the company's strategic goals, as the Japanese have kept everything to themselves". The same lack of affection of the Japanese system of management can also be seen from the absence of management training for managerial staff, although, he said, on-the-job training is given to the technical workers in the factory.

However, the training is really aimed at teaching the workers how to operate the machinery and the equipment. In many respects, Mr. B.S. suggests, "the Indonesian technical workers in the factory are apparently regarded only as operators as they are provided with very limited, or no, understanding of and knowledge about the whole structure of production management and techniques". The absence of management training, according to Mr. B.S., is due to a lack of a training facility in the company and the company does not regard this as necessary or important.

In view of the above discussion, Mr. B.S. was then asked 'how many of the Japanese system of management

related skills have you acquired ?'. He replied by saying "very little indeed". The reasons given by him are that the company provides no management training skills, either on-the-job or off-the-job, to managerial staff in order to develop their skills related to the system of management, and there is very limited application of the system within the company. In other words, there is mechanism or facility by which these skills can be formed. The key to the Japanese skill formation process is job rotation and this is not practised.

However, although very little Japanese specific managerial skills were required, Mr. B.S. stated that he did acquire "some knowledge about the way the Japanese executives run the company and the work philosophy practised within the company". The work philosophy referred to here is the work discipline adopted by the company and the quite relaxed atmosphere of the work place, that is, an atmosphere which, he believes, stimulates every one to compete and work harder to achieve current planned targets.

Mr. B.S. also claimed that he had acquired few functional and general managerial skills after eight years working with this company, because, he said, "we, the Indonesian staff working in this head office, are treated just like robots with no sense of friendship and human relations exercised by Japanese executives but are told to work to achieve planned targets". This kind of treatment, he suggested, did succeed in forcing the staff to work hard and achieve the planned targets, but this treatment did not provide happiness for the Indonesian staff. He stated "I find a lot of pressure is put on us working here to do the

job as fully and as quickly as possible with no compensation or appreciation which one might expect to receive from the executives such as higher pay or promotion".

It was conceded by both by Mr. B.S. and Mr. M.B. that their long employment with the company had exposed them to various issues in their respective functions and responsibilities. That exposure, by and large, has been responsible for expanding their knowledge and skills in solving problems related to their professional responsibilities. Mr. B.S. stated that "all the knowledge and skills I have acquired have been through personal development and observation while carrying out the duties assigned and Have not been acquired through any of the company's training programs". The same method was found to be the case in his acquisition of general managerial skills. Mr. B.S. claimed that apart from technical skills, he has acquired no conceptual skills and very few of human skills. He said he feels that in his current position and responsibility he needs to possess skills other than technical ones. Therefore, in the future, he needed to develop both conceptual and human skills. Both Mr. B.S. and Mr. M.B. suggested that they would like to develop their expertise through the conceptual and human related skills. However, Mr. B.S. stated "judging from the company's Japanese executives of the last eight years, I am pessimistic about having an opportunity to develop such skills". The reason for this are, firstly, the company does not have a training facility, and secondly, the company does not regard it as necessary and important to provide

management training to local Indonesian managerial staff".

Both Mr. B.S. and Mr. M.B. believe that the Indonesian government regulatory policies do not have any impact on the company in terms of compelling the company to provide management training to Indonesian staff. It was pointed out by Mr. B.S. that one of the Indonesian government foreign investment policies was to require foreign companies to promote the local Indonesian staff to senior managerial positions except when there are no Indonesians qualified for such positions. It was argued in Chapter 3 that the degree of skill acquisition could be determined, among other things, by the level of position occupied by and the nature of responsibility bestowed, upon the staff. He believes that "after eight years of working for this company, I am sure that a lot of Indonesian staff are qualified for senior managerial positions and are capable of performing executive level". When Mr. B.S. was asked why the Japanese executives do not promote Indonesian staff to any senior managerial position in the company, he responded by saying "we do not know precisely why, but it seems that the Japanese always manage to easily avoided Indonesian government policies as they have got good contacts with high official in the Indonesian government".

Having examined the management practices and work philosophy of the company, it appears that the technology transferred to Easterntex has provided very little spill-over effect, in terms of skill transfer, to the Indonesian employees, and this as reflected in the limited acquisition of managerial skills by Indonesian staff as shown by both Mr. B.S. and Mr. M.B.'s experience.

4.10 P.T. CENTURY TEXTILE INDUSTRIES, INDONESIA

JOINT VENTURE OF TORAY INDUSTRIES, INC.,

TOKAI-SENKO CO. LTD., KANEMATSU-GOSHA LTD., and

KURABO INDUSTRIES LTD., JAPAN

4.10.1 Introduction

The interviews were conducted both at the company's head office in Jakarta and at the plant site in Pasar Rebo, about 27 kms outside the centre of Jakarta. At the head office an interviewee was Mrs. Poppy Rhijandini, SH (a University Law graduate), the head Office Coordinator, and at the plant site the interviewee was Mr. D. Prayitno, BSc, Manager of Production Control Centre (PCC).

4.10.1 Background

P.T. Century Textile Industry (Centex) was established in May 1970 with an authorised capital of Rp 10,000 million, and its current capital is Rp 3,840 million. It started operations in May 1972. Centex is a joint venture between Indonesian share holders who own 32.09% consisting of Mr. Hadi Budiman (who owns 16.98% of the company's shares), the Indonesian public (15.10%), and Japanese companies which control 67.92% of the shares, consisting of Toray Industries Inc. (28.87%), Tokai-Senko Co. Ltd. (8.49%), Kanematsu-Gosho Inc. (28.35%), and Kurabo Industries Ltd. (2.21%). Century has 908 employees consisting of 3 Japanese managers, 6 Indonesian managers, 3 Japanese advisors and 2 Indonesian advisors, 6 Board of Management members. The Board of Management consists of Mr. Hidetomo Suzuki, Japanese (President Director), Mr. Hadi

Budiman, Indonesian (Vice President Director), Mr. Eiji Yatsu, Japanese, (Director), Mr. Ieyoshi Takeda, Japanese, (Director), Mr. Teruo Sakata, Japanese (Director), and Mr. Yoshiyuki Nishimoto, Japanese, (Director) (Centex 1990).

Most of Centex's technology come from Japan and only a small amount of it came from West Germany. It was suggested by the interviewees that the scale of the technology transferred from Japan could be classified as 'medium' or conventional or fairly well established and widespread in advanced countries. When the technology was first transferred to Indonesia, it was regarded as sophisticated and advanced technology compared to existing technology in Indonesia. However, this was not the case when compared to the technology being used in the parent company in Japan. The reasons for the Japanese to transfer a different technology, according to the interviewees (Mr. Prayitno and Mrs. Rhijandini), were due to low Indonesian labour costs, scarcity in skilled workers, and Indonesia's less strict industrial and environment regulations. The transfer itself was further encouraged by a more favourable and stable socio-economic and political environment in Indonesia.

Like previous case studies, the technology was transferred through the employment of Japanese, through staff training and study in Japan, and through the transfer of documents such as plant layouts, process designs, product specifications, patents or trademarks, computer programs, and instruction manuals. The introduction of the technology to Indonesia was modified to suit the local conditions of the Indonesian environment. That modification

was also applied in the case of the Japanese system of management in Centex. The nature and degree of the application of the system, according to both the interviewees, affects the degree of skills that acquired by the local Indonesian employees.

4.10.3 The system of management and the skills acquired

Most elements of the Japanese system of management, to some degree, are applied in Centex. Mrs. Rhijandini stated the one element of the system that has not been implemented in the head office is job rotation, but it is widely applied in the plant. It was pointed out by Mr. Prayitno that two elements of the system, namely, just-in-time (JIT) or **kanban** and total quality control (TQC) techniques have been fully implemented on the production floor. The techniques have been the most important part of the Centex's production system and management. The implementation of these techniques, according to Mr. Prayitno, has been followed by the company's commitment to produce top quality products at low cost. This commitment then led to the creation of the company's motto which runs "Zero Accidents, Efficiency-Quality, and Fresh Centex".

The application of the Japanese system of management on the production floor has been directly supervised and controlled by the Japanese.

It was stated further by Mr. Prayitno that "the system of management applied in the plant is really the Japanese specific system of management". The system, as practised in this company, stressed high working discipline, freedom to accomplishes duties as assigned

without any specific deadline, but with the work done at a level of high quality. Quality has been the most important aspect stressed in the production line. Every type of work should result in a high quality product. In the process, each worker is directed towards producing quality products and, therefore, the workers are encouraged to provide opinions and to participate in the effort to produce quality goods.

At least once a month, a meeting is held. The meeting can be initiated by workers and plant managers and attended by top executives. Before a decision is reached, wide-ranging discussions among participants are held. The decision made will be implemented and it must be respected by everyone involved in the production line. The way the decision is made reflects the company's adoption of a group approach rather than an individual approach.

The Indonesian managers and technical staff working in the plant are consulted when a decision is going to be made, especially when the decision is concerned with issues such as quality improvement, new production limit, employees' welfare, salary or pay level. By doing this, the company executives can avoid any conflict with the workers' organisation or union in the plant. This practice suggests the company's preparedness to provide a consultative mechanism between the workers and the executive.

However, this kind of mechanism is, according to Mrs. Rhijandini, never practised in the company's head office. As stated by Mrs. Rhijandini, "since I joined this company as a personnel manager, I have never been invited by the executive to participate in a meeting to discuss the

company's strategic management and policy". For example, she said, "the Indonesian managerial staff, including myself, have never been told that the company is going to go public. We learn of it through the newspapers". She continued to say that "what we were told by the Japanese executives was to work hard and that every duty assigned to us should be completed on time without delay".

An examination of the practices of management in the company suggests some differences between the plant and the head office where (1) no Indonesian managerial staff were involved in the decision making process, (2) no job rotation is practised in the head office as is the case in the plant, and (3) no training is provided to the Indonesian managerial staff, as is found in the plant. This difference, according to Mrs. Rhijandini, suggests that "the Japanese place greater importance on the production line than on the working procedures in the head office". The importance put on the plant also illustrates the Japanese preference given to the technical and operative workers to those of office workers. This preference, according to Mr. Prayitno, is reflected in the provision of better allowances and facilities for plant workers, and in the training of such staff whereas no management training is given to the managerial staff.

One of the important issues with which this study is interested is skill formation of the local Indonesian employees. The formation of Japanese specific managerial skills is very much linked to the application of the Japanese system in the company. When Mr. Prayitno was asked by this researcher how many of the Japanese specific

managerial skills were acquired by him, he responded by stating "very many, especially with respect to the application of the JIT and TQC techniques".

However, the acquisition of the skills was made possible because of his position as manager of the Production Control Centre (PCC) of the plant. It was pointed out by him that the acquisition of the skills was done over a long process, that is, ever since he first joined the company as a technical worker and a production manager. Furthermore, his current position as PCC manager has been largely responsible for making him understand the Japanese working philosophy, culture and behaviour as the position has required him to have a close association and contact with the Japanese executives. However, despite his close association with the Japanese executives, he claimed "to have acquired very few of other Japanese managerial skills". Mr. Prayitno stated that his knowledge of Japanese long-term planning techniques, corporate strategy and marketing system is very limited because of his limited exposure to the executive circle. Therefore, he said "I have not acquired very many functional or professional skills during my twenty year employment with this company".

It appears that Mr. Prayitno's experience was not that much different to that of Mrs. Rhijandini.

Mrs. Rhijandini stated that she had not given any only management training since she first joined this company as personnel manager and had not been rotated into other managerial positions. It is understood that the company has a 'just understood' management training program. The reason for not providing management training

is because "the company does not regard it as necessary and important". This partly provided the reason why Mrs. Rhijandini said that she had not acquired "very many Japanese specific managerial skills", and another part was due to her long working experience with another company before joining this company. The same answer was also applied in the question of general managerial skills which consist of conceptual, human and technical skills, and functional skills, despite the fact that both conceptual and human skills are very important to her position and responsibility.

When Mrs. Rhijandini was asked by this researcher as to whether Indonesian government regulations which require foreign companies to provide management training to Indonesian staff have had any impact at all on this company's executive, her answer was "no, and it seems that the Japanese do not really care at all about the existence of Indonesian government regulations let implementing them".

It was pointed out by Mrs. Rhijandini that despite the absence of management training in this company, "it does not hamper my attempt to accomplish the duties and responsibilities as assigned to me although not as well as I want than to be". In view of her experience working in this company, Mrs. Rhijandini thought that it was necessary for the Indonesian managerial staff to be given management training beside the initial training given to junior office staff when they first join the company. It was seen by Mrs. Rhijandini that the best modes of management training are on-the-job and off-the-job training, and learning by doing.

When asked by this researcher what type of managerial skills she wanted to develop further, she responded by saying "conceptual and human skills". However, she indicated that "the opportunity to gain management training to acquire those skills are zero as the Japanese executives here in this company do not seem to care too much about our staff development, and what they want from us here is to get the job done".

4.11 P.T. TIGA MANUNGGAL SYNTHETIC INDUSTRIES, INDONESIA

MITSUI & CO., LTD, JAPAN

ICHIMURA SANGYO CO., LTD, JAPAN

4.11.1 Introduction

P.T. Tiga Manunggal Synthetic Industries is a joint venture company between two Indonesian companies (P.T. Daya Manunggal and P.T. Sutratex Citrasejati) and two Japanese companies (Mitsui & Co., Ltd., and Ichimura Sangyo Co., Ltd.).

The researcher made two visits to the head office of P.T. Tiga Manunggal Synthetic Industries in Jakarta. The first visit was intended to make an appointment with Mr. Musa, President Director, and Mr. Otjeng Sutedja, Director of the company, for an interview, but was unsuccessful. However, later the researcher was recommended by Mr. Sutedja to see Drs. Pawardi, Senior Manager of Finance. After explaining the purpose of the interview, Drs. Pawardi, an economics graduate from University of Indonesia, Jakarta, agreed to be interviewed two days later. The interview lasted for one and a half hours at his office.

4.11.2 Background

P.T. Tiga Manunggal Synthetic Industries (called hereafter Tiga Industries) is a Japanese controlled company. It was established in July 1974 in Jakarta with an authorised capital of US\$ 6,000,000 contributed by four share holders, namely, P.T. Daya Manunggal (23.40%), P.T.

sutratex Citrasejati (20.00%), Mitsui & Co., Ltd. (53.30%), and Ichimura Sangyo Co. Ltd. (3.30%).

According to a Jetro report (1990, p. 233), Tiga Industries has 1,046 employees with a 5 member of Board of Management (3 are Japanese), one Japanese advisor, and 8 Indonesian managers. The company's Board of Management consists of Mr. Musa, Indonesian (President Director), Mr. Masahiko Fujii, Japanese (Vice President Director), Mr. Akira Fukagawa, Japanese (Director), Mr. Otjeng Sutedja, Indonesian (Director), and Mr. Kunihiro Katsuragi, Japanese (Director).

The plant site of Tiga Industries is located in Salatiga, Central Java, with an area of 39,958 square meters. It started operating in August 1976 to produce synthetic filament fabrics and mixed fabrics and at present the company produces 18,000,000 yards fabrics annually. Some 90% of the raw material is supplied locally in Indonesia, but its technology came mostly from Japan with only a small part from Korea and Taiwan.

According to Drs. Pawardi, compared to the existing technology in Indonesia, the scale of the technology transferred from Japan to Indonesia can be regarded as 'medium scale', and its sophistication level is regarded as 'conventional' or 'fairly well established and wide spread in advanced countries'. It is believed that the technology being used in Tiga Industries is similar to that used in Japan and, therefore, no conflict was raised due to the technological application.

The technology was actually transferred through staff training, employing Japanese expatriate experts, and the

transfer of documents. The type of documents provided by the Japanese were in the form of plant layouts, process design, product specifications, and instruction manuals.

It was pointed out by Drs. Pawardi that the Japanese parent company transferred its technological expertise to Indonesia, and that expertise sophistication is regarded by him as 'average'. The reasons for the Japanese to transfer the technology to its subsidiary in Indonesia were because of

- (1) more liberal and favourable Indonesian regulations and policies towards foreign investment and technology transfer,
- (2) a more favourable socio-economic and political environment of Indonesia, such as low labour costs, and
- (3) the type of industry and product produced.

However, Drs. Pawardi suggested that these reasons might have been important, but "another important aspect that should be noted is the controlling power the Japanese have in the company. I believe that this power dimension could not be clearly seen in the organisational structure, but it could be seen in the day to day operation". As further argued by Drs. Pawardi, "it is true that the President Director is an Indonesian, but in practice the daily operation of the company is controlled by the Japanese executives. The Indonesian president director seems to function as a public figure to be used to deal with local Indonesian bureaucratic matters".

4.11.3 Management system and managerial skill formation

The system of management employed in this company is

the Japanese system of management. The employment of this system, according to Drs. Pawardi, should be seen within the context of the controlling power by the respective parties involved in this joint venture where the Japanese clearly possessing the most power in terms of share ownership. In other words, the operation of this company has been based upon, and directed largely by, the framework of the Japanese system of management practices.

The many aspects of the Japanese system of management practices have been modified and employed since the beginning of the company's operation. Those aspects are a life-time employment system, a seniority-based pay system and promotion, on-the-job training, long-term planning techniques, labour-management cooperation techniques, marketing techniques, decision-making by consensus, and just-in-time techniques. Some aspect of the system fully practised in the company include a group, rather than individual, responsibility system, emphasis on group harmony, a democratic and participative management system, and total quality control (TQC) techniques.

Meanwhile, there are other points that need to be mentioned here. As argued by Drs. Pawardi, a key element of the Japanese system of management practices is job rotation, and job rotation has been regarded as the main aspect of the training program to develop an employee's skill and expertise. This suggests that training is regarded as one of the most important mechanisms used in the skill formation program for an employee. The reality, as argued by Mr. Pawardi, suggests that "there is no written or formulated management training program, no job

rotation, and no clear job description outlined in this company. One is often told to do work that is not necessarily related to ones's responsibility". Drs. Pawardi further said that this kind of practice often confused some staff members in the office as they felt that they did not have a clear responsibility and working target. On the other hands, Drs. Pawardi said that "the present system of work practiced in the company can be seen as another form of job rotation, as the staff are often given different sets of responsibilities in the company".

It is true, however, that one of the Japanese management practices is skill formation so that employees are capable of doing the various duties assigned to them. The multi-skills concept is the essence of the skill formation techniques to develop the employees' skills and knowledge, which is why each staff member is often moved from job to job. This concept essentially intends each of the managerial staff to be a multi-skilled manager capable of doing several jobs. It is often seen in Japanese controlled companies that the multi-skilled managers have been created through the continuous development of the manager's human resource potential, especially by way of training and job rotation. However, as Drs. Pawardi stated "we do not have management training and job rotation program for managerial staff in this company. Therefore, our chance of acquiring more managerial skills and expertise is limited".

In view of the above, Drs. Pawardi was asked by this researcher 'how many of functional skills such as marketing, finance, administrative, and accounting, have

been acquired by you since joining this company ?'. He responded by stating " very many, especially skills relating to finance, and this is because of my long involvement with this company". However, he suggested that the acquisition of those skills was not because of his participation in any form of specific management training program, although he claimed to have participated in some off-the-job training such as attending seminars and conferences.

Meanwhile, long involvement with the company does not appear to guarantee a significant acquisition of other general managerial skills, as experienced by Drs. Pawardi. He stated that he had only acquired finance-related technical skills during his employment with the company and gained very few conceptual and human skills. That was despite of the fact, he said, that conceptual skills were extremely important to his present position. He believed that he would have an opportunity to acquire conceptual skills in the future, but again he said, "it very much depends upon (a) my own initiative, interest and ability to observe what is going on within the company, and (b) the direction and policy adopted by the company's executives in the future".

As in other Japanese controlled companies, the employee's own initiative, interest and observation on what is going on within the company has been largely responsible for them to acquire and understand managerial skills and knowledge. It is widely understood that the Japanese are very reluctant to transfer or expose their technological expertise, and that includes managerial skills, to anyone

other than the Japanese. That is why Drs. Pawardi said that "very few of the Indonesian managerial staff working here have acquired the Japanese specific managerial skills". When Drs. Pawardi was asked by this researcher about his acquisition of Japanese specific managerial skills, he replied by stating "not that many especially their theoretical aspects, because the Indonesian managerial staff working here have never or rarely been given any training or lessons in theory regarding the various concepts of the Japanese system of management practices".

It was further pointed out by Drs. Pawardi that there were two important points that were of interest to him, namely, (a) the concept of total quality control (TQC) and just-in-time (JIT) or **kanban** techniques, and (b) the working philosophy adopted by the company. Although, JIT has not been fully practiced in the company because of difficulties faced by the company in integrating and coordinating the various systems of work between the external practices (such as supplies of input and transportation system) and internal discipline, but the concept has been largely accepted, and in fact the concept has become one of the most important elements of the management system adopted by the company. Drs. Pawardi suggested that the same treatment is also given by the company concerning the TQC concept. He argued, "TQC has become the most important point of company management practices and which everyone has been told to always observe".

The concept of both JIT and TQC techniques has been implemented within the framework of, and supported by, the

working philosophy adopted by the company since the commencement of its operation. Some elements of the working philosophy, as noticed by Drs. Pawardi, are high working discipline, principles of high efficiency, that is, to work effectively and productively, a small bureaucratic system, freedom of each employee to set his/her own working targets or goals, the active participation of employees in the decision making process to implement any decision that has already been made by the company executives (it is the practice of this company that the most important points of any decision have already been decided by the Japanese executives in the head office in Tokyo), the stress on group teamwork and responsibility, and relatively close interaction between the staff and the executives.

The implementation of the above elements of the Japanese system of management provides a quite significant level of understanding by the Indonesian managerial staff of the nature of the system. At the same time, the application of the system, Drs Pawardi said, "assists the Indonesian managerial staff, including myself, to acquire some degree of Japanese managerial skills. However, the skills are limited to practical matters and not to their fundamental theoretical background".

Drs. Pawardi seemed to stress the word **limited** in describing the Japanese management practices within this company, because, as he saw it, the Japanese executives working in the company had shown reluctance in transferring their managerial expertise and knowledge to the locals. This was made clear by Drs. Pawardi when he said "the efforts of the Japanese executives to develop staff

expertise potential are not noticeable here, and this is indicated by there being no clearly outlined management training program and facilities instituted in this company". The absence of such as management training program and facility has led the Indonesian managerial staff to rely on individual initiative and personal observation to acquire management skills and knowledge in this Japanese - controlled company. The amount of the skills and knowledge acquired, according to Drs. Pawardi, "depends very much on his/her own enthusiasm and realisation about the needs of the skills and knowledge for his/her future career prospects within and/or outside this company".

In view of the above situation, Drs. Pawardi was then asked by this researcher 'how many of the Japanese specific management skills have been acquired by you?', and his reply was "not many in terms of its theoretical concepts and management strategic significance. However, I do have some understanding how the Japanese manage and operate a company such this".

4.12 P.T. CAHAYA INABA ELECTRIC, INDONESIA

INABA ELECTRIC WORK CO. LTD., JAPAN

4.12.1 Introduction

Only one visit to the Head Office of P.T. Cahaya Inaba Electric in Jakarta was made, arranged personally by the researcher. This visit was initially intended to make an appointment with one of the Indonesian managers. However, after explaining the purpose of the visit to one of the office staff, I was introduced to the only Indonesian senior manager, Mr. Yulius Riil, Chief of the Marketing Division. He then asked for the interview to be conducted straight away. The interview lasted for one hour and fifteen minutes in the company's conference room.

4.12.2 Background

P.T. Cahaya Inaba Electric is a joint venture between a Japanese company, Inaba Electric Work Co., Ltd. (which owns 70% of the company's shares) and two Indonesian companies, P.T. Pabrik Pipa Indonesia (10%) and P.T. Citra Surya Pagi (5%), and two Indonesian individuals, Mr. Herman Widjaya (7.50%) and Mr. Ridwan Widjaya (7.50%).

P.T. Cahaya Inaba Electric was established in March 1984 with any authorised capital of US\$ 5,300,000.00 and started operating in November 1985 to produce 14 different kinds of electronic equipment and parts. Some sixty percent of the company's raw materials and component are imported from Japan. The company's plant site of 7,457 square meters is Tangerang, West Java, about 23 kilometers outside of Jakarta.

The company has 97 employees consisting of 5 members of the Board of Management, 3 managers (one Japanese and 2 Indonesian), and one Japanese advisor. The rest are Indonesian workers. The Board of Management consists of a President Director Mr. Ryuzaburo Awata, Japanese, a Vice President Director (still vacant), and four Directors, Mr. Kiyoshi Katoh, Japanese, Mr. Rachman Utan, Indonesian, Mr. Usmar Utan, Indonesian, and Mr. Herman Widjaya, Indonesian.

Most of the company's technology comes from Japan, and the rest comes from various countries, including the United States of America. The scale of the technology, according to Mr. Riil who has been working for this company for six years, was rated as 'medium scale' compared to the technology being used in various companies in Indonesia. Compared to the technology being used in Japan, the Japanese technology transferred to Indonesia was not very sophisticated, and, according to Mr. Riil, "in fact some of the technology is between five to ten years behind, and only a very small portion of the technology is very advanced". The reasons for the different sophistication level of the technology transferred by the Japanese to Indonesia, Mr. Riil suggested, are Indonesian low labour costs, differences in the government's industrial policies and regulations, and differences in market orientation with the technology transferred to Indonesia aimed at satisfying the Indonesian domestic market. More importantly, it is part of a Japanese strategic market decision and strategy to maintain their control and monopoly on the Indonesian markets. It was argued by Mr.

Riil that the Japanese decision and strategy have seemed to work up to now, and this has been made possible by "their controlling power in the company and their technological superiority to maintain their competitive edge". Furthermore, it was argued by Mr. Riil that the Japanese technological superiority "will continue their control over the company and over the local markets, and in the short and medium term, the Indonesian partners will continue to depend upon the Japanese technological superiority to keep their domestic competitive advantage".

The mechanisms used to transfer the technology from Japan to Indonesia are the employment of Japanese experts and the transfer of documents in the form of plant layouts, process designs, product specifications, computer programs and instruction manuals. As part of the technology transfer process, the Japanese transferred their technological expertise to Indonesia, but the expertise, as suggested by Mr. Riil, is not as advanced as the one utilised in Japan because the Japanese do not export the most advanced technology. With respect to this, two important critics were made by Mr. Riil, namely, (a) the technology transferred through documents was mostly in foreign languages, notably the Japanese language, which was difficult to comprehend by the Indonesian staff; and (b) a management training program was not formally instituted in the company to accommodate the transfer of technology. All this, according to Mr. Riil, has made "the transfer of technology less effective because the transfer provides little contribution to the development of the locals' technological expertise. But that does not mean the locals

do not gain anything from this joint venture". One of the important gains, suggested by Mr. Riil, was the locals' exposure to the techniques of work and management system of Japanese business.

4.12.3 Management system and managerial skill acquired

Close observation of the operation of the company clearly indicates that the Japanese system of management has been implemented and the system has become the basis of the company's operation.

However, the implementation of the Japanese system of management is only partial, because not all of the system elements are practiced in the company. For example, seniority-based pay and promotion is not fully practiced, because both promotion and pay increases are based upon seniority and an employee's achievement. Job rotation, off-the-job training, special consideration of employees' personal welfare, and just-in-time (JIT) or **kanban** techniques are not practised in this company. However, other elements, such as decision making by consensus, democratic and participative management, a system of a group, rather than individual, responsibility group harmony, and total quality control (TQC) are employed a greater degree than any other system elements. The employment of these elements, according to Mr. Riil, "has been the main basis by which this company has been managed by the Japanese executives".

Mr. Riil expressed the view that the application of the Japanese system of management has resulted in (a) high working discipline among Indonesian employees. This effect

has been made possible because of the system itself and the way the Japanese executive demonstrate their work practices, (b) increased productivity, sales and quality of goods produced. To achieve these results, the Japanese executive style of leadership, as characterised by Mr. Riil, "is not that special in comparison with leadership Indonesian executives. What is special about Japanese leadership is that they show us that they work hard and longer hours, they are very serious in doing their job and they have also succeeded in implanting a sense of belonging or loyalty of employees to the company, and in implanting a sense of shared responsibility and group achievement among employees in this company".

However, one impression formed from conducting an interview with Mr. Riil was that he seemed basically to understand the work techniques and management system of the Japanese. However, when he was asked in more depth about aspects of Japanese strategic management decision-making and policy, he responded by stating his understanding was "very limited. This was because of the reluctance of Japanese executive to invite Indonesian managerial staff to take part in discussing the company's strategic decisions". Mr. Riil believes that one of the main keys to success in organising and managing a company is the ability of executives to make the right strategic decisions and policy. However, he then stated that "the Japanese seem unwilling to share their ability of making strategic decisions and policy with their counterparts in this company. It is understood, however, that strategic decisions and policy are company secrets that the Japanese

have to keep to themselves". In view of this fact, Mr. Riil suggested that "to be able to acquire management skills or managerial expertise, the staff must take their own initiative to learn and observe closely how the company is run and managed. One cannot expect that the technology transferor will be willing to share their technological secrets with others, without significant returns".

In light of the prevailing conditions in P.T. Cahaya Inaba Electric, Mr. Riil was then questioned by concerning the company's efforts to develop employees' human potential. It was explained by Mr. Riil that although it was commonly understood by the employees working in this company that one of the main concepts in Japanese skill formation is multi-skilling employees, in which employees are expected to have the capability to do various jobs and are not necessarily confined to his or her one single job in the company. The way in which skill formation is implemented is by providing education, training, learning, and working experience and developing the employees' personal potentials. When this concept was raised with Mr. Riil, he seemed to find some difficulty in explaining the situation in the company by stating "the concept [of Japanese skill formation] is understandable and acceptable to us, but it is implemented only very limited in this company. In fact, as far as I know, no comprehensive designed management training program has been made to develop local managerial staff. Therefore, I cannot expect a significant transfer of Japanese managerial skills to us".

Mr. Riil was later asked 'how many Japanese specific

management skills have you acquired since working with this company?'. His answer was "it varies. Some a little bit more than others, but overall not that much especially the skills dealing with strategic management". Mr. Riil elaborated on his answer by explaining that his acquisition of JIT and TQC skills was only in practical terms. However, he conceded that he did not know precisely how the theoretical background to the skills are formed and best implemented in such a way to provide the greatest impact to achieve the company's strategic mission. The same argument was also suggested in the case of implementing the Japanese management concept of planning, labour-management cooperation, and decision making process.

Although Mr. Riil indicated that he had not acquired a great deal of Japanese specific management skills, he did, however, state that "I had acquired quite a few professional skills, especially those skills relating to his portfolio of marketing matters". This degree of professional or functional skill acquisition was made possible because of his direct responsibility for the marketing division of the company and his relatively close interaction with Japanese executives working in the company. When Mr. Riil was pressed to identify what single factor has contributed most significantly to his acquisition of such skills, he stated that it was "my position as chief of the marketing division". The same factor, he said, also played a role in assisting him to acquire general management skills.

After explaining the concept and elements of these skills, Mr. Riil was then asked what amount of such skills

he had acquired and the importance of the skills to his job. His reply to the question suggests that he had acquired more marketing management technical skills than conceptual and human skills. Although he believes that technical skills are important, his present position and responsibility require a great many of the conceptual and human skills. The reason why he had acquired very little of these two types of skill was he said, because "we [the Indonesian staff] were given very little opportunities by the company executives to have top managerial responsibility. Here, in this company, I was provided no direct involvement in top executive strategic decision making process, and I was provided with no specific management program to enable me to acquire these skills". Nevertheless, he indicated that he was quite optimistic of being able to acquire these skills in the future, if the company was prepared to provide opportunities to the local managerial staff to develop their human potential.

In analysing the management practices of this company and the nature and type of management skills acquired by the Indonesian managerial staff, as represented by Mr. Riil, it is clear that the technology transferred by the Japanese to this company not very sophisticated or more advanced than in Japan. At the same time, the Indonesian managers seem to have acquired some limited amount of Japanese management skills, especially strategic management related skills, although the skills were relatively more advanced than the skills already in Indonesia, and are not far more advanced compared to those already in existence in most developing countries.

4.13 P.T. NIPPON STEEL CONSTRUCTION INDONESIA, INDONESIA

NIPPON STEEL CORPORATION, JAPAN

4.13.1 Introduction

The visit to P.T. Nippon Steel Construction Indonesia (formally abbreviated as NISCONI) was arranged by the researcher. The interview was conducted twice with Mr. Budi Santoso, Chief Engineer of Nisconi, on different day at the company's head office in Jakarta. The researcher agreed as a condition of interview on a semi-confidential basis, and each interview lasted for one and a half hours. An interview with one of the Japanese executives was unsuccessful, although an appointment had already been made a day earlier. One reason for this, according to a front office staff member, was " they are too busy and out of the office".

Nisconi has a plant site area of 40,000 square meters with 400 square meters floor space located in Indramayu, West Java.

4.13.2 Background

P.T. Nippon Steel Construction Indonesia was established in September 1972 with an authorised capital of US\$1,500,000 contributed respectively by a Japanese company, Nippon Steel Corporation (70%), the world's largest steel producer, and two Indonesian partners, PERTAMINA (Perusahaan Pertambangan Minyak dan Gas Bumi Negara), the Indonesian government petroleum company (20.00%), and P.T. Elnusa which joined the company in 1982 as one of the major partners (10.%).

P.T. Nisconi offers a complete ranges of onshore and offshore engineering and construction services. In particular, it can carry out a wide variety of services ranging from engineering, material procurement, fabrication and construction for offshore platforms, submarine and onland pipelines, oil/gas treating and transfer facilities. LPG/LNG production and storage facilities, and steel structures such as bridges, piers/jetties, building and tanks. The company has strong support and back up from Nippon Steel Corporation, an internationally known company experienced in the engineering and construction sector as well as in steel production.

It has been reported (P.T. Nisconi, 1990, p. 2) that one of the important factors in this company's ability to undertake complex projects is that it has the advantage of being assured a steady supply of excellent quality steel materials and has access to the latest technological developments in the field of steel from one of its parent company, while drawing on the most up to date oil and gas technology from its Indonesian partner, Pertamina.

The company started operating in November 1972 and 1991 the company has 106 employees consisting of 7 expatriates and 99 Indonesians. There is one Japanese advisor and 10 managers, of which 3 are Japanese and 7 are Indonesian. Its Board of Management consists of President Director Mr. Sadao Kubota, Japanese, Vice President Director (vacant), and three Directors, they are Mr. Ir. Arifin Sumitramihardja, Indonesian, Mr. Kousuke Fujikawa, Japanese, and Mr. Keiichi Tajiri, Japanese.

As suggested above, this company is controlled by the

Japanese and, as expected, the system of management is Japanese and the main source of its technology is Japan. A minor source of technology is the United States of America.

The Japanese technology transferred to Indonesia was large scale and could be classified as 'sophisticated' and 'up to date' technology. Compared to the existing technology, the transferred technology is considered as very sophisticated indeed, but is different from the technology being used in the parent company in Japan. The reasons for this difference are due to differences in labour costs, since labour in Indonesia is much cheaper than in Japan, at least availability of technical skill since Japan has more skilled technical workers, the availability of capital since Indonesia is more limited, much more relaxed government industrial and environmental regulations , and market orientation since this company focuses more on Indonesia.

The technology was transferred not through the training of Indonesian staff, as no training has been provided to the locals, but through the employment of Japanese experts and through transfer of documents such as plant layouts, product specification, and instruction manuals. However, the problem is that most of the documents sent to Indonesia were in the Japanese language which created a great deal of difficulty for the Indonesian staff in comprehending the technology. This situation, according to Mr. Budi Santoso, a civil engineering graduate from Bandung Institute of Technology (ITB), has made "the technology transfer less effective and does not provide significant impact on improving the locals' managerial and

technological expertise".

An observation made by Mr. Santoso suggests that the sophistication of Japanese technological expertise is very high but only a very small amount of it has been transferred to the Indonesian subsidiary. It seems that the Japanese are reluctant to transfer their technological expertise, and no precise or stated reason has been given as to why the Japanese do so. Mr. Santoso argued that possible Japanese reasons are "(a) to keep their Indonesian partner technologically dependent on the Japanese, and (b) to maintain their competitive edge in the market". It was further pointed out by Mr. Santoso that these reasons were only guesses, and only the Japanese would know the exact reason.

The transfer of Japanese technology to Indonesia and the operation of the company has been successfully controlled and guided by the Japanese system of management. That system provides the best framework and basis for the Japanese to set up their business activities to achieve their strategic mission, and also to direct the company's operations.

4.13.3 The system of management and skills acquired

The Japanese system of management has been employed by this company, although not fully. Most elements of that management system were modified. Mr. Santoso argued that he did not know the basis of the modification of the system. However, he stated that "it might be due to environmental differences in terms of culture, customs, and local government regulations and system". Despite these

modifications, he suggested that a great number of Japanese management practices were implemented under direct Japanese control and supervision.

The modified elements of the system practices implemented in this company include:

- (1) A life-time employment system.
- (2) Seniority-based pay and promotion. However, a problem with this element is that it does not stimulate employees to work harder since increases in pay and promotion are determined by the length of time worked in the company.
- (3) Group, rather than individual, responsibility, and an emphasis on group harmony. The application of these elements was found, but many staff were disappointed because their individual efforts were not spontaneously appreciated which in turn provided less incentive for the staff to work harder. The emphasis on the group and, therefore, the company, has neglected the important relationship between the staff and executives. Many staff feel discontent about labour-management relations and cooperation, because of the lack by the executives to appreciate and pay attention to the work and contributions made by individual staff.
- (4) Training and job rotation. There is no management training given to the staff. The only training is 'a three month introductory training program' given for those who are joining the company for the first time. No further training is given after this and no job rotation is given afterward.
- (5) Just-in-time (JIT) or **kanban** and total quality control

(TQC) techniques are practised fully, but the local staff have not been or taught the concept.

The implementation of the above elements of the system has been in line with quality standards that have to be followed by the company and to be continuously observed by the staff working in the company. However, the implementation of the system elements, according to Mr. Santoso, provides some difficulties, because "while the staff are expected to work under the system, they are not well-equipped with the necessary skills, expertise or knowledge concerning the system". The absence of these skills, expertise and knowledge means that "the Indonesian staff are only regarded as operators who do not have human values and potentials".

Although it is recognised that the company put a great deal of trust in the capability of the Indonesian staff to accomplish the company's strategic mission, Mr. Santoso stated that "the company's executives have not shown any indication of interest in developing the human potential of the local staff". He realised that this human potential development requires the sharing of Japanese management system related skills, knowledge and expertise, but that requirement, according to Mr. Santoso "should be observed by the Japanese executives, because it is a part of their responsibility to the host country as stipulated in Indonesian foreign investment regulations". In view of this, it appears that the Indonesian government regulations do not have any impact on this company's executives to compel them to provide training to the local Indonesian employees.

The Indonesian government foreign investment policy requires foreign investors or technology transferors, including Japan, to train the local employees. This training requirement for foreign investment in, and technology transfer to, Indonesia subjects the Indonesian government's intention that the formation and development of the locals' skills should be undertaken and this is the responsibility of the technology transferor or foreign investor. The development of the locals' skills is essentially a transfer of skills from the technology transferor or foreign investor to the host country's employees. Mr. Santoso stated that "up to now this company has not acknowledged its responsibility to transfer the skills to, and to develop the skills of, the Indonesian staff working here in this company, most notably management related skills".

It was pointed out by Mr. Santoso, however, that although there was no training program, he believed that his involvement in this company's business operation in Indonesia had given him "some knowledge of how the Japanese structure and manage their business organisation as well as controlling and utilising the company's human resources for the company's benefit".

The involvement of the local Indonesian staff in the company was outlined in terms of Mr. Santoso's work experience in the company. He suggested that his and other staffs' involvement were restricted to implementing the company's decision to achieve its goals or to realise its strategic mission. It was suggested by Mr. Santoso that the so-called Japanese democratic and participative system of

management is not implemented here, and he in fact stated that " decision-making by consensus may only hold among, and for, the Japanese, not for us here in this company, because there has been no attempt by the Japanese to involve us, the Indonesian staff, in any strategic decision making process". Mr. Santoso further illustrated his point by stating that strategic decisions such as those determining the company's project evaluations, long-term plans, and marketing strategies are the ultimate right of the Japanese executives. As is common practised for most Japanese companies operating in Indonesia, the main elements of any decision to be made are generally already determined either by the company's headquarters in Japan or by the local Japanese executives in the company. This leaves the local managerial staff to be involved in information gathering as required by the company's decision-making process, or alternatively the local staff are invited to participate in formulating strategy or mechanisms to implement the already made decisions.

Having been exposed to management practices in this company, Mr. Santoso was then asked how many of the Japanese specific management skills have been acquired by him. His reply was "very few as I only know the practical aspects of the system without understanding the essential notion of each concept of the management system". He then elaborated on this by suggesting that despite his limited acquisition of Japanese managerial skills, he conceded that his involvement in this company had provided him with some understanding of how to run this type of company. The consequence of all this, he said was that he had "acquired

very few of either conceptual or human skills, despite the fact that I am in need of these skills as they are important for me to do my job". The same applies in the case of his acquisition of professional managerial skills. He foresaw no possibility in the intermediate future of being able to acquire these skills, because, he said "the company does not have any plan to provide any management training for local staff as they seem to regard that such a training is not necessary and important to the company". In other words, the company seems quite satisfied with what they have got at present.

With respect to professional managerial skills, Mr. Santoso suggested that, in general, he had acquired some amount of professional skills related to his work and responsibility, but the skills were not "specific because no medium or training opportunity have been available to develop the skills".

Meanwhile, should the company provide management training in the future, Mr. Santoso believed that the most effective modes of training would be in the form of on-the-job and off-the-job training, learning from experience or hands on experience, and a counterpart system, that is working with more advanced and experienced companies. However, Mr. Santoso concluded that "however important the need of developing the staff's skills and expertise perceived by the Indonesian staff, ultimately it will be decided by the Japanese executive, because they the ones who have the controlling power to determine the future direction and operations of the company".

4.14 P.T. INDONESIA ASAHAN ALUMINIUM, INDONESIA

NIPPON ASAHAN ALUMINIUM CO., LTD., JAPAN

4.14.1 Introduction

The visit to P.T. Indonesia Asahan Aluminium, abbreviated to P.T. Inalum, was arranged by the researcher. The interviewees were Mr. Taufiq Firdaus, BSc, and Drs. I Gusti Ngurah Bagus Antara, both Deputy Managers of the General Affairs and Personnel Division, at the company head office in Jakarta. Mr. Taufiq Firdaus was the main interviewee and two interviews were made with him on two different occasions. Like the other Japanese subsidiaries operating in Indonesia, the Japanese executives and managers declined to be interviewed.

4.14.2 Background

The historical background (Inalum 1990, pp.6-11) to the establishment of this company started with efforts to develop the Asahan River, the only river flowing from Lake Toba in North Sumatra to the Straits of Malaka. Efforts were made during and after the Japanese occupation. In 1962, the Indonesian Government signed an agreement with the USSR Government to conduct a feasibility study for an Asahan development project. Nevertheless, political conditions and the unfavourable situation in 1966 caused this project to fail.

In 1968, Nippon Koei, a Japanese consultant, submitted an interim report on the Asahan Aluminium Project of North Sumatra and this was followed by a report on a power development project. In 1970, there was a signing of

a memorandum between the Ministry of Public Works and Electricity with Nippon Koei for engineering services on the plant. The final report was submitted in 1972.

In 1972 the Indonesian Government issued a tender for the construction of the aluminum smelter plant and the hydroelectric power plant as one package of foreign investment. Aluminium companies from Japan, U.S.A., Canada, then West Germany, France Italy, Switzerland, Dutch and Australia were invited for the tender. When the tender was closed in 1973, however, none of them submitted their bids because this project needed an enormous investment and it was difficult for them to raise the necessary funds.

After lengthy negotiations, the Japanese company group consisting of 12 companies, led by Sumitomo Chemical, finally reached the agreement with the Indonesian Government to construct the this ambitious project. On July 7, 1975, the Master Agreement between the Indonesian Government and the investors for Asahan Hydroelectric and Aluminum project was signed in Tokyo.

The twelve Japanese companies then formed an investment company in Tokyo and named it Nippon Asahan Aluminium Co., Ltd. in November 1975. The shareholders of this company are Overseas Economic Cooperation Fund of Japan 50% and the group of Japanese companies with 50% of shares.

To execute the Asahan project, P.T. Indonesia Asahan Aluminium, a joint venture company between the Indonesian Government and Nippon Asahan Aluminium Co., Ltd., was established on January 6, 1976 in Jakarta with an authorised capital of US\$ 796,000,000.00, and this capital

was then transformed into an equity participation of 10% and 90% respectively. The shareholding ratio changed to 25% and 75% respectively in October 9, 1978. Since June 29, 1987, it has become 41% for the Indonesian Government and 59% for Nippon Asahan Aluminium.

This company has its head office in Jakarta, two offices in Medan, North Sumatra, and Tokyo, a smelting plant in Kuala Tanjung and power plant in Paritohan, North Sumatra.

At present the company has 2,703 employees and produces 225,000 metric tons of aluminium ingot annually. The 2,703 employees consist of 7 members of Board of Management, 2 Japanese advisors, 112 managers (11 Japanese and 101 Indonesian), with the rest being foremen and workers. The members of the Board of Management consist of the President Director, Mr. Motoji Minamiura, Japanese, the Deputy President Director (vacant), and the other Directors are Mr. H. Djauhar Masyhur, Indonesian, in charge of the General Affairs and Personnel Division, Mr. Sjafar B. Sunambela, Indonesian, in charge of the smelting plant, Mr. Soenarto Wirjosoepadmo, Indonesian, in charge of the business division, Mr. Fumikazu Kato, Japanese, in charge of technical advice to the President, Mr. Ikuo Takano, Japanese, in charge of the planning and finance division, and the other Directors are Mr. L.H. Is. Soemantri, Indonesian, Mr. Masahiko and Mr. Shigeo Maekawa, both Japanese (Jetro 1991, p. 81).

From the above organisational structure and equity participation, it can be seen that the Japanese are in control of the running of the company. The consequence of

this control, according to both Mr. Firdaus and Mr. Antara, is that the company must have technology transferred from Japan, as Japan is the only source of the company's technology and, therefore, it must adopt the Japanese system of management.

The transfer of technology and the establishment of this joint venture were initiated by the Indonesian Government. As a junior partner in the venture, the Indonesian government contributed little in the provision of the company's need for technology which then left the Japanese partner to be the generator of the company's operation.

When the technology was transferred to Indonesia, it was considered to be the most sophisticated and advanced technology in that industry in Indonesia. However, an analysis made by Mr. Firdaus who has 12 years working experience with this company, stated that "currently the company's technology is not that advanced any more, because (a) other companies have better and more sophisticated technology, and (b) the Japanese partner transferred second rate technology, or at least very much different technology from that used in Japan".

It was suggested further by Mr. Firdaus that although the Indonesian government put great emphasis upon the Japanese technology transferred to Indonesia, it seems that the Indonesian government has not provided any solid foundation or framework to guide the technology transfer. Mr. Firdaus stated that there was no clear regulatory measures or strict conditions put forward by the Indonesian government concerning the type, nature and

sophistication level of technology when the technology was first transferred to Indonesia. This situation provided the Japanese partner with the freedom to transfer any type of technology to Indonesia. Because of this, as observed by both Mr. Firdaus and Mr. Antara, the Japanese choice to transfer their technology through this joint venture mechanism. In essence, Mr. Firdaus and Mr. Antara suggested that this was made possible due to (1) weak or more liberal Indonesian foreign investment regulations and policies which are favourable to Japanese; (2) the more favourable Indonesian socio-economic and political environment with its low cost of labour and raw materials, and political stability; and (3) Japanese tough environmental regulations by which the Japanese government places strict control over environmental impact.

The Japanese have utilised almost all transfer mechanisms to bring their technology to Indonesia, including the employment of experts, technical training, and transfer of documents. However, Mr. Firdaus stated that "the Indonesian partner does not have any significant role in, and control over, the transfer process. As a result Indonesia does not have any involvement in the selection of the technology transferred to Indonesia". According to both Mr. Firdaus and Mr. Antara, the reason for this situation has occurred because (a) the Japanese, whether by accident or by design, have managed to become the major shareholder in the joint venture, and therefore control the policy and management of the company, and (b) the Japanese have had the technological advantage which then became their tool to create Indonesian technological dependence on Japan.

The establishment of this company in Indonesia has provided opportunities for the Indonesians to get involved directly in its operation as guided and controlled by the Japanese system of management. This involvement has also exposed the Indonesian employees to both the technological and also managerial expertise embedded in the Japanese system of management and technology transfer.

4.14.3 The system of management and skill acquisition

The Japanese management system has clearly become the basis by which this company has been managed. However, not all elements of the system are practised, since Indonesian environmental specifics such as culture, tradition, working habits the political political framework are different from that of Japan. As noted by the interviewees, Mr. Firdaus and Mr. Antara, elements such as just-in-time, total quality control, long-term plan techniques, and a life-time employment system have been on the whole put into practice. However, there are other elements of the system that are supposedly practised in this company which are in fact intended only for the Japanese staff. The elements in question are special consideration of employees' personal welfare, decision-making by consensus, and a democratic and participative management system. The interviewees stated that "there has been no attention given to the Indonesian managerial staff concerning their welfare while the Japanese staff have gained all the benefits. The same applies in the case of decision-making where only the Japanese are invited to be involved in the decision making process and the Indonesian

staff are excluded".

In view of the above, Mr. Firdaus was then asked by the researcher regarding decision-making and consensus. He stated that one of the key concepts of the system was that of group harmony and teamwork among staff. When these aspects were implemented, then the consequence was that the company ought to involve all managerial staff, including Indonesians, in the decision-making process. The involvement of the staff would, therefore, develop their sense of belonging to the company. However, he stated "what the executives have done here is that they have already decided what need to be decided, and then ask the managerial staff to support the decision by consensus. So there is no involvement on our part including myself".

The nature of the Japanese management practices in this company are not very much different from other Japanese companies operating in Indonesia. The observation, experience, and statements made by both Mr. Firdaus and Mr. Antara confirm a general belief concerning the characteristics of the Japanese controlled company, as also seen in this company, such as with training program of the company's employees generally and local workers particularly.

As generally understood, one of the most important modes for effective Japanese technology transfer is a provision of training programs either in the form of on-the-job or off-the-job training. Part of the training program is the implementation of job rotation activity. In the Japanese case, training has been regarded as a key ingredient for forming and developing an employee's skills

whether for the technical or managerial staff.

However, the reality in this company, according to Mr. Firdaus, is that only the technical workers are provided with a training program to develop their technical skills and expertise, and no such training is given to the managerial staff. The reason for this is that the company, Mr. Antara believed, does not regard it necessary and important. This he said was because "the Japanese executives may be worried that the Indonesian managerial staff will be too clever or will know too much, not only about managing the company but also about other things that are regarded as secret or strategic".

In view of the above discussion, both Mr. Antara and Mr. Firdaus were asked 'how many of the Japanese system of management-related skills have you acquired?'. Mr. Antara replied by saying "in terms of skills needed about how a productive company should be managed and operated on the basis of the Japanese system of management, not very many, but I learn quite a lot concerning the behaviour of the Japanese executives in terms of their approach towards work and staff". Mr. Antara blamed that the absence of a management training program as partly responsible for him and the local managerial staff having gained only a limited amount of Japanese-specific managerial skills.

Mr. Firdaus' reply was different from that of Mr. Antara. Before joining this company, he had worked for a Japanese company in Indonesia and was sent to Japan for two years for training. Therefore, he said that he understood a great deal of the practices of the Japanese management concept and system. With this background, he claimed that

although he had been working for this company for 12 years, he had only acquired "very few new Japanese specific managerial skills, especially skills which relate to the strategic management of the company". The same level of acquisition also applied in the case of the so-called general managerial skills in the form of conceptual, human and technical skills.

It was stated by Mr. Firdaus that though he was one of the Indonesian managerial staff who have worked here for quite a long time, he had gained only very few conceptual and human skills, that despite the fact that his job requires him to have more of these skills, especially the human one given he always deals with people. The same response was also echoed by Mr. Antara. Both of them believe that they will not have an opportunity to develop and acquire such conceptual and human skills in the future, because, they said, "the past trend and practices of this company with respect to human resource development program are not that promising, and we expect that such practice are set to continue as long as no change in the control and management of the company takes place".

They expressed same kind of expectation with regard to their acquisition of professional skills. They said they only knew about their own work, although, according to the system of management adopted here, they should be rotated to enable them to acquire other professional skills such as in marketing, finance and personnel. Job rotation, as intended in this system, is assumed to be a part of the efforts to create a multi-skilled managerial staff.

4.15 P.T. SEMEN NUSANTARA, INDONESIA

MITSUI & CO., LTD., JAPAN

ONODA CEMENT CO & LTD., JAPAN

4.15.1 Introduction

After making three visits to P.T. Semen Nusantara an appointment was successfully made with one of the Indonesian managers working this company. He was Mr. D. Soetrisno, SH, Manager of the General Administration and Accounting Division, at the company's head office in Jakarta. However, before my appointment was accepted by Mr. Soetrisno, he had to discuss the question of the interview with, and ask for approval from, the top Japanese executives. The interview lasted for almost three hours. As was the case at the other Japanese subsidiaries operating in Indonesia, the Japanese executives and managers also decline to be interviewed.

Mr. Soetrisno, a university law graduate, has been working with this company for 13 years. Before he joined this company, he worked both as a lawyer and with other Indonesian companies for more than 10 years. His educational and professional background, he said, were responsible for helping him to get a managerial position in this company.

P.T. Semen Nusantara has a factory and plant area of 301,961 square meters located in Cilacap, Central Java, around 550 kms from Jakarta.

4.14.2 Background

Semen Nusantara is a subsidiary of two Japanese

companies, and was established in March 1974 through a joint venture agreement between an Indonesian company, P.T. Gunung Ngadeg Djaja, and two Japanese multinational corporations, Mitsui and Onoda Cement. The authorised capital of the joint venture was US\$ 21,000,000 of which 20% is owned by Gunung Ngadeg Djaja, 35% is controlled by Mitsui and 35% is owned by Onoda Cement. The company commenced its manufacturing operations in July 1977 to produce 955,823 tons of ordinary portland cement annually.

According to its reports (P.T. Semen Nusantara, 1987 and Jetro, 1991) the company has 1,007 employees consisting of 28 Indonesian managers, 4 Japanese advisors, and members of Board of Management. The structure of the company's Board of Management consists of the President Director, Mr. Bernard Ibnu Hardjojo, Indonesian, a Vice President Director, Mr. Shigeru Kawakami, Japanese, and seven Directors, Mr. Kiyoaki Yahiro, Japanese, Drs. Soedjoko, Indonesian, Ir. Soenardjo, Indonesian, Mr. H. Tsukahara, Japanese, Mr. R. Mochimatsu, Japanese, Mr. Isao Ito, Japanese, and Mr. T. Kitajima, Japanese.

Judging from the the equity participation and membership of the company's board of management, as well as the daily operation of the company, Mr. Soetrisno stated that "the company is run and controlled by Japanese. This control has been clearly proven by the employment of the Japanese system of management and the transfer of Japanese technology to this company". In fact, Mr. Soetrisno further stated, "Japan is the only source of the company's technology and there is no indication emerging to suggest that other sources of technology are being considered".

The transfer of Japanese technology to Indonesia was initiated by the Indonesian government to invite Japanese companies to come to Indonesia, and the Japanese partners welcomed this invitation. This invitation has been largely responsible for motivating the Japanese companies to operate in Indonesia. However, it was pointed out by Mr. Soetrisno that other factors also played a very important role in encouraging the Japanese to transfer their technology to Indonesia. The factors, as identified by Mr. Soetrisno were:

- (1) Indonesian cheap labour costs
- (2) A difference in the availability of technical staff where Indonesia is believed to have many fewer capable technical workers, but they have the potential and are ready to be trained by the Japanese experts
- (3) Relatively less stringent environmental controls in Indonesia
- (4) More liberal and favourable Indonesian economic and foreign investment policies
- (5) Indonesia's stable political environment
- (6) The very large market potential in Indonesia
- (7) A guaranteed demand for the products produced in Indonesia.
- (8) The Japanese expectation to largely control and manage the company's operation

Mr. Soetrisno further argued that the Japanese might have believed that they would not face any significant competition in Indonesian markets, and they should not put a great deal of efforts to gain a larger market share.

Given the above points, the Japanese should not have

experienced any major difficulty in transferring their technology to Indonesia. Despite the fact that the scale of the technology transferred was large and sophisticated compared, at the time of transfer, to other technologies used in advanced countries, the technology transferred to Indonesian is still regarded as very sophisticated technology in Indonesia. It was stated by Mr. Soetrisno that the company is always making efforts to improve or update the existing technology to be more relevant to, and competitive in, today's competitive markets. These efforts were made not only on the technological front, but also with respect to (a) mechanisms used to transfer the technology such as through the training of staff, the employment of Japanese experts, and the transfer of documents, and (b) the application of various elements of the management system employed by the company.

4.15.3 The system of management

With respect to this company, Indonesian management practices are the only alternative to the Japanese system of management. However, since the establishment this company, the company has chosen and adopted the Japanese system of management as the system to follow. Thus the Japanese system of management has become the sole basis by which this company has been managed. It was pointed out by Mr. Soetrisno that only a few practices of the Japanese system of management have been fully implemented in this company, while other elements of the system has been modified. Two of those few elements that have been fully implemented are just-in-time (JIT) or **kanban** and total

quality control (TQC) techniques. Their implementation is wide spread at every aspect of the company's productive activities either on the shop floor or in the office. This is, according to Mr. Soetrisno, because, the techniques, as perceived by the top management executives of the company, are "the keys to achieve the objective of reducing or lowering production costs and improving quality of products. Only when this objective is achieved can the company sustain its competitive advantage and enlarge its market share".

A close investigation of the company's operations and intensive discussions and the interview undertaken on the analysis and observation made by Mr. Soetrisno on the operation and management of the company revealed some points that deserve special attention.

Firstly, the introduction and application of the Japanese system of management has proved that the company can be run effectively to achieve the company's strategic mission. This achievement, according to Mr. Soetrisno, has been reflected in the expansion of the company's operation and an increase in production over the years. However, its effectiveness should be seen from the Japanese executive's point of view. Mr. Soetrisno stated that "the groupist, rather than in place of individualist, approach to work and participative management system implies that everyone in the company should be respected and appreciated. However, the Japanese executives gives no authority to the Indonesian managerial staff to run this company. We are just regarded as machines and they always place us in a second position".

Secondly, the Japanese system of management has successfully transformed Indonesian working behaviour from that of a lack of discipline to one of active, very disciplined and result-oriented workers. However, Mr. Soetrisno stated that "the Indonesian staff feel some kind of frustration because there is no prospect of immediate promotion and increased pay for successful and ambitious staff. This is a result of the implementation of the seniority and life-time employment concept".

Thirdly, the system of management adopted by this company has provided greater working freedom in the work place where the staff are trusted to do their own job in their own time and way. Mr. Soetrisno noted that the Indonesian managerial staff finds it "great" as the Japanese executives have exemplified it by working harder, more seriously, and longer time.

Fourthly, the system of management has, in many respects, provided greater working flexibility and close interaction among the staff, and each staff can expect the support or help from others. However, Mr. Soetrisno stated that "there is a social gap and a kind of isolation between the Japanese and Indonesian staff. This may be due to cultural difference which becomes a social barrier between the Japanese and Indonesian staff". He then commented further that "I believe that both the Japanese and Indonesian staff have done their jobs well, but the Japanese seem always to keep their distance from the Indonesian managerial staff, and this is not the way it should be in Indonesia".

Fifthly, the system of management has succeeded in

motivating the staff to work harder and get the staff involved in their work. However, Mr. Soetrisno stated "the involvement of Indonesian staff is restricted to working only. They are excluded from involvement in the decision-making process. This exclusion has barred the locals from activities of formulating any strategic decisions and planning, and from managing the company". He further elaborated on this by saying that this exclusion will close any avenue for Indonesian managerial staff to learn and obtain Japanese managerial skills or expertise.

In view of the above points Mr. Soetrisno was then asked by the research concerning the amount of managerial skills, expertise and knowledge acquired during his employment with this company. On this question he stated "I have acquired some of those skills but not that many. Nevertheless, at least I understand the way the Japanese run the company".

4.15.4 The acquisition of managerial skills

There are three types of managerial skills which are expected to be acquired by the Indonesian managerial staff working in this company, namely, Japanese specific managerial skills, general managerial skills consisting of conceptual, human, and technical skills, and professional skills.

Mr. Soetrisno had expected to acquire a great amount of such skills considering his position as manager and his long association with this company. With respect to professional skills, he believed that he had acquired "many professional skills especially the skills relating to my

portfolio, that is administration and accounting, and only a few skills related to other disciplines such as marketing, production management, exporting management, and personnel matters". It was suggested that his limited acquisition of professional skills was due to (a) limited access to other divisions' work and responsibilities, and that this could be overcome had there been a job rotation program implemented at the management level, and (b) limited association and involvement with the top executive circle, especially when it deals with strategic decision making process.

The acquisition of general managerial skills was very significant. As stated by Mr. Soetrisno, there were "very many, notably the conceptual and human skills acquired, but not so many technical skills". It was argued by him that his acquisition of these skills was made possible by three factors, that is, (a) his relatively high management position as manager which required not only a greater amount of duties, responsibility and power than technical staff, but also provide more exposure to a wide range of business activities; (b) his previous working experience and long association with this company; and (c) his participation in academic-related activities such as seminars, conferences, and symposiums.

It was indicated by Mr. Soetrisno in the interview that he regarded both the conceptual and human skills as "very important to my job", and he wanted to develop these skills in the future. He believed that he would have opportunities to develop them in the future as long as, he said, he would be in the same position and the company

would give a greater chance for the staff to participate in any form of training. The same kind of reasoning also applied in the case of his acquisition of Japanese specific managerial skills.

When the interviewee was asked by the researcher 'how many of the Japanese specific managerial skills have been acquired by you?'. He responded to this question by saying "there are certain elements of the system that I am very confident of being able to fully implement because I believe that I have acquired the skills. The TQC and JIT techniques, and other principles of Japanese management, especially those related to how to create an effective work mechanism, establish a disciplined business philosophy, and to utilise fully staff potential and to motivate them". But it was also indicated by Mr. Soetrisno that he had very limited knowledge and skills relating to the formulation of business strategic decisions and policy, because, he said, the Japanese executives had never involved the Indonesian managerial staff in, for example, devising the company's long-term or strategic planning, determining production levels and prices, or formulating marketing strategies.

The way in which the skills were acquired was due partly to the various factors mentioned above. Another part was due in some degree to his participation in the company's training program. Although the company has a written and formalised training program for technical employees but not for managerial staff, his participation in on-the-job and off-the-job training such as attending seminars and conferences as well as visiting Japan assisted him in acquiring such skills. However, he noted that his

visit to Japan might be considered as part of management training, but he thought that the Japan visit was only to broaden his view about the outside world, because during the visit "I gained no new managerial knowledge and skills that are relevant to do my work".

In view of the above realities, Mr. Soetrisno was then asked as 'whether he is happy to work within the environment of the Japanese system of management. He stated that he was happy with the system as "there is no other better alternative system available and acceptable to this company that can replace the Japanese system of management, and our system [that is, the Indonesian management system] has produced no better results than the ones produced by employing the existing system". He further argued that the Japanese system of management may not be the most perfect one, but "in the final analysis, the system alone will not guarantee that one can produce the best results if there are no effective and capable personnel involved in the management process".

**4.16 P.T. MEIJI INDONESIAN PHARMACEUTICAL INDUSTRIES,
INDONESIA, JOINT VENTURES OF MEIJI SEIKA KAISHA LTD.,
and NOMURA TRADING CO & LTD., JAPAN**

4.16.1 Introduction

After two visits to P.T. Meiji Indonesian Pharmaceutical Industries, an appointment with one of the company's senior Indonesian managers was made. This was with Dr. Budiana, a medical doctor, who is manager of the marketing division. He has been working with this company for approximately 14 years, and had more than 3 years working experience before joining this company.

An appointment with one of the Japanese executives was unsuccessful, because, as the researcher was advised, the Japanese executives were "out" and "unavailable for the interview".

4.16.2 Background

P.T. Meiji Indonesian Pharmaceutical Industries has a factory and plant area of 100,000 square meters located in Pasuruan, East Java, around 950 kms from Jakarta.

Meiji Industries is a subsidiary of two Japanese companies, Meiji Seika Kaisha Ltd. and Nomura Trading Co., Ltd., with two Indonesian partners, P.T. Aseam Indonesia and Mr. Tjipto Pusposuharto, and with one Malaysian company, Malayan Pharmaceutical Sdn., Bhd. The company was established in May 1974 with an authorised capital of US\$ 2,760,000 of which 20% was owned by Aseam Indonesia, 10% controlled by Mr. Tjipto Pusposuharto, 19.4% owned by Nomura Trading, 35% owned by Meiji Seika Kaisha, and 15.6%

controlled by Malayan Pharmaceutical Factory Sdn. Bhd. The company commenced its manufacturing operations in September 1975 to produce 8 different products: injections (27,648,000 vials annually); capsules (80,000,000 capsules); tablets (34,560,000 tablets); ointment (270,000 tubes), solutions (86,000 litres); powder (21,000 kgs.); kanamycin bulk (4,000 kgb); and ampicilline sod. bulk (4,000 kgb) annually.

According to one Report (Jetro, 1991, p. 131) the company has 362 employees consisting of 14 Indonesian managers and one Japanese manager, one Japanese advisor, and 6 members of the Board of Management. The structure of the company's Board of Management consists of President Director Mr. Tamajiro Nakazona, Japanese, Vice President Director Mr. Takeshi Kashiwabara, Japanese, and two Directors: Drs. Artomo, M.B.A., Indonesian, and Mr. Noriyoshi Tamura, Japanese.

The structure and top executive personnel of the company reveals that Japanese companies and Japanese personnel are in full control of the company. This controlled was further reflected in the source of the company's technology, that is, from Japan.

The Japanese companies transfer their technology to Indonesia through the joint venture mechanism. The technology was actually transferred through the training of Indonesian staff, the employment of Japanese staff, and the transfer of documents in the form of plant layouts, process design, product specifications, patents and trademarks, and instruction manuals. Along with these forms of technology, the Japanese also transferred their technological expertise

to the locals as part of their commitment to developing their business interests in Indonesia.

It was suggested by Dr. Budiana that the scale of technology transferred to Indonesia was not of a large scale, being only of medium scale, and the level of sophistication was of conventional technology, that is, being fairly well established and wide spread in advanced countries. It was also suggested by Dr. Budiana that the technology transferred to Indonesia differed to that used in Japan. The difference was due partly to the Indonesian government's policy of encouraging the importation of labour-intensive technology and Japanese perception of the Indonesian government's weak regulatory requirements.

This was also very related to Japanese business policy and strategy, which, in part, and strategy is aimed at exploiting resources and market potential that is believed to be beneficial to their business operations. Such resources include Indonesian cheap labour costs and raw material prices, the availability of potential markets and effective consumers, and the likelihood of becoming very competitive and being able to monopolise markets. According to Dr. Budiana another important factor in the Japanese coming and transferring their technology to Indonesia was that "they are surely convinced that they can and will control the company's operations and that they have complete freedom to implement their business mission including practising their management system".

4.16.3 The Management system

Like most Japanese companies, the establishment of

this company in Indonesia was carried out through a joint venture mechanism. Its establishment has it made possible for the transfer to Indonesia of various sets of technology in the form of production techniques and management system as well as managerial skills. These technologies are required by the companies to enable them to effectively, productively and profitably develop their business operation.

A question that this research posed to Dr. Budiana was whether Japanese controlled companies, such as this one, transferred its technology and practiced system of management in its Indonesian operation, and if so, how much of the technological expertise or managerial skills and knowledge, required to utilise the technology and practise the system of management, had been transferred to Indonesian managerial staff or had been acquired by the Indonesian managerial staff, including Dr. Budiana, up to the present ?.

The answer provided by Dr. Budiana to the above question was quite straight forward. He stated that "the Japanese company did transfer its technology here in Indonesia and practise its system of management in this company. In fact, the system of management has become the main basis of this company's operation, although not all elements of the system are practiced". Dr. Budiana provided some possible reasons why the Japanese executives preferred to practise the system including (a) it was in the interest of the Japanese, as they were the major share holder of the company, to see this company grow quickly and profitably; and (b) the absence of other proven alternative systems of

management which could produce better results. On this point he argued that one possible alternative was the Indonesian system of management. However, he said, "the Indonesian system of management might be good and easy to implement, but might not be able to produce better results than the Japanese system of management".

The components of the Japanese system of management that have been practised, to some degree, in this company are: a life-time employment system; special consideration of employees' personal welfare; seniority-based promotion and pay; decision-making by consensus; democratic and participative management; a system of a group rather than individual responsibility; an emphasis on group harmony; on-the-job and off-the-job training, and job rotation; industrial relations which emphasize labour-management cooperation; as well as production management techniques such as just-in-time (JIT) or *kanban* and total quality control (TQC). There is no indication as to whether the Japanese executive will make any attempt to fully implement these components, because, as was pointed out by Drs. Budiana, there have been some problems with the implementation of the system, especially with respect to JIT, industrial relations, and the development of a democratic and participative management system. Differences in culture, traditions, abilities, and work habits of the employees between the two countries provide some reasons for the problem of attempting to implement the system fully.

As is suggested by Dr. Budiana's experience with this company, there are some difficulties in implementing JIT

techniques. He said that this was because

"we have designed and programmed the production level and inputs required for production, but we great difficulty in getting supplies of raw material, equipment, and packaging materials from outside. This is due to the unreliability of the local transportation system and the partners or sub-contractors supplying in time the inputs or materials needed by this company".

Problems also occur with regard to industrial relations issues in the management system. Indonesia has a rather unique tradition, culture, and political system which is different from that of the Japanese. Therefore, Dr. Budiana stated that "the Japanese system of industrial relations should be modified, and the Indonesian way of managing employee-management relations is best used rather than the Japanese way". The reason for this, according to Dr. Budiana, is that the practice of the Japanese system of industrial relations is strongly tied to the components of the decision-making process and democratic and participative management system. In Japan, and in most Japanese fully controlled firms, everyone is involved in every step of decision making process as everyone is invited to participate in the formulation of the company's policy and strategy. But here in Indonesia "the Indonesian staff are only involved in the implementation process and practical application of the policy and strategy. Local managerial staff are excluded from the decision making process of key issues or strategic decisions of the company, because the company's Japanese executives do not want to expose all the secrets of the company". This, according to Dr. Budiana, is understandable, because those secrets may be the key to Japanese success in operating the

company in Indonesia. Thus, "the Japanese management system of democratic and participative system has not been implemented here in this company".

The implementation of the management system in this company does however provide local managerial staff with a great deal of understanding of and exposure to the Japanese system of management. Some important aspects of the system which impressed Dr. Budiana is the way the Japanese executives develop employees' potential to strengthen the company and the way they direct local employees' attention and interest to fit them into the management system. The result of these effort, as stated by Dr. Budiana, is "a high sense of belonging and loyalty by the employees' to the company".

It is, however, realised by Dr. Budiana that there are some employees who are not happy with the way in which they have been treated or used. However, Dr. Budiana said, "the company staff turnover is very low and the company continues to grow". The growth of the company, as argued by Dr. Budiana, has been the result of "optimum utilisation of the mixt and interlocking of three important components: technology, human resource, and market potential. These components have been effectively and productively utilised by the system of management as practiced in this company".

In view of the above, local managerial staff working in this company have a great deal of understanding and skills as to how the the company is managed and how the system is implemented. However, the degree of understanding and amount of skills acquired vary among staff, because, as pointed by Dr. Budiana, this will, to some extent, be

determined by various factors such as their level of position and responsibility, previous exposure, educational and employment background, participation in training programs, personal interest and willingness to learn and observe, involvement in the decision making process, as well as degree of association and interaction with the top executive circle.

4.16.4 Managerial skills acquired

When Dr. Budiana was asked by the researcher how many of the specific Japanese managerial skills have been acquired by him, he replied it by stating "very many, but the skills are only related to certain aspects of the system, particularly those relating to components of the management system as practised here". Among the components of the management system employed in this company, he nominated skills or knowledge related to the application of the JIT and TQC techniques and that most of the company's working practices drawn from the Japanese system had been acquired by him.

However, it should be noted that Dr. Budiana's acquisition of such skills should be seen by taking into account of (1) his lack of previous knowledge and understanding of the concepts and implementation of the system, and (2) the managerial position which he has held for quite a long time. In this respect, it is fair to suggest that Dr. Budiana has acquired very many Japanese specific managerial skills during his association with this company. However, Dr. Budiana warned that "the skills were very much related to the technical and human aspects of the

company's management, and not to conceptual matter. The reason for this was because of my very limited exposure to every important strategic decision making process".

It was recognised by Dr. Budiana that given his current position, responsibility, and limited involvement within the company's top management circle, conceptual skills may not be so important for him compared to the need for technical and human skills. This was because, he said, "the most important part of my present responsibility is to implement the marketing concept and policy, as decided by top management, and this responsibility forces me to acquire as many as possible of both technical and human skills. However, I believe I will have an opportunity to develop these skills in the future".

It should be understood that Dr. Budiana's acquisition of technical, human, and conceptual skills refers to general aspects of the management of the company, and does not refer to his own professional expertise, in this case, marketing. In view of this, he was then asked by this researcher 'how many professional skills have been acquired by you?'. He responded by stating "very many, but only limited to marketing". This limitation was partly due to his limited exposure to other relevant professions such as accounting, personnel matters, production management. It was also due to a lack of a management training program relevant to such specific professions so as to acquire such skills. He elaborated on this by stating that one important aspect of marketing skills that interested him was the concept of 'market orientation'. This concept is different from marketing strategy as generally understood. The

concept, he said, "is very important because it places greater emphasis on the needs of consumers, competitors' position, and the working mechanism of internal organisation".

Nevertheless, he indicated that his acquisition of marketing-related professional skills was attributable to his long association with the company, his long employment as marketing manager of the company, and his participation in the company's training programs.

It was mentioned by Dr. Budiana that the company had a well-formulated and written technical training program for technical workers, and although management training for managerial staff had not been devised as clearly as for technical workers, by and large, the company did have a management training program.

During his association with the company, Dr. Budiana participated in both on-the-job and off-the-job training programs provided by the company. Off-the-job training included attending short-course programs, seminars, and conferences both in Indonesia and in Japan. He participated in some ten training programs in Japan. However, he said, the training in Japan did not provide him with new skills and knowledge relevant to his work. The result of the training in Japan was "only to widen my view and vision about the outside world and the existence of the parent company in Japan". The instructors in the training program were all Japanese from the parent company or personnel from the same group of companies. No significant difficulties were experienced in attending the training programs in Japan. According to Dr. Budiana the company is now scaling

down its off-the-job training programs, especially training programs in Japan, due to increases in costs.

When asked what were the reasons for the company to provide training for Indonesian staff, Dr. Budiana stated that "the reasons were to equip the staff to be capable of utilising the technology available and to develop the human potential of the staff that would be very beneficial to the company's efforts to realise its strategic mission or goal". Meanwhile, it was made clear by Dr. Budiana, that "Indonesian government regulations and policies do not seem directly to compel or force the company to provide training for locals, but rather it has been motivated by the need of the company to have skilled and qualified workers". It was, however, suggested by Dr. Budiana that "the Indonesian government does need to regulate in some form to force or stimulate the technology transferors to transfer their skills, knowledge and expertise to the locals, especially managerial skills and expertise".

Although Dr. Budiana believed that the present company's training programs were quite good, "it is necessary for the training programs to be intensified and developed further as it will expedite the skill transfer process". The training modes that were suggested by Dr. Budiana to be more effective were on-the-job and off-the-job training programs, hands-on experience (learning from experience), and a counterpart system, that is, working at well-established and more advanced companies both locally and overseas, as well as having more active and direct involvement of the local managerial staff in the strategic decision making process.

5. A CROSS-CASE ANALYSIS AND RESULTS OF THE STUDY

This chapter presents an analysis cross the case studies and records the results of the study, especially those which relate to technology and skill transfer issues.

It should be noted that while skill transfer is the main focus of this study, there are other aspects which are associated with it and which deserve extensive analysis in this study. These aspects include the types of skill transferred, various moderating factors that play a role in transferring and forming the skills, and mechanisms used to form the skill transferred. This study is concerned with managerial skills. The study divides managerial skills into three types, namely, Japanese specific managerial skills, professional or functional managerial skills, and general managerial skills consisting of technical skills, human skills, and conceptual skills.

It has been suggested earlier that, in international technology transfer, skill acquisition represents one of the many spill-over effects or results of international technology transfer. It was also argued earlier that the success of technology transfer, as seen from the technology recipient's point of view, can be measured in terms of the amount or degree of skills acquired by the local population or employees working in, or associating with, the company involved in the transfer. Therefore, before analysing skill transfer issues, it is necessary to discuss various issues which relate to technology transfer.

5.1 Characteristics of Japanese Technology Transfer

The characteristics of the Japanese technology transfer

process and of the nature of the technology transferred to Indonesia make the analysis of the effects of such Japanese technology transfer on Indonesian employess' managerial skill formation a very complex exercise, and this mirrors the situation of Japanese technology transfer to other developing countries.

The characteristics of Japanese technology transfer were discussed at length in Chapter 3 (see Appendix 1 for additional information). Some important characteristics are that such technology :

- (1) is largely embodied in direct foreign investment (DFI),
- (2) is labour intensive,
- (3) is not so much related to specific production techniques but rather to know-how or general industrial experience involving mature techniques and that this requires the actual participation of the technology transferee at the production and management levels,
- (4) requires some modification for its use in the host country,
- (5) requires human contact in its application, because the technology is wedded closely to particular Japanese managerial skills and know-how that can be transferred through close contact,
- (6) is strongly influenced by macroeconomic factors in its own economy, rather than the economy of the recipient technology.
- (7) has a high percentage of the Japanese foreign investment and/or technology in the manufacturing sector such as in textiles, and electrical machinery which are labour intensive,

(8) is used in smaller and medium sized firms.

Apart from the above eight characteristics, this study characterised the Japanese technology transferred to Indonesia in terms of its :

- (1) scale, referring to the volume, quantity, or the amount of the technology transferred, that is, whether it is small, medium, or large scale,
- (2) level of technological sophistication. In this study the technology is also classified into three groups :
 - (a) sophisticated and up to date technology,
 - (b) conventional or fairly well established technology, wide spread in developed nations,
 - (c) low and unsophisticated technology.

An in-depth analysis of the case studies suggests that the characteristics of the technology transferred by the Japanese to Indonesia match most of the characteristics mentioned above. The characteristics of the transferred technology can be categorised into three main groups.

Primary characteristics

When first transferred to Indonesia, the technologies were very sophisticated and up to date compared to the existing technology in the same industry in Indonesia (see Appendix 3). This is especially true in the case of large companies such as chemical, automobile / transport, cement, aluminum, and some textile industries. The size of the companies referred to is in terms of the number of employees and the amount of authorised capital invested in Indonesia. The same technology was only conventional, that is, fairly well-established and widespread in advanced

nations when the technology was compared to the technology used in developed countries (see Appendix 2).

However, although the technologies were sophisticated and up to date, they were often only transferred in medium scale. The nature of the transferred technologies was different from that used in the parent company in Japan. Most interviewees believed that this difference was due to the perception of the Japanese technology transferors which regarded Indonesia as having greater economic and business potential than Japan. This potential has played a role in motivating the Japanese companies to invest in, and/or transfer technology to, Indonesia. The potentials of Indonesia are believed to include:

- (1) Low labour costs, where in this case, Japanese labour costs are higher than in Indonesia. At the same time, Indonesia has less skilled labour and, therefore, lower labour costs than in Japan. However, capital is easier to find in Japan than Indonesia.
- (2) Favourable foreign investment and technology transfer regulations. This aspect of regulations is best explained by the case study of Polekao Indonesia Chemicals which suggests that Japan has much stricter environmental control regulations than Indonesia, and the Japanese community is much more critical of environmental issues than are their Indonesian counterparts, mainly because the Japanese, in the main, are better educated and more politically free to express their concerns or to protest than the Indonesian public with regard to environmental concerns, and as a result, environmental control of

industry in Indonesia is of a much lower standard than is found in Japan. However, there are many comments made by Indonesian managers in the case studies concerning regulations. An interviewee from P.T. Bridgestone Tire Indonesia for example suggested that Indonesian government regulations were not significant in motivating the Japanese to transfer their technologies to Indonesia, "because the regulations are not very clear or precise and no sanctions are given to those who do not adhere to the regulations". The same comments were also expressed by an interviewee in P.T. Indonesia Synthetics Textile Mills.

- (3) A more stable socio-economic and political environment, and some (such as P.T. Unilon Textile Industries and P.T. Indonesia Synthetic Textile Mills) suggested that Indonesia has more liberal economic policies providing a greater stimulant for the Japanese to invest, and to transfer, their technology to Indonesia.
- (4) A large market potential capable of accepting large outputs production. This potentiality factor has, in many way, become the reason for the Japanese companies to develop their marketing orientation toward Indonesia domestic or local markets.
- (5) A capacity and potential to establish certain types of industry to produce certain types of products/services.
- (6) Abundant resources and raw materials for production.

It should be pointed out here that the above reasons for Japanese companies to transfer their technologies to Indonesia were given by the Indonesian managerial staff and executive officers working in the companies. As this study

was unsuccessful in involving the Japanese managerial staff or executive officers in interviews, it is nor possible to know precisely the real reasons for the Japanese companies having transferred their technology to Indonesia. It can be suggested, however, that there were other motives such as (1) limited availability of industrial space for expansion, (2) increased regulatory control of pollution in Japan, (3) the internationalisation of Japanese companies, and (4) invitations from the Indonesian partners to the Japanese companies to invest in Indonesia, either Indonesian government or private sectors, such as P.T. Bridgestone Tire Indonesia, P.T. Unilon Textile Industries, P.T. Semen Nusantara, and Indonesia Asahan Aluminium.

Whatever the reasons behind the transfer, it is quite clear that Japanese perception of Indonesia as cited above is, in fact, **believable** considering (1) the consistent opinions expressed by the respondents in the case study, (2) the consistency of the this study's findings with the existing literature (see chapter 3), and (3) the undeniably successful business operation of the Japanese companies, as suggested by these case studies, in Indonesia.

The above reasons for the transfer, may also partly explain why the technologies transferred to, and used in, Indonesia were different from those in Japan. Another part of the explanation is the Japanese companies' strong competitive advantage and control over their subsidiaries as suggested by a respondent from P.T. Cahaya Inaba Electric. He argued that the Japanese "controlling power of the company and technological superiority" will maintain the Japanese competitive edge. He further argued that

technological superiority "will continue their control over the company and the local markets, and in the short and medium term, the Indonesian partners will still depend upon the Japanese technological superiority to keep their domestic competitive advantage".

Secondary characteristics

The secondary characteristics of Japanese technology transfer to Indonesia are (a) typified by medium scale (see Appendix 3), (b) classified as conventional or very well established and widespread in advanced countries (see Appendix 2), (c) 'old' or 'second best' technology compared to technology used in the parent company in Japan, although they were sophisticated compared to the existing technologies used in Indonesia, and (d) the technology has been transferred largely to the Indonesian subsidiary which is much smaller than the parent company in Japan. Although there were some parts of the transferred technology that were very advanced indeed when first brought into Indonesia, this was no longer the case some years after the company was established in Indonesia. As stated by a manager from P.T. Asahan Ailimnium "currently the company's technology is not advanced anymore, because (a) other companies have better and more sophisticated technology, and (b) the Japanese partner transferred second rate technology, or at least very much different from technology being used in Japan". This suggests that many Japanese companies have not updated their technologies. This characteristic can be seen in such case studies as at P.T. Polekao Indonesia Chemicals, P.T. Easterntex, and P.T. Cahaya Inaba Electric. On this point, the respondent from

Cahaya Inaba Electric commented that "in fact some of the technology is between five to ten years behind, and only a very small portion of the technology is very advanced".

The question of transferring 'old or second best' technology as referred to in those companies clearly suggests that the Japanese companies do transfer different technology to their subsidiaries in Indonesia from that used in the parent company in Japan. In the final analysis this fact really illustrates two things,

- (1) the way that the the Japanese technology transferors regard the potential of their Indonesian counterparts,
- (2) the weakness of Indonesian partners in the field of (a) technological expertise, (b) bargaining position, (c) competitive advantage, and (d) control over the joint venture or company.

It should be pointed out here that Japanese control over the running of the company has been prevalent in all companies under study. This control can be seen in terms of the companies' ownership, leadership, and the technological needs or sources of the company, where Japan has been the only or the main source of each company's technology. In whatever terms, the Japanese are always in a very strong position to determine the direction and survival of the company (see Appendix 1 at 'controlling partner' column).

As has been widely acknowledged, Japan has made a great deal of progress in the field of technology. As a result, technology has become one of the most important factors in Japan's competitive advantage and, by and large, it has been responsible for developing Japan's

international standing as one of the world's most developed industrialised nations. As one of the most important factors in competitive advantage, Japanese companies have been capable of utilising this as an instrument to control their subsidiaries in many parts of the world, including Indonesia.

Indonesia's weakness in both financial and technological capability has led to a situation where Indonesian companies are always in a weak bargaining position and therefore have difficulty in achieving a worthwhile bargaining position with Japanese companies. This weakness has become more obvious due to the country's limited provision of infrastructure, skilled labour, and industrial and environmental-related regulations. This explains why Indonesian companies have not acquired any significant power or ability to stop some Japanese companies transferring their old or second best technology to Indonesia. This weak bargaining position has been made worse by the absence of governmental stringent technological and environmental regulations requiring the technology transferred to be the best available, safe, and appropriate for both the companies in question and also for Indonesian conditions.

Tertiary characteristics

An in depth analysis of the case studies indicates that Japanese technology transfer to Indonesia is also characterised by:

- (1) A great deal of modification in Indonesia. This modification was necessary because of differences in the socio-cultural, political and economic systems and

values between Indonesia and Japan, and Indonesia's presumed lower technological expertise than Japan.

- (2) The involvement or participation of the technology transferee at the management and production levels.
- (3) Human contact between those involved in the technology process. The human contact is very important in Japanese technology transfer, because Japanese technology transfer, as seen in the case study, is very closely wedded to particular Japanese managerial skills and know-how that can be transferred through close contact. The managerial skills aspect is particularly important in the case of Japanese technology transfer. This argument was put forward by Komoda (1986, p.412) which was confirmed in this study in the case studies.

These tertiary characteristics of Japanese technology transfer are found in all type of Japanese subsidiaries examined in this study in which the transferred technology was significantly modified to be made suitable to the Indonesian environment.

As indicated in all case studies except one (Mitsui & Co. Ltd.), the Japanese technology in Indonesia was transferred through the joint venture mechanism. None of the interviewees could provide definite reasons why the joint venture mechanism was selected for the technology transfer process. Most of the interviewees can only speculate on the reasons for this. The interviewee from P.T. Easterntex commented that the reasons were "(a) to provide a possibility, in the long run, the local partner to be able to control or own the company by changing equity and leadership of the company, and (b) to find the best

possible way of transferring foreign technology into the country". However, the interviewee was quite pessimistic concerning the joint venture mechanism, because, he said, "up to now there is no indication that the Indonesian partner will have the opportunity to take over or control the subsidiary, because of the subsidiary has been made in such a way to be continuously dependent upon the Japanese technology".

Meanwhile, the interviewee from P.T. Indonesia Asahan Aluminium gave as the reason that "the Indonesian government's shortage of financial and technological resources and capabilities has led the government to resort to joint ventures with overseas partners". The interviewee could not believe that the joint venture was the best mechanism selected for the technology transfer, because he said "the transfer of technology and skills to local employees is not effective due to the minimal acquisition of technological expertise and skills by the locals. Nevertheless, the locals have gained something in terms of employment and exposure to the Japanese system of business management".

The effectiveness of technology transfer, in many respects, will depend on the nature of how the technology is actually transferred. The case studies found that the Japanese companies actually transferred technology through three main mechanisms, namely:

- (1) the employment of Japanese experts or staff in the company,
- (2) the provision of training to local employees,
- (3) the transfer of documents in the form of plant layouts,

process designs, product specifications, patents or trademarks, blueprints, computer software, and instruction manuals.

However, not all companies in the case studies utilised all three mechanisms of transferring technology to Indonesia. For example, P.T. Nippon Steel Construction Indonesia and Mitsui & Co., Ltd. do not use training as their mechanism of transferring their technology. The reason provided for this was that "the company does not regard it as necessary and important". Those companies which provide training as a mechanism of technology transfer often only provide the training program for Indonesian technical staff and not the managerial staff (see Chapter 5.2 and Table 11). Among the sixteen companies surveyed only three companies have a formalised management training for Indonesian managerial staff, they are (1) P.T. Polekao Indonesia Chemicals, (2) P.T. Krama Yudha Tiga Berlian Motors, and (3) P.T. Bridgestone Tire Indonesia. The absence of a training program certainly reduces greatly deal the possibility for the local employees to gain technological expertise from the transfer process. This argument will further be developed in the coming sections.

All companies have utilised the employment of Japanese staff as one of the mechanisms of technology transfer. Many interviewees believe that this mechanism is quite useful and productive in expediting the technology transfer process, especially in the early stage of the company's operations. As the company develops and progresses, a great many of Indonesian managerial staff

question the style of their management which is believed to have made it difficult for the local staff to develop their human potential. The same difficulty also applied in the case of the transfer of documents to Indonesia.

As was pointed out by most interviewees, documents could be one of the most effective mechanisms of technology transfer if the documents can be read and understood by the local staff. However, the experience of Indonesian staff working in the Japanese subsidiaries in this study suggest the opposite, namely that most of the documents sent to Indonesia were in Japanese which is rarely understood by the local employees. Furthermore, many important documents were not given or shown by the Japanese to the locals. This, according to the interviewee from P.T. Indonesia Synthetic Textile Mills, "make the transfer process less effective and therefore contribute little to the development of technological expertise and skills among local Indonesian employees". A parallel point of view was also expressed by the interviewee from P.T. Nippon Steel Construction Indonesia who said that "the technology transfer is less effective and does not provide a significant impact in improving the locals' managerial and technological expertise".

The less effective transfer of technology can be seen in the case of a partial application of Japanese system of management practices such as lack of management training programs for local employees, and a very limited involvement of the local managerial staff in the company's decision-making process especially those relating to the company's strategic policies.

5.2. The Application of the Japanese System of Management

The components of the Japanese system of management were listed and discussed in Chapter 3.10 to 3.12. The components of the system basically deal with training, job rotation, life employment, welfare of employee, seniority based pay and the promotion concept, decision by consensus, participative management, groupism not individualism, group harmony, JIT and TQC techniques, marketing techniques, long-term planning techniques and industrial relations. The application of these component are shown in TABLE 11.

The degree of application the various components can be divided into four categories, namely, fully applied, mostly applied, partly applied, and not applied at all. It should be pointed out here that the degree of application of those components is as perceived by the Indonesian managerial staff working in Japanese subsidiaries operating in Indonesia, as drawn from this research's case studies.

On the basis of previous studies, as discussed in Chapter 3, there are at least 15 important components of the Japanese system of management. These 15 important components were then investigated and analysed so as to find whether everyone of the components were applied in every Japanese subsidiary investigated by this study.

This study found that not all of those fifteen components of the Japanese system of management were applied in each of the Japanese companies studied. As indicated in Table 11, only three companies (case study nos.1, 2, and 5) have formally formulated and written management training programs and policies. Many companies have only a "just understood" management training program.

TABLE 11

**APPLICATION OF VARIOUS COMPONENTS OF JAPANESE
SYSTEM OF MANAGEMENT IN INDONESIA AS PERCEIVED
BY INDONESIAN MANAGERIAL STAFF**

COMPONENTS	Degree of Application			
	: Fully	: Mostly	: Partly	: Not at all
a) Management Training	: -	: 1,2,5	: -	: 3,4,6,7,8,9,10,11 : 12,13,14,15,16
- On-the-job training	: -	: 1,2,5,8	: 3,4,11,15,16	: 9,10,12,14
- Off-the-job training	: -	: 1,2,5,8	: 3,4,15,16	: 6,9,11,12,14
b) Job rotation	: -	: 5	: 16	: 1,2,3,4,6,7,8,9,10 : 10,11,12,13,14,15,16
c) Special consideration of employees' personal welfare	: 5,	: 1,2,8	: 3,4,7,16	: 6,9,10,12,13,14,15
d) A life-time employment system	: 4,5,14	: 1,2,6,8	: 3,11,13,15,16	: 7,9,10,12
e) Seniority-based pay	: 5	: 1,2,15,8	: 3,4,9,11,12,13,16	: 6,7,10
f) Seniority-based promotion	: 5	: 1,2,15,8	: 3,4,9,11,12,13,16	: 6,7,10
g) Decision-making by consensus	: 4	: 1,2,5,8	: 3,11,12,16	: 6,7,9,10,13,14,15
h) Democratic and participative management system	: 11	: 1,2,4	: 3,5,8,12,16	: 6,7,9,10,13,14,15
i) A group, rather than individual, responsibility system	: 11	: 1,2,3,5,6,8,15	: 7,10,12,13,14,16	: 4,9
j) Emphasis on group harmony	: 11	: 1,2,3,4,5,6,8,14	: 7,10,12,13,16	: 9
k) Total quality control (TQC) techniques	: 4,5,7,10,11,13,14,15	: 1,2,8,9,12	: 3,12,16	: 6
l) Just-in-time (JIT) techniques	: 4,5,7,10,11,13,14,15	: 1,2,8,9,12	: 3,12,13,16	: 6
m) Marketing techniques	: -	: -	: 11,16	: 1,2,3,4,5,6,7,8,9 : 9,10,12,13,15
n) Long-term plan (LTP) techniques	: 14	: -	: 1,2,3,4,5,11	: 6,7,8,9,10,12,13,15
o) Industrial relations system	: -	: 8	: 11,16	: 1,2,3,4,5,6,7,9,10 : 12,13,15

Notes : There are 16 case-studies in this research, and the numbers referred above are those shown in Chapter 4. This table also indicates various components of the Japanese system of management as practiced by them, and perceived by Indonesian managerial staff working for them.

of those that have a formulated and written management training program, the program is not always fully implemented in the company and has only been practiced as **"mostly"**, which suggests that the management program is not available for every Indonesian managerial staff or is not undertaken on a continuing basis, that is, it is only incidental, or is only provided on the basis of **"when the need arises"**. It should be stated here that although management training programs are in general not provided, most companies did provide technical training program for their technical workers (see the last column in Appendix 1)

It was suggested by interviewees that the reasons for a company not to provide management training are varied, and include such reasons as "the company does not regard it as necessary and important", or "lack of training facilities", or "cost reduction policy adopted by the company", or "the company executives may have thought that the managerial staff are still quite capable of accomplishing their duties with their existing skills and expertise", or as argued by one interviewee from P.T. Indonesia Asahan Aluminium, that it was because "the Japanese executives may be worried that the Indonesian managerial staff will be too clever or will know too much, not only about managing the company but about other things that are regarded as secret or strategic". An interviewee from P.T. Nippon Steel Construction Indonesia provided possible reasons as to why the Japanese did not provide management training to the local managers as follows "(a) to keep their Indonesian partner technologically dependent on the Japanese, and (b) to maintain their competitive edge

in the market". However, the interviewee pointed out that these reasons were only guesses and only the Japanese would know the exact reason.

Judging from the above reasons, it is fair to assume that the absence of management training has appeared to be **by design** from the company concerned. This, therefore, suggests that the Indonesian government policy and regulations which require foreign companies or technology transferors to provide training to the locals do not have any significant impact in compelling the foreign companies or technology transferors, to provide management training to Indonesian local managerial staff. This fact has been clearly stated by various interviewees of this study. For example an interviewee from P.T. Mesin Isuzu Indonesia stated that "the Japanese executives know of the existence of the government regulations that require the technology transferor to provide skills training to local employees. But the regulations appear to not affect or compel the company to provide the training". An interviewee from Mitsui & Co., Ltd., stated that "Indonesian government regulatory action does not have any impact on the company in transferring their skills or in forcing the company to provide management training to locals". The same kind of statement was also made by interviewees from P.T. Easterntex who suggested that Indonesian government regulatory policies did not have any impact on the company in terms of compelling it to provide management training to Indonesian staff. An interviewee from P.T. Century Textile Industries stated that "it seems that the Japanese do not really care at all about the existence of Indonesian

government regulations let alone implementing them".

However, in those companies which provided management training, the interviewees believe that the companies recognise the existence of such Indonesian government regulations and are of the opinion that the regulations do play a mixed role in motivating or compelling the foreign technology transferor to provide management training to locals. As stated by an interviewee from P.T. Meiji Indonesia Pharmaceutical Industries: "Indonesian government regulations and policies do not seem directly to compel or force the company to provide training for locals, but rather it has been motivated by the needs of the company to have skilled and qualified workers". There is only one company, that is, P.T. Krama Yudha Tiga Berlian Motors, which believes that the government regulations do strongly motivate the company to provide management training. However, one company, P.T. Polekao Indonesia Chemicals, which provides management training, did so, not because it was compelled by the regulations, but rather because of the company's own needs.

This study found that most of the companies studied did not have a formulated management training for their local managers and almost none of the companies practised job rotation. All interviewees wanted the companies to provide management training, and most believed that the most effective modes of management training were on-the-job and off-the-job training, the counterpart system (that is working at a different company), as well as training at an educational institution such as university or by attending short programs, seminars or conferences.

As was the case with training, the other components of the Japanese system of management are also not fully applied. As is evident from Table 11, only three companies fully practiced the "life-time employment" system, and a half of the companies implemented TQC and JIT techniques. The other components of the system are either not applied at all or only partly practiced. The application of the system varies quite widely between both small and large companies and over all types of industry. This situation suggests that there has been some modification in the application of the training components as part of technology and skills transfer to Indonesia. This modification has been necessary because, as was put by an interviewee from P.T. Krama Yudha Tiga Berlian Motors, (1) there is a different cultural and political environment, (2) there are low standards in the education system, (3) there is a lack of experience and exposure of local managers to other systems of management, values and political affairs, and (4) there is a lack of forward planning perception among Indonesian staff compared to their Japanese counterparts. One interviewee from P.T. Unilon Textile Industries argued that the training methods adopted were modified because they were either (1) not suitable to the Indonesian environment, or (2) some aspect of the Indonesian approach to management was far more appropriate, or (3) this might have been intentionally planned by the Japanese executives. However, no one knew the real reason for not fully applying the Japanese system in running the companies.

Although most components of the system are not fully

applied, it is clear that the Japanese system of management has been to a large extent adopted by the companies under study. The reasons for this, according to various interviewees, are that not only are the Japanese in full control of the companies, but, as was summarised by an interviewee from P.T. Semen Nusantara, the Japanese system of management,

- (1) has proved that the company can be run effectively to achieve the company's strategic mission,
- (2) has successfully transformed Indonesian working behaviour from that of a lack of discipline to one of active, very disciplined and result-oriented workers,
- (3) has provided greater freedom in the work place where the staff are trusted to do their own job in their own way,
- (4) has, in many respects, provided greater working flexibility and close interaction among the staff, and each staff can expect the support or help from others,
- (5) has succeeded in motivating the staff to work harder and get the staff involved in their work, and
- (6) as was noted by an interviewee from P.T. Indonesia Synthetic Textile Mills, that the system provided mechanisms for promoting a relaxed atmosphere of mutual respect among employees.

This modified application of the Japanese system of management illustrates that some forms of Indonesian management practices, such as the labour or industrial relations system, marketing techniques and other administrative - related practices, are also implemented in these companies, suggesting that there is in fact a mixed

system of management being applied in these companies. An interviewee from P.T. Mesin Isuzu Indonesia stated that this mixed system of management "is not in any way to suggest that the Japanese system of management is not relevant or inapplicable in the Indonesian environment, but what it really suggests is that the Japanese system of management needs to be modified to be implemented effectively in a company where the majority of employees are Indonesian".

Meanwhile, it was noted in the case studies that the success of the Japanese system of management was also as a result of the Japanese leadership style. However, an interviewee from P.T. Cahaya Inaba Electric argued that there was nothing "that special in comparison with the leadership provided by Indonesian executives. What is special about Japanese leadership is that they show us that they work hard and for longer hours, they are very serious about doing their job and that they have also succeeded in implanting a sense of belonging or loyalty by employees towards the company, and in implanting a sense of shared responsibility and group achievement among employees in this company". The same support for the system was also expressed by an interviewee from P.T. Polekao Indonesia Chemicals when he was asked by this researcher "why can Indonesian employees work with a high degree of discipline in this company, and not in fully owned Indonesian companies?". His response was "in this company, executives talk less about work discipline but show us it in a practical way".

However, there are issues that have become sources of

resentment for Indonesian managerial staff as a result of the application of the Japanese system of management. This resentment can also be regarded as a criticism of the practices of the system in Indonesia. Some of the issues are concerned with the components of (1) the decision-making process, (2) seniority-based pay, (3) the seniority-based promotion system, (4) the life-long employment system, and (5) special consideration of an employee's personal welfare.

The experience of an interviewee from P.T. Nippon Steel Construction Indonesia might illustrate the practice of the decision-making system. He stated that "decision-making by consensus may only hold among, and for, the Japanese, not for us here in this company, because there has been no attempt by the Japanese to involve us, the Indonesian staff, in any strategic decision making process". As is common practice for most Japanese companies operating in Indonesia, the main elements of any decision to be made generally has already been determined either by the company's headquarters in Japan or by local Japanese executives of the company. This leaves the Indonesian managerial staff to be involved in information gathering as required by the company's decision-making process, or alternatively the local staff are invited to participate in formulating strategy or mechanisms to implement decision that have already been made. The reason why the Japanese let such a situation happen, according to an interviewee from P.T. Meiji Indonesia Pharmaceutical Industries, is "because the company's Japanese executives do not want to expose all the secrets of the company". He further

maintained, that this is understandable because the secrets may be the key to Japanese success in operating the company in Indonesia. Thus, "the Japanese democratic and participative management system has not been implemented here in this company".

As was pointed out by an interviewee from Mitsui & CO., Ltd., it appears that the Japanese do not apply the components of the seniority concept equally and consistently in the company. On the one hand, this component is regarded as a norm in the company and that therefore, it should be adhered to, especially for those Japanese employees working in the company. On the other hand, the Indonesian staff feel that the system is not really applied equally to them, because the way that the Indonesia staff's pay and promotion are determined in the company is not based on such a seniority system but rather on merit, that is, on the basis of their achievement and performance. While the Indonesian staff are exposed to all the system's work discipline, they are not given the entitlements normally stipulated in the application of the system, such as direct involvement in the decision making process, management training, nor employee social welfare. The interviewee stated that "if the seniority concept was really implemented here, after working for more than twenty years, I should have had an executive position and my pay would be much higher than now. But the fact is that I am still here and my pay is still low".

A parallel resentment was also echoed by an interviewee from P.T. Easterntex. He said that the elements of the system, as practiced in his company, were not really

appreciated by the Indonesian managerial staff, because "the application of some elements here do not really reflect the true concept of the system itself". For instance, a life-long employment system is one of the key elements of the system. The reality, he said, did not reflect the system and the Japanese executives were not worried if any of the Indonesian staff left the company. Also the concept of special consideration of employee's personal welfare is "only thirty percent of the system practiced" judging from the limited services, allowances and facilities provided to local staff. Furthermore, the level of pay for managerial positions in the company compared with other foreign companies operating in Indonesia, he argued, "is very low".

Despite the resentment and criticism of the application of the system, there are two components of the system that need to be analysed, namely, TQC and JIT or **kanban** techniques. As indicated in Table 11 these two techniques have been quite widely applied in Japanese subsidiaries in Indonesia, and only one company does not practice the techniques at all, that is, Mitsui Co & Ltd. However, this is understandable because the company is not involved in manufacturing activities, despite the company being fully Japanese owned and controlled.

The application of TQC and JIT techniques has been viewed by most of the Indonesian managerial staff interviewed as very important for their company. An interviewee from P.T. Indonesia Synthetic Textile Mills, for instance, stated that the techniques have become the main basis of managing the production of the company, and

the company has successfully produced goods with high quality and reduced production costs largely because of the application of those techniques. A similar point was also made by an interviewee from P.T. Semen Nusantara who stated that the techniques are "the keys to achieving the objective of reducing or lowering production costs and improving product quality. Only when this objective is achieved can the company sustain its competitive advantage and enlarge its market share".

Others, such as the interviewee from P.T. Polekao Indonesia Chemicals, also pointed out that "TQC is not a program but is a fundamental production function that has to be practiced in all areas of the company to produce top quality products with zero defects, with the objective of minimising costs, maximising profits, and increasing sales", and JIT "deals with how manufacturing subsystems are integrated into one overall manufacturing system to provide ways of producing quality products as efficiently as planned".

However, according to an interviewee from P.T. Indonesia Synthetic Textile Mills, the application of these techniques in most Japanese subsidiaries, as seen in this study, only provides local staff with a better understanding of the techniques, but does not necessarily give anyone the skills in the techniques. This is because, he says, "at the factory level the Indonesian workers only function as operators of the system and are not taught specifically about the techniques". At a management level, the managerial staff are not given opportunities to fully participate in the application process of the techniques,

because at that level, no job rotation is practiced by the company. Apart from this, and even more importantly, the company executives' attitude seems to be one of having adopted a policy of excluding Indonesian managerial staff from the decision making process where strategic matters are concerned. This exclusion, according to an interviewee from P.T. Indonesia Synthetic Textile Mills, provides no avenue for the Indonesian staff to acquire the knowledge and skills relating to the Japanese system of management, and this, he says, " is rather unique, because the normal practice of the Japanese system of management is to include everyone in the decision-making process".

5.3 Managerial Skill Formation

A significant improvement in the formation of local managerial skills is regarded as one of the most important objectives for the technology recipient to become involved in technology transfer activities. The amount of managerial skills acquired by local managerial staff can be seen as indicative of effectiveness of the technology transfer process.

The Indonesian managerial staff working in Japanese subsidiaries in Indonesia are expected to have acquired, to some degree, all of the three different elements of managerial skills, namely, the Japanese specific managerial skills, functional or professional skills, and general managerial skills.

As suggested by this study's case studies, the acquisition of managerial skills by Indonesian managerial staff vary from company to company and from industry to industry. The acquisition of the skills themselves has been

moderated by various variables or factors. In this study the variables that have been considered are: the size of the company's organisation as measured by the number of employees; a manager's educational background; the level of sophistication of the technology transferred; the type of industry in which the company is operating; and Indonesian government regulations. The role of each of these variables and a model developed as a result of this study are discussed in detail in the next section.

The elements and amount of managerial skills gained by the Indonesian local managerial staff are described as follows.

5.3.1 Japanese specific managerial skills

As was discussed in the first case study, P.T. Polekao Indonesia Chemicals, the skills required to implement the various components of the Japanese system of management depends, to some degree, on the type of the component, and the degree to which each component is implemented. The type and degree of each component of the system are indicated in Table 11.

In this study, each interviewee or respondent was basically asked the same main questions, such as 'how many of the Japanese specific managerial skills have you acquired since working with this company?'; 'how many of the Japanese system of management-related skills have you acquired since working with this company?', and 'what type of Japanese system of management-related skills have you acquired since working with this company?'. It should be stated here that each question is concerned with the experience of each interviewee working with their company.

However, the interviewee was also asked about their previous working experiences, educational background, and their exposure to practices of the Japanese system of management. As this study adopted open-ended types of questions, answers to each question asked by the interviewer were always followed up with other questions as to obtain detailed and reliable answers from the interviewees.

The amount of managerial skills acquired by the Indonesian managerial staff is shown in TABLE 12. It should be said here that the amount of managerial skills acquired by managerial staff was divided into four level, namely, 'very many', 'not very many', 'very few', and 'none at all'. However, often the interviewees used different kinds of expressions to indicate the amount of skills they acquired such as 'very little', 'alot', 'not a great deal', 'just a little bit', 'very little indeed' or 'very much'. This kind of responses also occurred in the case of functional and general managerial skills.

As shown in Table 12, only 25% claimed to have acquired "very many" Japanese specific managerial skills, 31% said "not very many", and 44% stated "very few". It is clear from the responses given by the Indonesian managerial staff that there are three points that can be made: (1) the Indonesian managers working in the Japanese subsidiaries do acquire some degree of Japanese specific managerial skills, (2) half of the managers who participated in the study stated that they only acquired "very few" Japanese specific managerial skills, and (3) only a small number of Indonesian mangers claimed to have gained Japanese specific

TABLE 12

**VARIOUS TYPES OF MANAGERIAL SKILLS ACQUIRED
BY INDONESIAN MANAGERIAL STAFF WORKING IN
JAPANESE SUBSIDIARIES OPERATING IN INDONESIA**

TYPE OF MANAGERIAL SKILLS	The amount of Skill Acquired			
	: Very many	: Not very many	: Very few	: None at all
a) Japanese Specific Managerial Skills	: 1,2,8,16 (25%)	: 4,5,6,14,15 (31%)	: 3,7,9,10,11,12,13: (44%)	-
b) Functional or Professional Managerial Skills	: 1,2,3,5,6,7,8,11,16: (56%)	4,10,12,13,15 (31%)	: 9,14 (12%)	-
c) General Managerial Skills:				
- Conceptual Skills	: 5,8,15 (19%)	: 2 (6%)	: 1,3,4,6,7,11,12 13,14,16 (63)	: 9,10 (12%)
- Human Skills	: 1,2,3,5,6,7,8,15,16: (56%)	4,10,11 (19%)	: 9,12,13,14 (25%)	-
- Technical Skills	: 1,2,4,7,11,16 (37%)	: 3,5,6,9,10,12,13 15 (50%)	: 8,14 (13%)	-

N o t e s :

There are 16 case studies in this research, and the numbers referred above are the numbers of case studies as shown in Chapter 4. This table also indicates various levels and types of managerial skills that have been perceived by, and acquired by, Indonesian managerial staff working in Japanese subsidiaries operating in Indonesia.

managerial skills.

Those who claimed they had acquired "very few" Japanese specific managerial skills provided many reasons for their failure to gain a greater amount of Japanese specific managerial skills. An interviewee from P.T. Easterntex explained that it was because the company provided no management training skills, either on-the-job or off-the-job, to managerial staff in order to develop their management skills, and there was a very limited application of the management system within the company. In other words, there is no mechanism or facility by which these skills can be formed. The key to the Japanese skill formation process was job rotation and this was not practised in the company. A manager from P.T. Tiga Manunggal Synthetic Industries stated it was "because the Indonesian managerial staff working here have never, or rarely ever, been given any training or lessons in theory regarding the various concepts of the Japanese system of management".

Other reasons for the "very few" acquisitions of managerial skills were similarly put forward by managers from P.T. Century Textile Industries and P.T. Unicor Prima Utama. The interviewee from P.T. Century Textile Industries argued that it was because "the Japanese place greater importance on the production line than on working procedures in the head office". This importance placed on the plant illustrates the Japanese preference given to technical and operative workers rather than to office workers including managerial staff. This preference, according to the plant manager of P.T. century, is

reflected in the provision of better allowances and facilities for plant workers, and in the training of such staff, whereas no management training is given to managerial staff.

The manager from P.T. Unicor argued that the techniques or skills are the property of the Japanese and they represent a competitive advantage for the Japanese. Therefore, it is understandable that the Japanese do not really want to transfer these skills to outsiders. Indeed, he stated that the Japanese are very keen to learn anything that is new, but they are very reluctant to give anything away that they themselves know, especially concerning business practices. He stated that "the Japanese communicate and relate very little with locals and they generally interact with their own people at their own club". In view of this, he concluded that "the Japanese learn much more about our Indonesian system and management skills, than Indonesian managers or directors learn about or acquire Japanese technical and conceptual skills of business operations in Indonesia".

Those who claimed that they had acquired "very many" Japanese specific managerial skills, argued, as was stated by an interviewee from P.T. Krama Yudha Tiga Berlian Motors, that it was due to the direct involvement by the manager in implementing the Japanese system of management. In implementing this system, the manager performs various administrative jobs while still formally filling a specific position within the company. This suggests that the manager experiences a wide range of administrative jobs. At the same time, each manager participates in various meeting at

an executive level. This working practice, as portrayed by the experience of a manager from P.T. Krama Yudha, in essence suggests that the job rotation concept has been practised in the company. although such a practice has never been formally formulated or written because of its limited application at the management level.

In the case of an interviewee from P.T. Polekao Indonesia Chemicals, his acquisition of Japanese specific managerial skills has been due to his previous working experience in a Japanese company, his participation Japanese management training, and the knowledge he has gained from his study at a university. Nevertheless, he stated that, by and large, it was due to his own initiative to understand, to observe and to study various aspects of the Japanese system of management, and some participation and involvement of managerial staff in the decision-making process, although this was limited to practical aspects of the company's business. The same reason was also provided by an interviewee from P.T. Unilon Textile Industries in which he stated that his acquisition of Japanese specific managerial skills was not through direct participation in formal training but generally through personnel observation, that is, by observing the work system as practiced in the company. He added that his direct participation or involvement in Unilon's management has certainly given him a greater degree of skills acquisition within the company.

However, it should be pointed out that many who believe that they have acquired Japanese specific managerial skills suggest that their managerial skills are

generally related to three aspects, namely, (1) the components of the system as practised in the company, (2) practical, not theoretical, aspects of the system, and (3) the general work philosophy, habits, and general picture or objectives of the system.

As pointed out by an interviewee from P.T. Tiga Manunggal Synthetic Industries, the application of the system "assists the Indonesian managerial staff, including myself, to acquire some degree of Japanese managerial skills. However, the skills are limited to practical matters and not to their fundamental theoretical background. Others, such as an interviewee from P.T. Unicor Prima Utama stated that the application of the system "has provided me with a great deal of knowledge and understanding as to what the Japanese system is all about". An interviewee from P.T. Mesin Isuzu Indonesia commented that "the Japanese system of management, as applied in this company, has given me a new understanding of marketing in particular, and of business operations generally. And I also learnt about the Japanese obsession to achieve long-term profit objectives and greater market shares".

5.3.2 Functional or professional managerial skills

The acquisition of Japanese specific managerial skills can be in concert with the acquisition of other managerial skills, such as functional or professional managerial skills.

By functional or professional managerial skills are meant the skills related to abilities or expertise required to accomplish or undertake a series of programs, activities or objectives relevant to the field for which the manager

is largely responsible, or the tasks which a manager has been assigned, or the power and authority which a manager is given by any higher authoritative body or institution. The field, tasks or power and authority can be in a particular discipline, such as marketing, personnel, accounting, computers, finance, transportation or inventory.

In this study, all interviewee were asked the same main or first question, that is, 'how many functional or professional managerial skills have you acquired since joining this company?'. Other questions were then asked of the interviewees to find out more information and to determine the accuracy of the information obtained from the interviewees or from other sources. As with the previous managerial skills, the responses or statements given by the interviewees varied.

The amount of functional or professional managerial skills claimed to have been acquired by the Indonesian managerial staff is set out in Table 12. Table 12 indicates that all Indonesian managers believe that they have acquired some amount of the skills since they joined the company. In fact, 56% stated that they had acquired "very many" functional managerial skills, 31% acquired "not very many" professional managerial skills, only 12% suggested that they only gained "very few" functional skills, and none of the interviewees stated that they did not acquire any functional managerial skills at all.

In view of the above, it is clear that Indonesian managers working in Japanese subsidiaries have opportunities to develop their functional managerial

expertise and to acquire functional managerial skills.

The acquisition of these skills, as argued by by an interviewee from P.T. Bridgestone Tire Indonesia, could not be separated from the acquisition of Japanese specific managerial skills. The application of the Japanese system of management has been largely responsible for building-up managerial functional skills. This is because, he says, "the Japanese system of management, as practiced in this company, provides (a) a delegation of authority to the manager, that is, the delegating of job responsibilities in the course of daily working operations and various committee activities, and (b) greater working freedom in the work place". A similar opinion and experience was also expressed by an interviewee from P.T. Mesin Isuzu Indonesia. He explained that his skill acquisition was assisted by his close attention and observation in the work place of how things were done and his earlier background. As he put it, "I can say that the degree of a manager's acquisition of these skills, to some extent, depends upon the manager's (1) previous working experience and exposure, (2) educational background, and (3) the system of management adopted by the company where the manager works. And had I not had such earlier experience and background, I do not believe that I could have acquired the relevant functional skills in this company". The opinion and experience of a manager from P.T. Mesin Isuzu Indonesia was supported by the opinion of an interviewee from P.T. Unilon Textile Industries

Those who acquired the functional or professional managerial skills stated that these skills were largely

related to the assigned or given portfolio only and very few were related to other portfolios or divisions, as the company did not provide training and job rotation for managerial staff. The acquisition of skills can be identified (1) due to their long experience of working with the company (see case studies nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 15), (2) due to their long association with their own portfolio such as marketing, personnel or accounting and not due to their participation in any training program (see case studies nos. 12, 13, 16), and (3) due to their participation in some kind of company training program (see case studies nos. 1 and 2).

Those who claimed that they only acquired limited or "very few" functional managerial skills, pointed to:

- (1) the company's lack of a training program designed to improve and develop the staff's human potential,
- (2) the absence of a job rotation program aimed at multi-skilling employees and that this, according to an interviewee from P.T. Meiji Indonesia Pharmaceutical Industries, led to limited exposure to other relevant professions such as accounting, personnel matters and production management. This, in turn, was due to the lack of a management training program relevant to such professions so as to acquire such as skills, and
- (3) the company's limited association and involvement with local managerial staff by the top executive circle, especially when dealing with the strategic decision making process.

The above points can be understood in view of the facts and conditions established earlier and the

observation made by an interviewee from P.T. Easterntex who stated that "we, the Indonesian staff working in this office, are treated like robots with no sense of friendship and human relations exercised by the Japanese executives and are merely told to work to achieve planned targets". This kind of treatment, according to him, succeeded in forcing the staff to work hard and achieve any planned targets, but this treatment did not provide happiness for the Indonesian staff. He further stated "I find a lot of pressure is put on us working here to do the job as fully and as quickly as possible with no compensation or appreciation which one might expect to receive from the executives, such as higher pay or promotion".

The observations made by the above interviewee illustrates another fact or dimension of the practice of Japanese businesses and of the side-effects of the Japanese system of management as applied in Indonesia. It shows on the one hand, the effort by local managerial staff to participate actively in joint venture companies under such a circumstances, and to acquire the skills and/or technology provided by the companies. On the other hand, it shows the way Japanese subsidiaries apply their system of management which is widely believed to be capable of producing output effectively, efficiently and competitively in the market.

5.3.3 General Managerial Skills

The involvement of Indonesian managerial staff in Japanese subsidiaries in Indonesia has automatically led them to be exposed to work within a Japanese company

environment with the Japanese system of management as the most important guiding force of the company's operation.

This exposure has certainly provided the Indonesian managerial staff with the experience of working under Japanese directives and the Japanese system of management. As stated by an interviewee from P.T. Easterntex, this exposure has, by and large, been responsible for expanding their knowledge and skills in solving problems related to their professional responsibilities. Also this experience by Indonesian staff has enabled them to compare the work practices of the Indonesian style of management with the Japanese system of management, and to give them a chance to undergo a kind of self-transformation from Indonesian work and business philosophy to Japanese work and philosophy. As was pointed out by an interviewee from P.T. Nippon Steel Construction Indonesia, his involvement in this Japanese-controlled company has given him "some knowledge of how the Japanese structure and manage their business organisation as well as the way they control and utilise the company's human resources for the company's benefit". However, he noted that his and other Indonesian staff involvement was restricted to implementing the company's aim of achieving its goals or of realising its strategic mission.

Another view was expressed by an interviewee from P.T. Tiga Manunggal Synthetic Industries concerning the Japanese philosophy of work. He suggested that there were some elements of the Japanese work philosophy, namely, high working discipline, principles of high work effectiveness, and productively, a small bureaucratic system, the freedom for each employee to set their own work targets or goals,

the active participation of employees in the decision making process to implement decision that has already made by the company executives* , the stress on group teamwork and responsibility, and the relative close interaction between the staff and the executives.

The experience of and view expressed by, the interviewee (manager) in P.T. Tiga Manunggal Synthetic Industries and others were shared by an interviewee from P.T. Unilon Textile Industries. However, the interviewee from P.T. Unilon elaborated on it by saying that the system provided room for managerial staff to develop themselves in the work place in which every member of staff was given the opportunity to find their own way to do their job. This meant, he said, it very much depended upon the staff themselves to initiate any improvement in their skills. Therefore, he said, the acquisition of knowledge or skills related to the system was not through direct participation in formal training but generally through personal observation, that is, by observing the work system as practiced in the company. The nature of the acquisition of general managerial skills also generally occurred through this mechanism of observation.

General managerial skills, as identified in the literature (see Chapter 3) can be divided into three categories: conceptual, human, and technical. The acquisition of these skills, will partly be determined by

* It is the practice of this company that the most important points of any decision have already been decided by the Japanese executives in the head office in Tokyo.

the level one occupies, and the power and authority one is given, and will be partly determined by various moderating factors or variables, as discussed earlier.

To determine the level or amount of, skills acquired, as earlier, each manager or director interviewed in this study was asked various questions relating to their acquisition of these skills, as well as prior skills accumulation, and the mechanisms or modes used to acquire such skills. The main question that every manager was asked was "how many general managerial skills have been acquired by you since you joined this company?". Other questions were "how important is each element of the general managerial skills to your present job?", "will you have an opportunity to develop and acquire the skill element you just identified in the future?, and if yes or no, why?".

After rigorous questioning and in depth discussion of these Indonesian managers or directors, the amount of general managerial skills acquired by them was then identified and grouped into four categories: "very many", "not very many", "very few", and "none at all", as indicated in Table 12. Table 12 reveals the following information for each category, as follows:

(1) Conceptual skills.

The majority, or 63%, of Indonesian managerial staff have only acquired "very few" conceptual skills. Only 25% believe that they have acquired "very many" conceptual skills, 6% claim they have acquired "not very many" conceptual skills, and 12% feel that they have not acquired conceptual skills at all.

(2) Human skills.

56% of the Indonesian managerial staff claimed that they had acquired "very many" human skills, 19% state they had acquired "not very many" human skills, and 25% had acquired only "very few" human skills.

(3) Technical skills.

Most of the Indonesian managerial staff believe that they have acquired technical skills while working in Japanese subsidiaries. In absolute terms, 37% of the interviewees claim to have acquired "very many" technical skills, and 50% claim to have acquired "not very many" technical skills, and 16% claim to have acquired only "very few" technical skills.

When the above information and the data available in Table 12, are then analysed, in terms of the "very many" classification, it is found that

- (a) the largest proportion of the Indonesian managerial staff (56%) working in Japanese subsidiaries have acquired "very many" human skills.
- (b) the next largest amount of general managerial skills to have been acquired at the "very many" level by the Indonesian managerial staff are technical skills around 37% of the total managers, as shown in Table 12.
- (c) the smallest portion of general managerial skills, in terms of "very many" classification, to have been acquired by the Indonesian managerial staff (19%) are conceptual skills.

The reasons put forward by the Indonesian managerial staff concerning the above findings, notably their limited acquisition of conceptual skills, are best summarised by an interviewee from P.T. Cahaya Inaba Electric. He said it was

because he was "given very limited opportunity by the company executives to have top managerial responsibility, was allowed no direct involvement in the top executive strategic decision making process, and was provided with no specific management program to enable me to acquire these skills". This line of reasoning was commonly expressed by the Indonesian managerial staff interviewed. In fact, some added to this by indicating their pessimism in gaining these conceptual skills in the future, because, as stated by an interviewee from P.T. Mesin Isuzu Indonesia, (1) the company provides no management training program to managerial staff, (2) there is the weak position of the Indonesian counterpart, including the Indonesian government, in not motivating the Japanese partner to provide such training. Furthermore, he said it would also depend on (a) his own performance in the job, and (b) the performance and growth of the company as a whole. Others, such as a manager from Mitsui & Co., Ltd., argued simply that "we do not know company policy" with respect to staff development or human resource programs and training programs.

Those who have acquired "very many" conceptual skills suggest that it has been made possible because of their participation in their company's management training program, their involvement in the company's decision making process, and their close association with the company's top executive circle. This argument is in line with a view expressed by a manager from P.T. Semen Nusantara. He said that his acquisition of such skills was made possible by three factors, namely:

- (1) his relatively high managerial position which required not only a greater amount of duties, responsibilities and power than technical staff, but also provided more exposure to a wide range of business activities,
- (2) his previous work experience and long association with this company, and
- (3) his participation in academic-related activities such as seminars, conferences, and symposia.

The above reasons also apply in the case of those who have acquired "very many" human skills. In this study, as indicated in Table 12, the majority of Indonesian managerial staff have acquired "very many" human skills. This is understandable because of the managerial positions occupied by the Indonesian managers. Most of them are given managerial positions which deal largely with areas such as public relations, industrial relations, marketing, legal affairs, personnel affairs, general and administrative affairs. Most of those Indonesians who occupy these positions often act as 'implementers' of decisions which are have already been made by the Japanese executives. The practice in most cases of Japanese subsidiaries operating in Indonesia is that (1) when an Indonesian is manager in any position, a Japanese must be their deputy or assistant, or if both the manager and deputies or assistants are Indonesian, they must be directly responsible to a Japanese superior, (2) most of the key or strategic positions, such as chief executive officer, president director, finance, production, business development, research and development, corporate planning, technical and engineering positions are occupied by Japanese. This fact explains why

the Indonesian managerial staff have acquired many more human and technical skills than conceptual skills.

In the case of technical skills, this is even more obvious as is indicated by the role played by Indonesian managerial staff working in the subsidiaries. As was found in the case studies that, in proportional terms, most Japanese staff working in the subsidiaries are in key or strategic management positions, despite the fact that their number is much smaller than the number of Indonesian staff, and their role and controlling power are greater than are the Indonesians'. This fact it explains why when one of the managers were interviewed, he told this researcher that Indonesian staff there are only 'executors rather than conceptors' of company strategy and policy.

Considering the positions occupied by Indonesian managerial staff and the large proportion of human skills that have been acquired by the Indonesian managerial staff, this does not mean that Indonesian managerial staff do not need conceptual skills. Although most Indonesian managers regarded the human and technical skills as relevant and important to their present position. Most of them are very keen, and in fact some of them need, to acquire such conceptual skills. However, the problem was recognised by an Indonesian manager from P.T. Polekao Indonesia Chemicals in that he maintained that the task might be difficult because to acquire such skills, he needs to interact closely with the chief executive circle, and, in particular, with Japanese management staff. He felt he would then have an opportunity to acquire such skills in the future, and while the opportunity may exist, the

question remains whether the Japanese are prepared to share such conceptual skills with local managerial staff. Because of the importance of such skills to the whole operation of the company, the Japanese technology transferor has a competitive advantage over the Indonesian technology transferee, which is why Japanese executives are reluctant to share conceptual skills and their strategic concepts with local managerial staff.

Knowing the reluctance of the Japanese to make public their company's policy, strategy, philosophy and other secrets, it appears that there is not much possibility of the Indonesian managers or directors working in most Japanese subsidiaries being able to acquire such conceptual skills. However, an interviewee from P.T. Polekao Chemical argues that "it will depend upon one's individual approach and determination to progress", because, he said, "if we fail to acquire those skills, we have to find other ways to acquire strategic management concepts and other relevant skills that guide the company's operation in this country".

5.4 The Role of various moderating factors in skill transfer

The amount of managerial skills acquired by Indonesian managerial staff is determined by various factors. As discussed in Chapter 12.7 and Chapter 2.9.2, there are five moderating factors or variables considered in this study, namely, (1) the organisational size of the subsidiary or company studied, (2) the educational background of the managers studied, (3) the host government's regulations, (4) the type of industry in which the subsidiaries are operating, and (5) the level of sophistication of the

transferred technology.

An analysis of the role of each of the above factors is presented below.

5.4.1 Organisational size of the company

The categories of the size of the subsidiary company used in this study are "small" (no more than 200 employees), "medium" (no more than 500 employees), and "large" (more than 500). Based upon these categories, 37.5% are large, 56% are medium, and 6% are small. Details of this is shown in TABLE 13.

As can be seen from Table 13, there are differences in the mount of managerial skills acquired by Indonesian managerial staff working within different company sizes. In other word, the size of the company is very much associated with the amount of certain types of managerial skills or with the skill transfer of the managers.

In the case of Japanese specific managerial skills, this study has found that more Indonesian managerial staff who work in medium sized companies have acquired 'very many' Japanese specific managerial skills than have those who work in small and large companies. In fact, Indonesian managers who work in large companies have only acquired 'very few' Japanese specific managerial skills. Although should be pointed out here that there was one exception, that of a director of P.T. Unilon Textile Industries (case study no. 8) who works in large company who had acquired 'very many' skills. According to the director the reasons for this are :

- (1) his long association with, and employment as, a director (higher than a manager) within, the company,

TABLE 13

**THE ACQUISITION OF MANAGERIAL SKILLS
BY THE SIZE OF ORGANISATION**

TYPE OF MANAGERIAL SKILLS	THE SIZE OF ORGANISATION		
	: Small 4, 6, 12, 13 (the numbers referred to here are the numbers of case studies)	: Medium 1, 2, 16	: Large 3,5,7,8,9,10,11,14,15:
a) Japanese Specific Managerial Skills	: NVM,NVM,VF,VF (Not Very Many)	: VM,VM,VM (Very Many)	: VF,NVM,VF,VM,VF,VF,VF,NVM,NVM (Very Few)
b) Functional or Professional Managerial Skills	: NVM,VM,NVM,NVM (Not Very Many)	: VM,VM,VM (Very Many)	: VM,VM,VM,VM,VM,NVM,VM,VF,NVM (Very Many)
c) General Managerial Skills:			
- Conceptual Skills	: VF,VF,VF,VF (Very Few)	: VF,NFM,VF (Very Few)	: VF,VM,VF,VM,NONE,NONE,VF,VF,VM, (Very Few)
- Human Skills	: NVM,VM,VF,VF (Very Few)	: VM,VM,VM (Very Many)	: VM,VM,VM,VM,VF,NVM,NVM,VF,VM (Very Many)
- Technical Skills	: VM,NVM,NVM,NVM (Not Very Many)	: VM,VM,VM (Very Many)	: NVM,NVM,VM,VF,NVM,NVM,VM,VF,NVM (Not Very Many)

N o t e s : This table was developed based on Table 12

VM	:Very Many	Small size : 1 - 200 employees
NVM	:Not Very Many	Medium size: 201 - 500 employees
VF	:Very Few	Large size : 501 - >501 employees
NONE	:None At All	

- (2) the fact that he has been associated with the application of most components of Japanese system of management,
- (3) his active participation in management training programs on his own initiative despite the fact that the company does not have a well formulated or written management training program,
- (4) his involvement, although not always, in the Japanese executives' management meeting and his active participation in the weekly meeting between the executives and the managerial staff,
- (5) his active personal observation of the work system as practiced in the company, and
- (6) his postgraduate qualification / training in economics which has accelerated his skills acquisition.

Those who have acquired 'very many' Japanese specific managerial skills work in chemicals, automobile or transport, and pharmaceutical industries, and those who have acquired 'very few' skills work in textile, metal, process, and some in large automobile or transport industries. One of those managers (P.T. Tiga Manunggal Synthetic Industries) who claims to have acquired 'very few' Japanese specific managerial skills states that it is because "we do not have a management training and job rotation program for managerial staff in this company. Therefore, our chance of acquiring more managerial skills and experience is limited". One Indonesian director, from P.T. Bridgestone Tire Indonesia, attributed his "very many" Japanese specific managerial skills acquisition to a significant application of the Japanese system of

management techniques both on the factory floor and in the administrative offices. This application, he says, has forced anyone directly involved to adapt themselves to the environment where the system is practiced.

In the case of functional or professional managerial skills, it has been found by this study that more Indonesian managerial staff working in medium and large companies acquire 'very many' functional managerial skills than those working in small companies. This is understandable because in both the medium and large sized companies, the managers and directors have wider tasks and activities along with greater working flexibility and responsibility than those in small companies. Furthermore, the managers and directors in the medium and larger companies have wider opportunities in utilising their professional skill and expertise than in the small companies. Therefore, the managers and directors working in the small companies will not have much more chances as in the case of medium and large companies in developing their human and professional potentials. One of the large sized company's Indonesian managerial staff from P.T. Tiga Manunggal Synthetic Industries stated that his 'very many' functional managerial skills acquisition has been not due to his participation in any specific management training program, although he claimed to have participated in some of off-the-job training such as attending seminars and conferences.

Furthermore, the managers and directors in the medium and larger companies have wider opportunities to utilise their professional skills and expertise than do those in

the small company. One of the large company's Indonesian managerial staff, from P.T. Tiga Manunggal Synthetic Industries, stated that his 'very many' functional managerial skills acquisition has been not due to his participation in any specific management training program, although he claimed to have participated in some off-the-job training such as attending seminars and conferences.

What is also clear in the information provided in the case studies and data in Table 13 is that there is no difference in the level of professional managerial skills acquired in either the medium or larger companies, although this is the case with respect to the acquisition of Japanese specific managerial skills. This also applies in the case of the acquisition of general managerial skills, notably conceptual and human skills.

Data provided in Table 13 suggest that most Indonesian managerial staff working in both medium and large sized companies have acquired 'very many' human skills. In contrast, only 'very few' human skills are acquired by those who work in small sized Japanese subsidiaries, but they acquired slightly more technical skills at the same companies. The only Indonesian managerial staff who had acquired 'very many' technical skills are those working in medium sized companies. Those who have acquired 'very many' technical skills argue, as stated by a manager from P.T. Meiji Indonesia Pharmaceutical, that the technical skills acquired are those skills related only to his own profession or portfolio, and this has been made possible because of his long association with the company, not because he took part

in management training as the company does not provide such training. The same line of argument was also given by most managers interviewed.

Meanwhile, there is one crucial issue of interest to both this study and the Indonesian managers themselves, that is, the acquisition of conceptual skills.

As can be seen from Table 13, all Indonesian managerial staff working in Japanese subsidiaries whether small, medium or large, have only acquired 'very few' conceptual skills. The main reasons for this, as discussed in Chapter 5.2, are that (1) the Indonesian managerial staff have never promoted to the company's top executive positions, and the Indonesian staff are often appointed second in charge or to 'figure head' positions, (2) the Indonesian managerial staff have never, or very rarely, participated in the company's strategic decision making process such as corporate planning, production management, research and development programs, and financial related matters, (3) most companies do not provide management training programs for managerial staff, (4) the absence of job training programs, (5) the limited application of the Japanese system of management, and (6) limited access of local staff to the company's technological expertise. Most of these reasons are also applicable in the case of human and technical skills.

However, the reasons provided above are fully understandable because, as discussed in Chapter 5.2, there are three factors still at work: (a) the Japanese are still in control of the company, in terms of ownership and in its management and leadership, (2) the Indonesian

partners are still very dependent technologically on the Japanese partners, and (3) Indonesian government regulations are perceived by the Indonesian staff as still too weak to have any significant impact in forcing the Japanese technology transferors to transfer the needed or relevant skills to the host employees.

5.4.2 Level of educational background

In this study the level of educational background of the Indonesian local managerial staff is categorised into three classification of qualifications, that is, (1) high school certificate i.e. having completing six years study at high school level, (2) an undergraduate qualification, having completed 3 to 4 years of study to obtain a first degree such as a BSc (Bachelor of Science) degree or Ir (Ir = Insinyur, that is, an Indonesian engineering degree. To obtain this degree in the old education system requires at least six years of study at a university, but only 4 years under the new system). (3) A postgraduate qualification, having completed at least two years study often gaining an undergraduate qualification to obtain a second or higher degree.

According to the data available in Appendix 1, a majority of the Indonesian managerial staff interviewed have a postgraduate qualification. The data are further set out in TABLE 14 where 62% can be seen to have a postgraduate qualification, 19% have undergraduate qualifications, and 19% were also found to have a high school certificate qualification. The level of managerial skills associated with each educational classification is

also shown in Table 14.

Those who have a postgraduate qualification have acquired 'very many' Japanese specific managerial skills, while those with HSC and undergraduate qualification have only acquired 'very few' skills. In the case of functional managerial skills, those with postgraduate qualifications have acquired the same level of skills, but those with undergraduate qualification have scored better by having acquired 'very many functional managerial skills, while those with HSC qualifications score poorly by only acquiring 'very few' skills.

With respect to conceptual skill managerial skills, all Indonesian managerial staff investigated have acquired the same level of skills acquisition i.e. 'very few'. However, in the case of human skills both HSC and postgraduate qualifications have acquired 'very many' human skills, while those with undergraduate qualifications have only acquired 'very few' human skills. The same acquisition level is also associated with the technical skills where those with postgraduate qualifications have definitely acquired 'very many' technical skills.

When Table 14 is further examined, it is clear that those with postgraduate qualifications have clearly acquired 'very many' managerial skills except for conceptual skills. However, the limited acquisition of conceptual skills was not only experienced by those with the postgraduate qualifications, but was found across the board and is consistent with the data in Table 13.

When the above findings are analysed, it is clear that those with higher university postgraduate

TABLE 14

**THE ACQUISITION OF MANAGERIAL SKILLS BY
THE LEVEL OF EDUCATIONAL BACKGROUND**

LEVEL OF EDUCATION	Japanese : Functional : : Specific : Managerial : Managerial Sk: Skills : Conceptual Skills : Human Skills : Technical Skill				
	GENEREAL MANAGERIAL SKILLS				
A. HIGH SCHOOL CERTIFICATE - HSC					
(12 years study after attending primary school)	: VF,NVM,VF	: VM,VM,VF	: VF,VM,NONE	: VM,VM,VF	: NVM,NVM,NVM
The managers and case study numbers:					
(3, 5, 9) = 19%	: (Very Few)	: (Very Many)	: (Very Few)	: (Very Many)	: (Not Very Many)
B. UNDERGRADUATE QUALIFICATION					
(3 to 4 years study at university / academy/college after completing HSC, and obtaining first degree)	: VF,VF,NVM	: NVM,NVM,VF	: VF,VF,VF	: VF,VF,VF	: NVM,NVM,FV
The managers and case study numbers:					
(12,13,14) = 19%	: (Very Few)	: (Not Very Many)	: (Very Few)	: (Very Few)	: (Not Very Many)
C. POSTGRADUATE QUALIFICATION					
(at least 2 years study after completing undergraduate program, and obtaining second/higher degree such as masters degree)	: VM,VM,NVM,NVM	: VM,VM,NVM	: VF,NVM,VF,VF,VF,VM	: VM,VM,NVM,VM	: VM,VM,VM,NVM,VM
	: VF,VM,VF,VF	: VM,VM,VM	: NONE,VF,VM,VF	: VM,VM,NVM,NVM	: VF,NVM,VM,NVM,V
	: NVM,VM	: NVM,VM,NVM		: VM,VM	
The managers and case study numbers:					
(1,2,4,6,7,8,10,11,15,16) = 62%	: (Very Many)	: (Very Many)	: (Very Few)	: (Very Many)	: (Very Many)

Notes: VM = Very Many
 NVM = Not Very Many
 VF = Very Few
 NONE = None At All

qualifications have acquired 'very many' (i.e. almost every) managerial skills, as set out in this study, while those who do not have postgraduate qualifications have failed to gain 'very many' managerial skills. In other words, the level of managerial staff's educational background is associated with the level of managerial skills.

The reasons for this are discussed in Chapter 4, especially in the case of P.T. Polekao Indonesia Chemicals, P.T. Krama Yudha Tiga Berlian Motors, and P.T. Unilon Textile Industries. Taking P.T. Polekao as an example where the Indonesian staff is the Director of Finance of the company, who graduated from a Faculty of Economics, Universitas Ujung Pandang, South Sulawesi, where he studied the Japanese management system and obtained his postgraduate degree in economics. He stated that "had I not had previous study and work experience, I would not have expected to fully comprehend the Japanese system of management, and would not have been able to acquire the Japanese managerial skills as they are practised by a Japanese a Japanese controlled company".

5.4.3 The host government's regulations

As discussed in Chapters 2.19 and 3.8 the host country government's rules and regulations designed to regulate issues such as foreign investment, industrial relations, training and development, employment of foreign workers, and other related regulations, are expected to affect the importantion and utilization of the technology transferal process. As this study examines the process from the technology recipient's point of view (the Indonesian

end), the effects of the government's regulations :

- (1) can be positive, that is, providing benefits in terms of developing the host country's technology or forming the skills of local employees, and therefore, it is seen as expediting the process, or
- (2) it can be negative, that is, seen as slowing down the process, or
- (3) it can be neutral, providing no effect whether positive or negative to the host country's technological development of local skills.

It has been argued in Chapter 3.8 that host government regulations represent a part of legal factor that can become either barriers or motivating variables to the technology and skill transfer process.

The Indonesian government has enacted various regulations concerning technology transfer and/or skill transfer, the employment of expatriates in Indonesia, and the obligations of the technology transferor and foreign investor to provide training to Indonesian staff working in the foreign companies operating in Indonesia. The regulations have been issued by various government ministries or departments such as the Department of Labour, Department of Industry, Department of Research and Technology (particularly the Body for the Study and Application of Technology-BPPT), and the Foreign Investment Coordinating Board (BKPM).

In this study, all interviewees were asked three main questions, namely, (1) do you know of the existence of Indonesian government regulations concerning foreign investment, technology transfer and training of local

Indonesian employees / staff by foreign companies?, (2) do you think that the current Indonesian government regulations compel your company to provide training to local employees, including managerial staff ?, and (3) How significant are the Indonesian government regulations motivating your company to provide training, especially management training, to local Indonesian employees/staff?.

The responses to the above questions are indicated in TABLE 15.

Table 15 shows that all Indonesian managers and directors interviewed responded positively to the first question, indicating that all of them knew of the existence of the regulations in question. At the same time, the majority of them (87%) stated that the regulations did not compel the foreign company / technology transferor to provide training to local employees, including Indonesian managerial staff working in the companies, and only 13% stated that the regulations "somewhat compelled" the companies to provide training. Therefore, it is obvious that the existing Indonesian regulations concerning the transfer of technology and foreign investment, as viewed by the Indonesian managers and directors interviewed do not have any significant impact on the companies.

The above findings are even more obvious when the answers given to the third question are analysed. As shown in Table 15, most Indonesian managers and directors interviewed stated that the present Indonesian regulations do not have any significant impact in motivating the Japanese subsidiaries to provide training, especially management training, to local Indonesian employees. This

TABLE 15
THE ROLE OF THE HOST GOVERNMENT REGULATIONS

Q U E S T I O N S	: R E S P O N S E S T O T H E Q U E S T I O N S
a) Do you know of the existence of the Indonesian government regulations concerning foreign investment, technology transfer and training of the local Indonesian employees / staff by the foreign companies ?.	: 100 % "yes, I know" : ---% "no, do not know"
b) Do you think that the current Indonesian government compels your company to provide training to the local employees including managerial staff ?.	: ---% "yes compel" : 13 % "yes somewhat compel" : 87 : "do not compel"
c) How significant is the Indonesian government regulations motivating your company to provide training, especially management training, to the local Indonesian employees / staff ?.	: ---% "yes very significant" : 6 % "yes significant" : 94 % say, not significant

statement has been further confirmed by the data and information provided in Appendix 1 and Table 11 where only three companies provided management training and 81% have provided no management training at all, and the three companies which have provided management training, they have still not fully implemented their management training program.

The absence of a management training program in most Japanese subsidiaries provides a clear indication that the Indonesian government regulations have not yet been fully observed by Japanese company executives. This has led this researcher to investigate much more deeply why such a situation should take place.

One comment from an Indonesian director of P.T. Indonesia Synthetic Textile Mills stated that "the present [Indonesian] regulations are too weak and the foreign technology transferors feel that they are not compelled or given sanctions, if they do not transfer anything at all. In other words, the technology transferors have no obligations, and they can choose whether to transfer anything or not". The same view was also expressed by an Indonesian managerial staff working at P.T. Easterntex and at P.T. Century Textile Indonesia. The staff from P.T. Century Textile stated that "it seems that the Japanese do not really care at all about the existence of Indonesian government regulations, let alone implement them".

The absence of management training in most Japanese subsidiaries seems to stem from the fact that the Indonesian government, as perceived by one Indonesian manager (Mr. Firdaus) from P.T. Indonesia Asahan Aluminium,

has not really provided any solid foundation or framework to guide the technology transfer. Mr. Firdaus maintained that this was because there has not been any clear regulatory measures or strict conditions put forward by the Indonesian government concerning the type, nature and sophistication level of technology when the technology was first transferred to Indonesia. This situation, he said, provided the Japanese partner with the freedom to transfer any type of technology to Indonesia.

The perceived weakness of the current regulations of the Indonesian government has been further emphasized by Dr. Budiana, P.T. Meiji Indonesia Pharmaceutical Industries, when he observed that "Indonesian government regulations and policies do not seem to directly compel or force the company to provide training for locals, but rather it has been motivated by the needs of the company to have skilled and qualified workers". In view of this fact, Dr. Budiana believes that "the Indonesian government needs to regulate in some form to force or stimulate the technology transferors to transfer their skills, knowledge and expertise to the locals, especially managerial skills and expertise".

The perceptions presented above by the Indonesian managerial staff suggest that the Indonesian government should take legislative action to streamline the current government regulations and compel the foreign companies operating in Indonesia to be more respectfull of the country's interest and rules. Judging from the data provided in Table 15, the existing regulations play little role in the way they should. As discussed by Drs.

Sjafruddin, a director from P.T. Polekao Indonesia Chemicals, his company appears to disregard or ignore the Indonesian government's requirement for foreign companies to provide training for their local employees.

The point that Drs. Sjafruddin wanted to convey was that whether the government regulations exist or not, the company did not feel compelled to provide training for its employees. This was because all the training, particularly management training, that had been provided so far was not due to any regulatory obligations of the government, but rather occurred when the company saw a need, such as when new technology was introduced and was used in the company or when the chief executive officers wanted one or more of the company's managers or directors to be trained in Japan or other countries.

5.4.4 Type of Industry

A review of previous studies, as was discussed in Chapter 2.19, indicated that different types of industry may have differential effects in terms of the technology transferred. To have a representative and hopefully valid finding with regard to this, this study covered eight different types of industry. This wide coverage was expected to give a better understanding of the effect of a industry on the managerial skills formation of Indonesian managerial staff.

The eight industries included in this study as indicated in TABLE 16 are grouped according to international industrial classification as adopted in Jetro 1982 publication. The industries are (a) textile mill products, (b) rubber and plastics products, (c) chemicals

TABLE 16

THE ACQUISITION OF MANAGERIAL SKILLS BY INDUSTRIES
(Based on international industrial classification)

TYPE OF INDUSTRY	Japanese	: Functional	:	GENEAL MANAGERIAL SKILLS		
	: Specific	: Managerial	:	Managerial Sk: Skills	: Conceptual Skills : Human Skills	: Technical Skills
MANUFACTURING INDUSTRIES						
A. 223.TEXTILE MILL PRODUCTS						
7. P.T. INDONESIA SYNTHETIC TEXTILE MILLS	: Very few	: Very many	: Very few	: Very many	: Very many	
8. P.T. UNILON TEXTILE INDUSTRIES	: Very many	: Very many	: Very many	: Very many	: Very few	
9. P.T. EASTERNTEX	: Very few	: Very few	: None at all	: Very few	: Not very many	
10.P.T. CENTURY TEXTILE INDUSTRIES	: Very few	: Not v. many	: None at all	: Not very many	: Not very many	
11.P.T. TIGA MANUNGAL SYNTHETIC INDUSTRIES	: Very few	: Very many	: Very few	: Not very many	: Very many	
B. 230.RUBBER AND PLASTICS PRODUCTS						
5. P.T. BRIDGESTONE TYRE INDONESIA	: Not very many	: Very many	: Very many	: Very many	: Not very many	
C. 231.CHEMICALS AND CHEMICAL PRODUCTS						
1. P.T. POLEKAO INDONESIA CHEMICALS,	: Very many	: Very many	: Very few	: Very many	: Very many	
16.P.T. MEIJI INDONESIA PHARMACEUTICAL INDUSTRIES	: Very many	: Very many	: Very few	: Very many	: Very many	
D. 233.NON-METALIC MINERAL PRODUCTS						
15.P.T. SEMEN NUSANTARA	: Not very many	: Not v. many	: Very many	: Very many	: Not very many	
E. 237.ELECTRONIC MACHINERY, APPARATUS, APPLIANCES, AND SUPPLIES						
12.P.T. CAHAYA INABA ELECTRIC	: Very few	: Not v. many	: Very few	: Very few	: Not very many	
F.238.TRANSPORT EQUIPMENTS/AUTOMOBILE						
2. P.T. KRAMA YUDHA TIGA BERLIAN MOTORS	: Very many	: Very many	: Not very many	: Very many	: Very many	
3. P.T. UNICOR PRIMA UTAMA,	: Very few	: Very many	: Very few	: Very many	: Not very many	
4. P.T. MESIN ISUZU INDONESIA	: Not very many	: Not v. many	: Very few	: Not very many	: Very many	
NON-MANUFACTURING INDUSTRIES						
G.400.CONSTRUCTION AND ENGINEERING						
13.P.T. NIPPON STEEL CONSTRUCTION INDONESIA	: Very few	: Not v. many	: Very few	: Very few	: Not very many	
14.P.T. INDONESIA ASAHAN ALUMINIUM	: Not very many	: Very few	: Very few	: Very few	: Very few	
H.600.COMMERCE						
6. MITSUI & CO., LTD	: Not very many	: Very many	: Very few	: Very many	: Not very many	

Notes : This table was made based on the international industrial classification number and divided into manufacturing and non-manufacturing sectors. Please see Figure 3 and Table 16 of this thesis.

and chemical products, (d) non-metallic mineral products, (e) electronic machinery, apparatus, appliances, and supplies, (f) transport equipments, (g) construction and engineering, and (h) commerce. The transport equipment industry and textile industries are represented by more than one companies or managerial staff, but judgment of the skills acquired by each separate company / manager is tabulated and grouped only by each industry. For instance, in the case of the transport equipments industry, the amount of Japanese specific managerial skills is counted as 'not very many' (an average amount of skills acquired by interviewees). This has been done for the following reasons:

- (1) the companies and managers who were originally to be visited and/or interviewed declined to participate in the study, and in many cases their addresses had changed or they had moved, and they places could not be located;
- (2) two industries (chemical and transport industries) were among the earliest industries operating in Indonesia, and these industries are quite large, in terms of numbers of companies operating in Indonesia. Therefore, these industries can provide a significant positive impact on local skill formation;
- (3) the managerial staff were very willing and co-operative in taking part in this study.

Like the previous variables, this type of industry variable will be examined to see as whether managers working at different types of industry acquire differential amounts of managerial skills.

As indicated in Table 16, it is clear that those Indonesian managerial staff working in chemical and chemical products industries have acquired 'very many' managerial skills compared to those working in other industries, except for conceptual skills. The second group of industries which have the largest amount of managerial skills acquired is rubber and plastics products industry, while the least amount of managerial skills acquired are by those who work in construction and engineering industry. Table 16 also provides a clear indication that manufacturing industries have proven to provide more managerial skills to managerial staff than non-manufacturing industries.

The chemicals and chemical product industry is the only industry which provided 'very many' Japanese specific managerial skills, functional managerial skills, and general managerial skills (human and technical skills) to Indonesian managerial staff. After these two industries, the next industry that is very beneficial to Indonesian managers in terms of skills acquisition, is the rubber and plastics products industry, as the manager had acquired 'very many' functional, conceptual and human skills, and rather fewer Japanese specific managerial skills.

However, one point that should be made is that although the non-metallic mineral products industry did not provide 'very many' skills as those in the chemicals and chemicals products industry, it did provide 'very many' conceptual skills. This is not surprising, considering that the manager concerned has (1) a long association with the company, (2) postgraduate qualifications, (3) long working

experience before joined the current company, (4) had participated in some of the company's training programs, and (5) occupied a relatively very important and higher position as manager in a larger company, and therefore, had quite actively participated in top executive meetings and/or decision making processes. The manager's acquisition of 'very many' conceptual skills should be seen in light of his relatively poor acquisition of other managerial skills. The same reasons also apply in the case of P.T. Unilon Textile Industries as shown in Table 16.

In view of the above discussion and findings, it can be argued that the type of industry would seem to play a role in determining the level or amount of managerial skills acquisition by local managerial staff. Table 16 provides data relevant to the discussion in Chapter 4. The government of the technology recipient or transferee should examine the type of technology it wishes to transfer or the type of industry it wishes to develop in the light of the amount of managerial skills each respective industry might bring into the country.

5.4.5 The level of sophistication of transferred technology

The level of sophistication of technology transferred in this study was divided into three levels, (1) very sophisticated or a high level of technology (2) conventional technology, that is, technology that is well established and widespread in advanced countries, or medium level of technology, and (3) old technology verging on obsolescence in advanced countries, or a low level of technology. The level of sophistication of technology was

used here to grade the technology transferred to Indonesia, and to compare the transferred technology to existing technology in Indonesia. This study did not attempt to analyse in greater detail the difference between the Japanese technology transferred to Indonesia and the technology being used in developed countries (see Appendix 1).

As in the case of other moderating factors, the level of sophistication of the technology transferred can have differential effects on skill formation. The findings the study on the effect of different level of technological sophistication is presented in TABLE 17.

After intensive discussions with Indonesian managers and directors of Japanese subsidiaries, it was found that, according to the Indonesian managers and directors, the Japanese technology transferred to Indonesia was all classified as very sophisticated or high technology and conventional or medium level technology compared with the existing technologies in Indonesia, and none of the technology transferred was classified as low technology.

In this study, it was found that 63% of the Japanese technology transferred to Indonesia was classified as 'very sophisticated' technology and 37% classified as conventional or medium level technology (see Table 17). Based on these two classification of technology the acquisition of managerial skills by the Indonesian managerial staff were then examined.

When the technology transferred to Indonesia is compared with technology being used in developed countries, this study found that 19% classified as very sophisticated

TABLE 17

THE ACQUISITION OF MANAGERIAL SKILLS BY THE SOPHISTICATION LEVEL OF THE TRANSFERRED TECHNOLOGY TO INDONESIA COMPARED WITH THE EXISTING TECHNOLOGY IN INDONESIA

TYPE OF MANAGERIAL SKILLS ACQUIRED BY INDONESIAN MANAGERIAL STAFF	THE TRANSFERRED TECHNOLOGY COMPARED WITH EXISTING TECH. IN INDONESIA		
	:Very Sophisticated or High Technology (1,2,3,4,5,7,10,13,14,15)	:Conventional or Fairly well: established technology (6,8,9,11,12,16)	: Low Technology or old technology
	(the numbers referred to here are the numbers of case studies)		
a) Japanese Specific Managerial Skills	: VM,VM,VF,NVM,NVM,VF,VF,VF: NVM,NVM,NVM	: NVM,VM,VF,VF,VF,VM	: -
	(Not Very Many)	: (Very Few)	: -
b) Functional or Professional Managerial Skills	: VM,VM,VM,NVM,VM,VM,NVM NVM,VF,NVM	: VM,VM,VF,VM,NVM,VM	: -
	(Very Many)	: (Very Many)	: -
c) General Managerial Skills:			
- Conceptual Skills	: VF,NVM,VF,VF,VM,VF,NONE, VF,VF,VM	: VF,VM,NONE,VF,VF,VF	: -
	(Very Few)	: (Very Few)	: -
- Human Skills	: VM,VM,VM,NVM,VM,VM,NVM VF,VF,VM	: VM,VM,VF,NVM,VF,VM	: -
	(Very Many)	: (Very Many)	: -
- Technical Skills	: VM,VM,NVM,VM,NVM,VM,NVM NVM,VF,NVM	: NVM,VF,NVM,VM,NVM,VM	: -
	(Not Very Many)	: (Not Very Many)	: -

N o t e s : This table is developed based on Table 12

VM :Very Many
NVM :Not Very Many
VF :Very Few
NONE :None At All

technology, 68 % classified as conventional or medium level technology, and 13% classified as low level technology as indicated in Appendix 2.

According to Table 17, those who work in the very sophisticated technology subsidiaries have acquired more Japanese specific managerial skills than those who work in subsidiaries which employ conventional technology. With respect to other types of managerial skills, this study found that there was no difference concerning the acquisition of functional and general managerial skills. In other words the difference was only found in the acquisition of Japanese specific managerial skills.

When Table 17 is closely examined, it can be concluded that there is only a slight difference in the level of managerial skills acquired by the Indonesian managers and directors working in Japanese subsidiaries operating in Indonesia. In understanding this fact, it can be suggested that the level of sophistication of technology transferred plays a very minor or little role in developing the managerial skills of the Indonesian employees, and, therefore, the impact of different levels of sophistication of the technology transferred to the formation of managerial skills of the Indonesian managerial staff is slightly significant.

Having examined the information and data presented in Chapter 4 and the various tables in Chapter 5, it is clear that each of the five moderating variables plays a different role in determining and moderating the nature and degree of the effect of Japanese technology transfer on managerial skills formation of Indonesian managerial staff.

The size of the company's organisation, level of educational background of the managerial staff, and type of industry have been found to have very much played a very important role in determining and moderating the Japanese technology transfer process to Indonesia, and therefore, they have a significant impact in influencing the skills transfer from the Japanese to Indonesian managerial staff. While the sophistication level of the technology transferred was found to have a very minor role in the transfer process, as it applies in the case of the Japanese specific managerial skills formation process. In the case of host government regulations, it can be said that although the existence of this variable is widely recognised by subsidiaries, its role in determining and moderating the skills transfer process was found to be very limited, and therefore, the regulation has no significant impact on the subsidiaries.

5.5 Mechanisms of skill formation

The mechanisms used by the Japanese companies to transfer their technology to Indonesia is mostly via joint venture. Theoretically, as argued by O'Dochartaigh (1976) (see also Chapter 3.7 of this thesis) joint venture represents foreign direct investment with the donor country being either a majority (usually not much over 50%), or, more usually, a minority, shareholder. O'Dochartaigh's argument seems to fit into the Indonesian case as suggested by the present study.

It has been found by this study that other than the trading industry (Mitsui & Co., Ltd.), all types of industry involved in transferring technology to Indonesia

employed joint ventures as the mode of the transfer process. None of the Japanese subsidiaries under study utilised another forms of transfer modes such as turnkey or licensing. The case of Mitsui & Co., Ltd. is understood and exceptional, because this subsidiary is a wholly - owned Japanese company operating under the direct control and management of Japanese, and no portion of the company's shares are owned by Indonesians. In the absence of local ownership, Mitsui utilises direct foreign investment as its mode of its technology transfer to Indonesia.

The follow-up process of Japanese technology transfer to Indonesia is the transplantation of various skills, which in this study, are managerial skills transferred, to Indonesian employees.

All information and data gathered from this study, as discussed earlier, indicated that Indonesian managerial staff have acquired managerial skills. The acquisition of these skills has been carried out through various modes of training, as indicated in TABLE 18.

It has been identified in this study that there are five main modes of training to acquire managerial skills, namely, (1) on-the-job training (OTJ) which includes in it the activity of job rotation and self development or self study, (2) off-the-job training (OffTJ), including participation in training programs held in Japan, (3) attending educational institutions as formal education, (4) participation in short course programs, such as seminars, conferences, symposiums, up grading programs, and (5) the counterpart system, that is, working at different companies to acquire skills, experiences and other expertise.

TABLE 18

**VARIOUS MODES OF TRAINING PARTICIPATED BY INDONESIAN
MANAGERIAL STAFF TO ACQUIRE MANAGERIAL SKILLS**

MODES OF TRAINING	Participation in training progr	
	: Yes, participated	: No, did not participate
(1) On-the-job training	: 1,2,3,4,5,7,8,11,13,15,16 (69%)	: 6,9,10,12,14 (31%)
- Job rotation	: 5,16 (12%)	: 1,2,3,4,6,7,8,9,10,11,12,13,14,15,16 (88%)
- Self study / self development	: 1,2,4,5,7,8,11,14,15,16 (63%)	: 3,6,9,10,11,12,13 (37%)
(2) Off-the-job training	: 1,2,3,4,5,8,15,16 (50%)	: 6,7,9,10,11,12,14 (50%)
- Trained in Japan	: 1,3,5,8,14,16 (37%)	: 2,4,6,7,9,10,11,12,13,15 (63%)
(3) Formal training such as attending university, academy or college	: 2 (6%)	: 1,3,4,5,6,7,8,9,10,11,12,13,14,15,16 (94%)
(4) Participated in short course programs such as seminars, conferences	: 1,2,3,5,6,11,15,16 (50%)	: 4,7,8,9,10,12,13,14 (50%)
(5) Counterpart system, that is, working at different company to acquire skills	: 1 (6%)	: 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16 (94%)

Not all of the Indonesian managerial staff as this study found acquired their managerial skills through all five modes of training. This was mainly because (1) the company did not have a written and formulated training program either for technical and/or managerial staff, and (2) the company had not fully implemented its management training program.

It should be said that, in some cases, although the company does not have a written and formulated training program, the company sometimes provides training to its employees when the need rises, or often a company does have a formulated and written training program but it is only designed for technical workers. Data in Table 18 contains information concerning the types of training modes taken by Indonesian managerial staff in their efforts to acquire managerial skills, and the information indicated in Table 18 does not mean that a particular company has had a formulated and written management training program. Appendix 1 clearly shows that only three companies (cases nos.1, 2 and 5) have a formulated and written technical and management training programs.

Table 18 indicates that 69% of the Indonesian managers and directors have participated in OTJ program or have acquired their skills by way of OTJ. As part of the OTJ program, only 12% of the managerial staff took part in job rotation (JR). This is understandable because, as indicated in Table 11, only two companies have a JR program. Often in the absence, or as part of, this, the managerial staff resorted to self study or self development, that is, acquiring skills or knowledge through

their own initiative such as reading books, journals, magazines, company booklets, brochures, manuals, and by observing closely how things are done and operated, how a decision is made, how the company is managed, and so forth. In extreme cases, many managers told this researcher that they have to steal by photocopying important manuals or documents as their executives or superiors are very reluctant to teach them certain aspects of business management and operation.

Apart from OJT, half the interviewees (or 50%) have participated in OFFJT programs. As part of the program some of the staff (or 37%) were sent to Japan to take part in a training program. All the Indonesian managerial staff interviewed indicated that they were interested in participating in training in Japan. However, those who have participated in a training program in Japan do not believe that they have gained very much valuable knowledge.

An Indonesian director, Drs. Sjafruddin, who works in P.T. Polekao Indonesia Chemicals believes that his training programs in Japan did not materialise as he expected. He regarded his two trainings in Japan very much a recreational visit. The result of this, he said that "we did not get anything useful or specific of business policy, either in the form of Japanese strategic management, or the various elements of Japanese system of management. What we received from the so-called training in Japan were lessons on Japanese language and culture, and to see Japan". He explained that during his training in Japan, instructors of the trainings were Japanese personnel from the parent company. He suggested that many difficulties were

experienced by those participating in training programs in Japan. They were (1) language problems as Japanese language was used in the training program, (2) the time of the training was too short, and (3) the training program was too compact or condensed. Other managers interviewed in this study who took part in training programs in Japan expressed the same kind of difficulties. However, Drs. Sjafruddin said that he personally did not experience any major difficulty while attending the training due to his prior knowledge of the subjects taught, and also his proficiency in English and some Japanese. Nevertheless Drs. Sjafruddin concluded that, due to his prior knowledge of the subjects taught, he basically had gained no new knowledge or skills from his training in Japan.

Others who also participated in training programs in Japan were also disappointed. Mr. Wibowo, Marketing Director of P.T. Unicor Prima Utama, stated that "In reality, I did not find the training I attended had any relationship to, or relevance with, the job I am doing. It only gave me new views and visions about general things that were not very useful in accomplishing my task". he further stated, the training in Japan was "a cross cultural management training program to provide a new dimension to, and perspective on, international culture differences. Most of the training apparently adopted too much of a theoretical rather than practical approach". Nevertheless he said, the training "provided me with a new dimension to my understanding of the global or international operation of Japanese companies, at least seen from the point of view of the company where I am working".

Drs. Sinaga, an Indonesian Director who works at P.T. Unilon Textile Industries, also expressed some criticism of his training participation in Japan. He said although his training in Japan provided some new skills or knowledge, its relevance to his job was limited. This expression was also made by Dr. Budiana, Marketing Director of P.T. Meiji Indonesia Pharmaceutical Industries. He stated that his some ten training programs in Japan did not provide him with new skills and knowledge relevant to his work. The result of the training was "only to widen my view and vision about the outside world and the existence of the parent company in Japan".

Other modes of training have been attended by the Indonesian managerial staff who attended formal classes at a university to gain university qualifications. However, this mode is not that popular because only 6% of the company provides such a policy or program. However, in its replacement of formal training at university, some 50% of the managers stated that they has participated in various short course programs such as seminars and conferences. Both of these modes are not formally programmed by the company but are generally initiated by the managers and directors themselves, and then approved by the company's executives.

The counterpart system is one of the training modes that most Indonesian staff interviewed stated that they were ready to participate in. However, unfortunately, only 6% of the subsidiaries has this kind of program. No reason was provided why the companies did not have such a program.

In view of the above findings and analysis of each

case study in Chapter 4, most Indonesian managerial staff stated that the most effective modes of training to acquire the various managerial skills suggested, in order of preference were : (1) on-the-job training including job rotation and self development, (2) off-the-job training, (3) counterpart system, (4) participating in short course programs such as seminars and conferences, and (5) attending university classes until gaining qualifications.

Although the preferences were there, the companies, in most cases, had not provided the necessary mechanisms that were of interest to the Indonesian managerial staff in their efforts to acquire various managerial skills. For example, with regard to job rotation, it was strongly established in Chapter 2.19.3 and Chapter 10 that job rotation, according to Koike (1981, p.26), Fujimori (1986, p.356), Washito (1986, pp.330-331) and Ford (1986) has been regarded as the Japanese way of forming skills, and training, either on-the-job and/or off-the-job, has also been regarded as a key ingredient in the Japanese concept of skill formation. Many managers interviewed believed that the absence of these elements had led them to understand why they had only limited access and opportunity to acquire managerial skills, especially the Japanese specific ones, and to question the nature and intention of Japanese business operations in Indonesia.

Some of the managers interviewed believed that the reasons for the situation was (1) because of the strong Japanese control of the company as a result of agreements between Indonesian and Japanese partners to establish the joint venture company operating in Indonesia, and (2)

because of the weakness of Indonesian government regulations concerning technology transfer and foreign investment in Indonesia.

In view of the above situation, an Indonesian director who works at P.T. Indonesia Synthetic Textile Mills, stated that the joint venture agreement "should be modified and further detailed, so as to be more balanced so that each party would have a reasonable share in advantages". He realised that this goal was difficult to achieve and, therefore, he stated that "the Indonesian government should take regulatory measures to assist the local partner to have more say in the running of the company and to expedite the process of technology transfer". He further argued that if the current situation continues Indonesia in the long-term will be disadvantaged in exploiting national resources because the controlling power of the foreign partners will remain strong and the local partner will continue to depend on foreign technology and capital, and any intention to acquire foreign technology will remain a dream".

5.6 A Model of technology Transfer and Skill

Formation

This chapter aims to discuss some of the most important issues raised in previous chapters, and to build a model of technology transfer and skill formation based upon findings of this study and from reviewing previous research in the areas.

In an attempt to build a model of technology transfer and skill formation (abbreviated as TTSTF), the researcher has sought to review various studies undertaken earlier, as

as discussed in Chapter 2.16. On the basis of this review, a general model of technology transfer, in this case a general model of Japanese technology transfer to Indonesia is proposed (see Figure 7). This proposed general model with all its related issues and variables was then tested in this study. Many issues have been identified in this study. They are:

- (1) mechanism used to transfer the technology;
- (2) types of the technology transferred;
- (3) motives to transfer the technology;
- (4) the effect of the transferred technology on skill formation of the local employees;
- (5) types of skills transferred and formed;
- (6) variables or factors that moderate the transfer process and role played by, and impact of, each variable in the transfer process;
- (7) the degree of amount of skills transferred by the technology transferors (the Japanese) and skills acquired by the technology transferees (the Indonesian managerial staff);

The above issues have been extensively discussed in Chapter 2 and 3, and they have been tested in this study's field research in which the findings of this study are analysed, discussed and presented in Chapter 4.

5.6.1 The finding of the study and the model

One of the objectives of this study is to develop a model that is relevant to issues of the effects of technology transfer on skill development or formation of the employees of the technology recipient. The model that has been developed as a result of this study is called a

model of technology transfer and skill formation (TTSF).

As widely discussed in Chapter 2.16, there have been attempts made by many scholars to create models of technology transfer process, and some of the models that have been created so far fall short of indicating the effects of the transferred technology on the improvement and development of the skills of the technology recipients who are involved directly in the transfer process. Such a short fall was in fact noted by Samli when he warned that "no one all-inclusive and perfectly functional model of technology transfer is applicable to all related situations (Samli, 1985, p.8).

The TTSF model built here has been developed on the basis of (a) existing theoretical approaches established by previous studies (b) and the findings of the study.

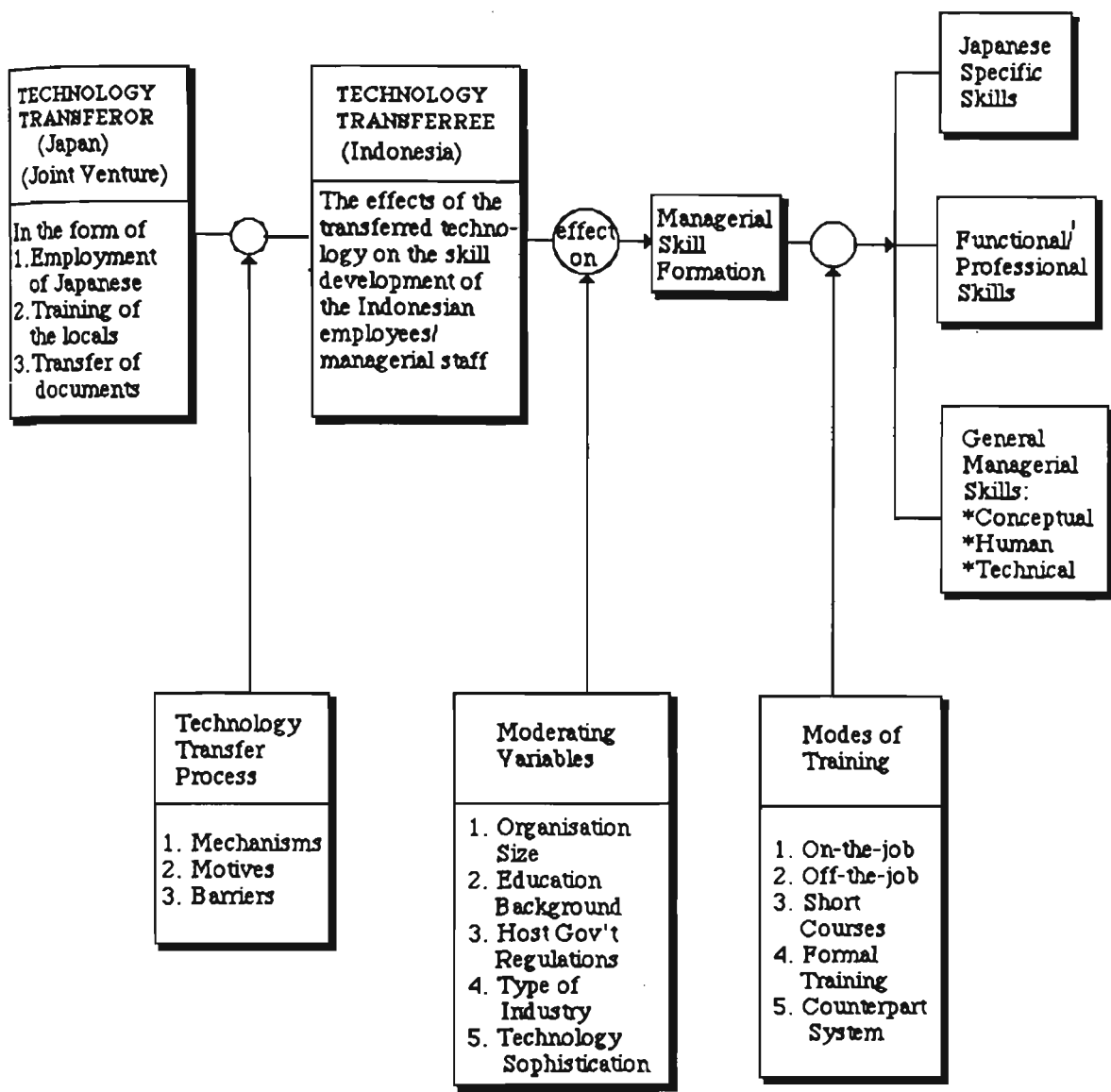
Having analysed and considered the two factors mentioned above, it is clear that the initial general model as presented in Figure 7 is basically confirmed by the field research undertaken. The result of the confirmation has led to the establishment of this new TTSF model as shown in FIGURE 18. The new model is modified in the light of the research findings.

The new model of technology transfer and skill formation as indicated in Figure 18 reflects various major findings of this study. Chapter 5 of this thesis has outlined those findings. Some of major findings are:

(1) The type of technology transferred:

The types of technology transferred are divided into two categories in terms of (a) the level of sophistication of the technology transferred, (2) the

FIGURE 18
A REVISED MODEL OF
TECHNOLOGY TRANSFER AND SKIL FORMATION



Notes:

_____ effect

() complex interaction

scale of the technology transferred. The categories of the technology are clearly indicated in Appendices 2 and 3, and implicitly in Tables 13 and 17. One of the most important points that is of concern to this study is the actual form of the technology transferred from Japan to Indonesia. The formation of the technology concerned is indicated in one of boxes of the model which consists of (1) employment of Japanese personnel in Japanese companies' subsidiaries operating in Indonesia which is basically transformed into 'human contacts' between the Japanese and Indonesian, (2) training of the local Indonesian staff in the subsidiaries, and (3) transfer of various documents. The three forms of the technology transferred were found by this study which strongly confirmed and supported a contention put forward by studies of various scholars such as Komoda (1986), Kojima (1975 and 1978), Saito (1985), Robock and Simmonds (1983), Kadia and Bhagat (1988) as discussed in Chapter 3 in general and particularly points 3.6 and 3.7.

(2) Technology transfer process:

The process of transferring technology is really concerned with (a) mechanisms or modes used by donor country to transfer internationally their technology, (b) motives or reasons of the technology donors to transfer their technology, and (c) barriers experienced in the transfer process. Again all of these points have already been established in the case studies as found in Chapters 4 and 5. According to this study that the reasons of the Japanese investment and/or technology

transfer to Indonesia are similar to arguments as discussed by many writers such Grewlich (1980), Sekiguchi (1979), Kitamura (1976), ILO (1981), and Kojima (1978) in Chapters 3.4, 3.5 and 3.6. The same kind of confirmation was also found with respect to barriers to transfer. The barriers, as identified by this study, include the barriers of the Japanese to transfer their knowledge, compatibility of the technology with Indonesian domestic sociocultural norms, language barriers, control over the rate of transfer, Indonesian government regulatory measures and policies, infrastructure inadequacy, isolation of the Japanese at the work place. All this points are basically support various contentions as put forward by experts such as Cook (1974), Singh (1983), Redrigues (1985), Sirgy (1985), Gee (1979), Lasserre (1982), Heineman (1985), Kosenko and Samli (1985) as discussed in Chapter 3.8. With regard to the mechanisms of the transfer this study also found that joint venture and foreign direct investment have been used by the Japanese as their transfer mechanisms. A close examination of various studies, such as Robock and Simmonds (1983), Heineman et al. (1985), Lee (1984), Tsurumi (1976), Yoshino (1975), Ozawa (1981) as discussed in Chapters 3.6 and 3.9. These mechanisms are indicated in the JJSF model (Figure 18).

(3) Moderating variables:

Japanese technology transfer to Indonesia is expected to have effects on the skill formation of the Indonesian employees. Although the effects of the

technology transfer on employment and financial related issues are widely studied, there have been very few studies undertaken concerning the effects of technology transfer on the improvement, development and formation of the skills, especially managerial skills, of the local managerial staff working the subsidiaries which are involved in the transfer activities (see discussion in Chapter 3.2 and statement made by Krbavac and Stretton, 1988; Siggel, 1986; and Jervis and Sinclair, 1974). In view of this fact, in essence this study looks at two key issues as established in the TTSF model, technology transfer, and skill and its transfer.

While the issues of technology transfer are widely discussed and understood, there has been very little discussion and understanding about skills, and its relationship to technology transfer. This is understandable because as stated by Kioke "generally speaking, research about skill is, both theoretically and empirically, quite difficult" (Kioke 1983, p.4). Wright and Russel argued that skills transfer is important in technology transfer, as it "is an area where misunderstanding is easy and communication is difficult, especially in cross-cultural situation (Wright and Russel 1987, p.78).

In the TTSF model, it is shown that the effects of technology transfer on skill formation are moderated by various variables. The variables included in this study are (1) organisational size, (2) educational background of of the respondent, (3) host government's regulations, (4) type of industry, and (5) level of

technological sophistication. The role of each of these variables to moderate the skill transfer process is discussed in Chapter 5.4 where it is found among the variables that it appears that variables (1) and (2) have the most significant effect on the transfer process in terms of skills formation, while others played limited role.

(4) Type of skill acquired:

The skills in which the technology transfer is expected to be formed are managerial skills which consist of Japanese specific managerial skills, functional or professional managerial skills, and general managerial skills which cover conceptual, human and technical skills. The amount of managerial skills acquired by the Indonesian managerial staff is indicated in Table 12 in which by and large the Indonesian staff have not acquired 'very many' Japanese specific managerial skills and conceptual skills.

(5) Modes of training:

To accelerate the acquisition or formation of the skills as identified above, there are various modes of training are used. Three most commonly and effectively used are on-the-job and off-the-job training, and short course programs such participating in seminars and conferences. A detailed finding of these modes can be seen in Table 18.

Having experienced the proposed general model as indicated in Figure 7 as the basis of creating a model of technology transfer and skill formation (TTSF model), it is clear that the TTSF in fact supports and confirms the basis

and arguments in which the proposed general model has been created. Although there are some components in the model such as the mechanisms of transfer used, types of moderating variables considered, and modes of training which are different, the difference does not reduce the significance of the inclusion of the variable. In fact the TTSF model has made clear the importance of each respective variable or the role of them in the technology process and in the relationship between technology and skills.

5.6.2 The importance of the TTSF model

The creation of the technology transfer and skill formation (TTSF) model has provided answers to various questions raised in this study. The model has been built into it a totality concept which contains various key elements of the technology and skill transfer process.

The findings of this study, as reflected in this model, should explain, on one hand the willingness of the technology transferor to transmit and implant skills, expertise, and knowledge associated with the transferred technology, and the amount of skills, expertise, and knowledge acquired by the local employees (regarded here as technology recipient), and on the other hand, it shows the degree of preparedness and efforts on the part of the technology recipient to acquire the available skills, expertise, and knowledge brought in as the result of the technology transferred.

The TTSF model clearly depicts many sets of involvements in the transfer process, in this case, (1) Japan as technology transferor and Indonesia as technology transferee,

- (2) Japanese personnel (executives, managers, directors, and supervisors or experts) and Indonesian personnel (managers, directors, and many others),
- (3) type of technology and skills transferred, and
- (4) contribution made, and difficulty experienced by, both the Indonesian and Japanese personnels in the transfer process.

This study and this model have exposed a great deal of issues concerning technology transfer and the result of the transfer as well as views expressed by those involved in the technology and skill transfer process, especially the Indonesian personnel, which each respective party concerned with the process should take account of.

Considering all the issues and involvement of various personnels or parties in the transfer process, the model in holistic concept behind it, presents and illustrates the interdependence between variables considered in this study. All the variable included in the model are considered as important because of their contribution to the success and failure of (1) the technology and skill transfer process, (2) the business operations of the companies involved in the process, and (3) the benefits gained by the technology recipient. These points suggest not only the importance of the study but also the appropriateness of the model developed. The appropriateness of the model reflects the importance of the technology and skills to both sides of the transfer process. The appropriateness itself should be assessed on the basis of numerous factors such as the prevailing environments and conditions of the technology recipient.

6. C O N C L U S I O N

The research reported in this study was prompted by the observation that, despite the importance of technology transfer, the effect of technology transfer on the skill formation of the technology recipient's employees had not yet been received the attention it deserved in academic literature. The analyses and findings of this study have shed light on the nature and practice of Japanese technology transfer and business activities in Indonesia. Both sides of the transfer process, the Japanese and the Indonesian, should now be able to examine very closely whether the nature of the technology transferred and the business management practices of Japanese subsidiaries serve the interests of both sides, as well as what should be done by both sides, and in particular by Indonesian partners and the Indonesian government, to improve the environment so as to make it conducive to maximizing benefits in the transfer process, especially the managerial skill formation of Indonesian employees. All these questions have been addressed by this study.

The major findings of this study are:

1. Type and characteristics of technology transfer

- (1) When the technology transferred to Indonesia was compared to existing technology being used in Indonesia, the transferred technology was considered by the Indonesian partners to be "very sophisticated and up to date", especially the technology transferred by large companies in the fields of chemical, automobile, and metal related technology. The same technology was

only "conventional or fairly well established technology" when compared to the technology being used in developed countries.

- (2) When the technology transferred to Indonesia was examined more closely, it was found that, the technology is typified by medium rather than large scale. Furthermore, it was believed that the transferred technology was 'old' or 'second best' technology compared to technology used in the parent company in Japan.
- (3) The technology transferred to Indonesia required a great deal of modification before it was utilised in Indonesia. The modification was necessary, due to differences in the socio-cultural, political and economic systems and values between Indonesia and Japan, and Indonesia's presumed lower technological expertise than Japan. This modification has been supported by the involvement or participation of the technology transferee at both management and production levels. The concept of 'involvement or participation' suggests that there is human contact between those involved in the transfer process.
- (4) The Japanese subsidiaries actually transferred technology through three main mechanisms: (1) the employment of Japanese experts or staff in the subsidiaries; (2) the provision of training to local employees; and (3) the transfer of documents in the form of plant layouts, process designs, product specifications, patent or trademarks, blueprints, computer software, and instruction manuals.

2. Managerial Skills Acquired

It was advanced in this thesis that the amount of managerial skill acquired by local managerial staff can be seen as indicative of the effectiveness of the technology transfer process. This study found (see Table 12) that

- (1) Only 25% of respondents claimed to have acquired 'very many' Japanese specific managerial skills, and it means that the majority of Indonesian managerial staff have acquired 'very few' Japanese specific managerial skills. Some of the many reasons were: (1) the company provided no management training skills, either on-the-job or off-the-job, to managerial staff in order to develop their management skills; (2) there was a very limited application of the Japanese management system within the company; (3) there was limited interaction and contact between the Japanese and the locals; and (4) the Japanese place greater importance on the production line than on working procedures in the head office where most managers work.
- (2) In contrast to Japanese specific skills, 56% of Indonesian managerial staff believe that they have acquired 'very many' functional skills.
- (3) With respect to general managerial skills, most Indonesian managerial staff estimate that they have not acquired 'very many' conceptual skills and technical skills, the figures being only 27% and 37% respectively. However, 56 % of local managerial staff claim to have acquired 'very many' human skills.
- (4) Those Indonesian managerial staff studied stated that they had acquired not 'very many' of the conceptual

skills, because the company executives (1) provided very limited access to and opportunity for managerial responsibility, (2) provided no specific management program, (3) allowed no direct involvement in the top executive strategic decision making process, for local managerial staff, and (4) the weak position of the Indonesian partners, including the Indonesian government, which does not allow the locals to have a greater 'say' in the management and running of the company.

3. Role of Moderating Variables

The amount of managerial skills acquired was examined with respect to the five moderating variables mentioned above.

- (1) In terms of the organisational size of the company, it was found that 37% of the companies studied were 'large', 56% were 'medium', and 6% were 'small'. Those who work in 'medium' sized company tend to acquire more managerial skills than those in 'small' and 'large' companies. This is especially the case for the acquisition of Japanese specific managerial skills.
- (2) In terms of the level of educational background, that those who have postgraduate qualifications have acquired 'very many' Japanese specific managerial skills, while those with high school certificates and undergraduate qualifications have only acquired 'very few' skills. In the case of functional skills, those with postgraduate qualifications have acquired the same level of skills, but those with undergraduate qualification have scored better by having acquired

`very many' functional managerial skills. However, those with HSC qualifications score poorly by only having acquired `very few' managerial skills.

(3) With regard to the type of industry, it was found that manufacturing related industry provided a greater amount of skills to local employees than non-manufacturing related industry. Within the manufacturing industry, that those working in chemical and pharmaceutical industries have acquired `very many' managerial skills compared to those working in other industries, except for conceptual skills. The second group of industries which had the largest amount of managerial skills acquired, were the rubber and plastic products industries, while the least amount of managerial skills were acquired by those who work in construction and engineering industries. This study concluded that the chemical and chemical product industry is the only industry which provided `very many' Japanese specific managerial skills, functional skills, and managerial skills (human and technical skills) to Indonesian managerial staff.

(4) In terms of the level of the sophistication of technology, 63% of technology transferred to Indonesia was classified as `very sophisticated' technology. However, this study found that the level of sophistication of technology provided no differential amounts of functional and general managerial skills acquired by local managerial staff. Difference was only found in the acquisition of Japanese managerial skills.

(5) With regard to host government's regulations, 87% of

interviewees stated that the regulations did not compel the employers / foreign companies to provide training to local employees, including Indonesian managerial staff. This was despite the fact that all of the companies (see Table 15) surveyed knew of the existence of such Indonesian governmental regulations. The interviewees believed that the governmental regulations were 'not significant' in motivating the companies to provide management training, and hence skill transfer. This finding implies an apparent weakness in the Indonesian government's regulations.

In view of the amount of the skills acquired, it is clear that the organisational size and the educational background of the managers, and the type of industry, are very much associated with the technology and skill transfer process. In other words, these variables do play role in the skill formation of the Indonesian employees.

4. Modes of Skill Formation

Although there is apparent weakness in the regulations, Indonesian managerial staff have still managed to acquired some managerial skills since they joined the subsidiaries. The acquisition of such skills was result of various modes of skill formation, notably,

- (1) On-the-job training which includes job rotation and self development or self study,
- (2) Off-the-job training including participation in training programs held in Japan,
- (3) Attending educational educational institutions for formal education,
- (4) Participation in short course programs, such as

seminars, conferences, symposiums, up grading programs, (5) The counterpart system, that is, working at different companies to acquire skills, experience and other expertise. Not all the Indonesian managerial staff in this study acquired their skills through all of these modes, because (1) the company often did not have a written and formulated training programs (see Table 18 and Appendix 1), and/or (2) the company had not fully implemented its management training programs.

It was often expressed by Indonesian managerial staff that they were not satisfied (a) with the amount of skills acquired by them or provided by the the company so far, (b) with the way training programs were designed and carried out, and (c) with the way Japanese system of management practices were implemented. Nonetheless, the Indonesian managerial staff did concede that their association with Japanese subsidiaries had, among other things, provided them with (1) some knowledge of the practices of Japanese system of management, (2) some knowledge of how a company can be run effectively to achieve the company's strategic mission, (3) some knowledge of how to motivate staff to work harder and have the staff involved in their work within a framework of shared responsibility, group achievement among employees, and a sense of belonging to the company, and (4) self transformation, that is, a transformation of Indonesian working behaviour from that of a lack of disciplin to one of active, very disciplined and result-oriented work behaviour.

Finally, considering the findings of this study, it can be concluded that

- (1) Japanese subsidiaries have, as was believed by the Indonesian managerial staff interviewed, transferred and formed very limited or a small amount of practical managerial skills and expertise to Indonesian managers and directors, especially the Japanese specific managerial skills and conceptual skills. In view of this, it appears that the Japanese subsidiaries have not yet been prepared to develop to the fullest extent Indonesian technological expertise. This is understandable, because (a) technology has been regarded not only as "value free" knowledge where everyone is interested in possessing it, but has also been utilised as one of the most important production inputs and strategic commodities and as an important ingredient in developing a company's competitive advantage. The importance of technology can be seen when the technology is used as a bargaining and controlling tool by those who own it, and (b) Indonesia's weak bargaining position and lack of technological innovativeness.
- (2) Global strategic decisions of Japanese MNC headquarters in Japan affect many countries, including Indonesia, involved in Japanese technology transfer. There is no clear evident to support that the Japanese MNCs have treated Indonesia very much different from other recipients of Japanese technology.
- (3) Japanese subsidiaries, by and large, have provided local managerial staff with some understanding concerning the management and running of the company. The point was particularly obviously reflected in the

responses given by most Indonesian managerial staff when they were asked whether 'having had experience working in this company for quite some time, would you be able to run and manage this company?'. A majority of the staff responded affirmatively to the question and they were confident that they could perform as well if not better than the Japanese executives.

Finally, one of the most important findings of this study is the establishment of a new model of technology transfer and skill formation. This new model depicts how technology transfer affects the development of skills, knowledge and expertise of the population of the technology recipient. This Indonesian-Japanese case study has found that the effect, in terms of managerial skill formation, is only **moderate** and not **very** significant.

Policy Recommendation

This study has found that the existing Indonesian government policy and regulations have, partly, motivated Japanese technology transfer to Indonesia because the policy and regulations are perceived as '**weak**', and incapable of compelling the technology donor (the Japanese) to comply with the nature and spirit of the policy and regulations. This is, however, understandable, because the policy and regulations are a reflection of the country's political and cultural complexion, resources endowment, level of economic activity and general development strategy. A country rich in resources and more advanced in technological terms tends to be more selective with regard to technology transferred than is one which is less so. Another part of motivating Japanese technology transfer to

Indonesia is the abundant cheap resources in Indonesia and the opportunity of catering to the Indonesian local market.

Considering the above points, it is obvious that the Indonesian partners, both companies and government, have limited and weak control over the technology and skill transfer process. This is despite the fact that the Indonesian partners have a key bargaining strength in the attractive access to its potential national market and abundant cheap resources in having a greater say not only in running, but also in controlling a company and in the technology and skill transfer process. However, the reality is that Indonesian managerial staff have not acquired very many managerial skills, and the Japanese seem very reluctant to transfer their technology and skills to Indonesia, the host country.

In view of all the above, this study recommends some policy developments relevant to the technology and skill transfer process:

1. **The Provision of Taxation Scheme.** The case studies indicated that Indonesian managerial staff believed that they had not been given proper management training to enable them to acquire various managerial skills. It must be realised that training is expensive and is costly to the company which provides such training program for its local employees. Although training by itself may not be the whole solution to the skill transfer problem, it needs to be co-ordinated with other actions to bring about necessary changes. Also, management training is not the only tool available for managerial skill formation. Indeed, it is unlikely to be

successful unless accompanied by other initiative in the companies and by the manager concerned.

At the same time, skills bring both internal and external benefits. There are those that accrue to the company while the trained personnel is still an employee (internal benefits) and those that fall to other companies or to the employee when he/she leaves the training company (external benefits). Recognising the importance of training in skill formation of local employees, the Indonesian government should be prepared to compensate foreign companies for the costs involved in providing training to locals. One such compensation is by providing taxation schemes in the form of levy-grant or levy-exemptions, through a direct subsidy to the company which provides training, or through fiscal incentives or tax concessions to up set such training.

2. **The Development of Skill Formation Concept.** One impression obtained from this study is that the Indonesian government has not given very high priority to skill formation, especially managerial skill formation for domestic employees. This has been reflected in its unclear direction and guideline of how skill formation among local employees should be developed in conjunction with the operations of foreign companies and local training institutions. This also suggests that at present both quantitatively and qualitatively, skill formation training programs are inadequate in Indonesia. In light of this, the Indonesian government should develop a public policy which encourages the development of skill formation

concepts and programs as part of a wider effort to increase the number of Indonesian skilled employees.

3. **Control of the Company.** The study exposed the fact that the limited transfer of skills to locals has been, to some extent, due to a lack of control of the company by local partners and/or personnel. In view of the current situation, the Indonesian government should re-examine its stated policy in terms of 'equity participation' and this should be extended to the management and running of the company according to the proportion company shares held. In this respect, local personnel should be given the same opportunities as the Japanese or expatriates to fill top key management company positions. The opportunity by local staff to fill top key management positions will guarantee them to have wide exposure to the management and administration of the company, which in turn it will provide ample opportunity to acquire managerial skills.
4. **Stronger Law Re-enforcement.** The case studies have indicated that, by and large, the Japanese have recognised the presence of Indonesian government's regulations to regulate foreign companies' operation in Indonesia. However, the regulations seem to have little or no significant effect on the technology transfer process with respect to managerial skill formation. No clear facts suggest why this has happened. However, it can be argued that it has been due to various reasons, such as the Indonesian government's weak administrative control, a lack of a strong governmental law re-enforcement agent, a lack of government-specific

business codes of conduct to regulate the operation of foreign companies and technology transfer. These reasons should be considered as the basis of the Indonesian government looking further at its existing legal framework for foreign investment in Indonesia.

5. **Change of Transfer Mechanism.** The case studies found that it had become Japanese policy to invest in Indonesia on a joint venture basis. Joint ventures were characterised by package deals. This has been made possible because the Indonesian partners do not have a very strong bargaining position in the venture process and have to accept what is offered by foreign partners. A joint venture arranges for the provision of capital, management, know-how, raw material, and technical assistance to both partners. An analysis of the activities of the joint ventures indicates that such an arrangement provides greater access for Japanese partners to operate freely in Indonesia with unclear responsibility of developing technological expertise among its Indonesian partners. If this is set to continue, the Indonesian partners will not be able (a) to have control of their company, (2) will depend continuously on the Japanese, and (3) to develop their own technological expertise. The latter point was confirmed by the fact that there has been very few of Japanese subsidiaries studied undertake research and development (R&D) activities in Indonesia, either independently or in collaboration with local research institutions. Had there been R&D activities undertaken in Indonesia, Indonesia would benefit from spin-off

effects for its scientific community, and could stimulate local companies and government to develop their own R&D capabilities in given areas. When this happen, technology transfer will have a positive impact of skill formation on local employees. In contrast with the absence of these activities, it could be argued that technology transfer will contribute very little to technological capability development in Indonesia. However, this study does not suggest that the presently observed patterns are unmutable but rather that they may, in fact be alterable.

In the light of the above, the Indonesian government should design policies and regulations as well as an environment which provides encouragement, in the form of such measures as monetary incentives and/or infrastructure provision, to foreign companies to carry out such activities in Indonesia, because regulations, infrastructure and environment are basic determinants of the effectiveness of technology transfer (Mansour 1981, p.6).

Suggestions for Further Research

This research studied issues related to the effect of Japanese technology transfer on skill formation of Indonesian employees. The link between technology transfer and skill formation is quite obvious. The result of such activity is considered effective when it provides a beneficial effect to the skills and technological expertise of the employees of the technology recipient through the skill transfer process.

The available literature argues that very few studies

in the social sciences have clearly identified the essential ingredient of skills in the context of technology transfer, business activities, and economic development. Added to methodological difficulties is the dynamic nature of skills, for they undergo a continuous process of transformation induced by changes in technology. Furthermore, skill is a hard concept to grasp, as is its transfer process (Odaka 1983, p.12). This is particularly so because skill transfer is an area where misunderstanding is easy and communication is difficult, especially in cross-cultural situations (Wright and Russel 1975, p78). Japanese foreign investment is not only involved in the transfer of capital, technology and management systems, but also involves the transfer of culture, that is, ways of thinking, behaviour patterns, and values. Japanese companies practise a very unique system or mode of thinking compared with the management systems found in companies other than those from Japan (Yamada 1981, p.1). This study has not looked at this cultural dimension of Japanese technology transfer to Indonesia.

The performance of this study has revealed some important information concerning Japanese technology transfer activities in Indonesia. At the same time this study also leads invariably to more questions than answer which thus provides opportunity for further research.

In view of the above analysis, the study recommends further research in the following areas:

1. Effective and successful technology and skill transfer is determined by various factors, one of which is the cultural factor. This factor has not been examined in

great detail in important the content of the skill formation process. Therefore, it is necessary to examine the role of cultural factors in the technology transfer process considering some similarity in cultural practices between Japanese and Indonesia. In this one should keep in mind of this study's literature review (see Kedia and Bhagat 1988 and Moran and Harris 1979) which pointed to difficulties in conducting such research.

2. This case study found that the Japanese are in control of the running and management of their subsidiaries or joint ventures in Indonesia. Most important strategic decisions of the companies are made by Japanese in consultation with their headquarters or parent company in Japan, and local personnel have only very limited involvement in the decision making process. It is the judgement of this researcher that the parent company in Japan has a very significant involvement in the subsidiary's decision making process. This judgement opens the door to further research to find out not only (a) the degree and nature of involvement in the decision making process, as well as control, by the headquarters in Japan, but also (b) the involvement and control of local partners. This field of research is important for local partner and the government in understanding so that they would be able to know how, and with whom, they might have to conduct more effective and productive business arrangements and negotiations.
3. These case studies have argued that in terms of business activities, Japanese personnel have learned more than

local employees. This is especially true in the case of junior Japanese managerial staff sent from the subsidiaries office headquarters in Japan. In this situation, it would be an interesting academic exercise to conduct a comparative study to examine what the Japanese have learned from their operations in the host country. What amount and types of skills have been acquired by the Japanese during their involvement in the subsidiary's business operations.

4. This study has demonstrated the characteristics of technology transferred by Japanese to Indonesia, and the amount and types of managerial skills transferred by the Japanese to Indonesian employees. It is, therefore, easy and fair to appreciate, or blame, the contribution that has been made by the Japanese to Indonesia. However, it is even clearly more fair if such contributions can be compared to the contribution of other foreign companies in Indonesia. This study has, therefore, led to further comparative research that may be conducted to compare the various contributions, in terms of skill formation, among foreign companies operating in Indonesia.
5. This study has exposed the direct effect of Japanese technology transfer to the skill development of Indonesian employees working directly in Japanese subsidiaries. There is also indirect effects of technology transfer called "spin-off effects" or "spill-over effects" of such technology transfer. These effects occur in the case of many local managers or staff who leave the Japanese companies after working for quite

some time and move to other local companies who bring with them all the knowledge, skills and expertise to those other companies. This study proposes another new field of further research to see the significance of these spin-off or spill-over effects.

6. The study has extensively examined the practices of the Japanese management system in Japan's Indonesian subsidiaries. The study also found that there was a mixed management system, combination of Japanese and Indonesian practices, which was applied in the subsidiaries. During the interviews with Indonesian managerial staff, they were asked about elements of Indonesian management practices. Although the results of the Indonesian management practices were still very limited, the researcher was left with the impression that Indonesian management practices were implemented and played role in the running and management of the Japanese subsidiaries in Indonesia. In light of this study's findings, the researcher recommends two fields of further research: (1) to identify the characteristics and nature of the elements of Indonesian management system which this researcher believes to contain Indonesian socio-cultural and system values that will lie between the Japanese and American systems of management, and (2) to find out the significant and role of Indonesian management practices in the running and management of the Japanese subsidiaries, as well as in other foreign companies operating in Indonesia.

EPILOGUE

The U.S. government and congressional reports (Yamada

1981) on Japan call attention to, and strongly emphasize, the superiority of the Japanese system of management. This superiority has been reflected in the strong growth of the Japanese economy, technological development, and industrial and business expansion world-wide. This suggests that the Japanese system of management is considered as one of the factors that gives Japanese goods considerable price and non-price international competitiveness in trade, and is also criticised as being the source of the international friction that Japan produces. Thus the Japanese system of management and technology transfer is both criticised and praised.

This is more or less what is happening with Japanese technology transfer to Indonesia, where Japanese investment and business operations are praised for their contribution to Indonesian economic and business development, but at the same time criticised for its limited contribution to the formation and development of skills and technological expertise of local employees. This may suggest that in business, as in the international technology transfer process, both sides can gain mutual benefits. However, often only one side will gain greater benefit than the other side because of "the bargaining process for such introduction [of technology] has often been in favour of the foreign firms" (Purcal 1981, p.108). This imbalance of benefit gained often occurs which leads to many who question the appropriateness of foreign technology transfer to host developing countries, because, as has been argued by Inkster, "it does not serve as [an] efficient instrument of development" (Inkster 1980, p. 88).

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APPENDIX 1

THE CHARACTERISTICS OF CASE STUDIES

CASE STUDIES	Type : of Industry	:Type of :Products/Serv: :Produced	:A - Assistant :M - Manager/ :D - Director	: Number : of : Employees	:Controlling : :Partner : :or majority : : Program	: Formulated : Training
1. P.T. POLEKAO INDONESIA CHEMICALS, THE POLEKAO GROUP, (KAO CORPORATION, JAPAN)	: Chemicals	: variety	:D-Drs.Syahrir Sjafruddin	: 300	: Japanese	: T & M
2. P.T. KRAMA YUDHA TIGA BERLIAN MOTORS (MITSUBISHI MOTORS)	: Automobile	: variety	:M-Drs.E.Rizal Dahlan	: 373	: Japanese	: T & M
3. P.T. UNICOR PRIMA UTAMA, THE INDOMOBILE GROUP, (SUZUKI and MAZDA CORPORATIONS, JAPAN)	: Automobile	: variety	:D-Mr.Frans Wibowo A.D-Mr.Djohan Widjaja	: 20,000	: Japanese	: T only
4. P.T. MESIN ISUZU INDONESIA (ISUZU CORPORATION, C. ITOH & CO.LTD, TOYO MENKA KAISHA LIMITED, JAPAN)	: Car Engine	: one	:A.D-Drs. Fachruddin Latief	: 104	: Japanese	: T only
5. P.T. BRIDGESTONE TYRE INDONESIA (BRIDGESTONE CORPORATION and MITSUI & CO., LTD)	: Automobile tyres	: variety	:D-Mr.Charles Soedargo	: 2,113	: Jap = Indon:	: T & M
6. MITSUI & CO., LTD	: Trading	: variety	:A.M-Mr.Hady Soerjanto,SH A-Mrs.R.Wati	: 30	: Japanese	: none
7. P.T. INDONESIA SYNTHETIC TEXTILE MILLS (TORAY INDUSTRIES INC., and MITSUI & CO LTD., JAPAN)	: Textile	: variety	:D.Drs.BK*	: 1,500	: Japanese	: T only
8. P.T. UNILON TEXTILE INDUSTRIES (TOYOBO CO.LTD,JAPAN,and C.ITOH & CO.LTD,JAPAN)	: Textile	: variety	:D-Drs.S.Sinaga	: 1,260	: Japanese	: T only
9. P.T. EASTERTEX (TORAY INDUSTRIES, INC., JAPAN)	: Textile	: variety	:M-Mr.BS* M-Mr.MB*	: 754	: Japanese	: T only
10.P.T. CENTURY TEXTILE INDUSTRIES (TORAY INDUSTRY, INC., KANEMATSU-GOSHO INC, TOKAI SENKO CO,LTD, KURABO INDUSTRIES LTD., JAPAN)	: Textile	: variety	:M-Mrs.Poppy Rhijandini,SH M-Mr.D.Prayitno	: 908	: Japanese	: T only
11.P.T. TIGA MANUNGAL SYNTHETIC INDUSTRIES (MITSUI & CO. LTD., JAPAN, and ICHIMURA SANGYO CO. LTD, JAPAN)	: Textile	: variety	:M-Drs.Pawardi	: 1,046	: Japanese	: T only
12.P.T. CAHAYA INABA ELECTRIC (INABA ELECTRIC WORK CO. LTD., JAPAN)	: Electronic	: variety	:M-Mr.Yulius Riil:	97	: Japanese	: T only
13.P.T. NIPPON STEEL CONSTRUCTION INDONESIA (NIPPON STEEL CORPORATION, JAPAN)	: Construction	: services	:M-Mr. Ir. Budi Santoso	: 106	: Japanese	: T only
14.P.T. INDONESIA ASAHAN ALUMINIUM (NIPPON ASAHAN ALUMINIUM CO.LTD, JAPAN)	: Aluminum	: variety	:M-Mr.Taufif Firdaus,BSc M-Drs.I.Antara	: 2,703	: Japanese	: T only
15.P.T. SEMEN NUSANTARA (MITSUI & CO. LTD., JAPAN and ONODA CEMENT CO. LTD., JAPAN)	: Cement	: one only	:M-Mr.Soetrisno, SH.	: 1,007	: Japanese	: T only
16.P.T. MEIJI INDONESIA PHARMACEUTICAL INDUSTRIES (MEIJI SEIKA KAISHA LTD., JAPAN and NOMURA TRADING CO.LTD., JAPAN) :	: Medicine	: variety	:M-Dr.Budiana	: 362	: Japanese	: T only

Explanation: variety : the company produces more than two different products

M : management training

T : technical training

= : equal

* : the person declines his name to be published

APPENDIX 2

THE ACQUISITION OF MANAGERIAL SKILLS BY THE LEVEL OF SOPHISTICATION OF THE TECHNOLOGY TRANSFERRED TO INDONESIA COMPARED WITH TECHNOLOGY BEING USED IN DEVELOPED COUNTRIES

TYPE OF MANAGERIAL SKILLS ACQUIRED BY INDONESIAN MANAGERIAL STAFF	THE TRANSFERRED TECHNOLOGY COMPARED TO THE TECH. USED IN DEVELOPED C' TRY		
	:Very Sophisticated or High Technology (3,13,15) (the numbers referred to here are the numbers of case studies)	:Conventional or Fairly well established technology (1,2,3,4,6,7,8,10,11,14,16):	: Low Technology or old technology (9,12)
a) Japanese Specific Managerial Skills	: VF,VF,NVM (Very Few)	: VM,VM,VF,NVM,NVM,VF,VM,VF VF,NVM,VM (Not Very Many)	: VF,VF (Very Few)
b) Functional or Professional Managerial Skills	: VM,NVM,NVM (Not Very Many)	: VM,VM,VM,NVM,VM,VM,VM NVM,VM,VF,VM (Very Many)	: VF,NVM (Very Many)
c) General Managerial Skills:			
- Conceptual Skills	: VM,VF,VM (Very Many)	: VM,VM,VM,NVM,VM,VM,VM, NVM,NVM,VF,VF (Very Many)	: NONE,VF (Very Few)
- Human Skills	: VM,VF,VM (Very Many)	: VM,VM,VM,NVM,VM,VM,VM NVM,NVM,VF,VM (Very Many)	: VF,VF (Very Few)
- Technical Skills	: NVM,NVM,NVM (Not Very Many)	: VM,VM,NVM,VM,NVM,VM,VF NVM,VM,VF,VM (Very Many)	: NVM,NVM (Not Very Many)

N o t e s : This table was developed based on Table 12

VM :Very Many
NVM :Not Very Many
VF :Very Few
NONE :None At All

APPENDIX 3

THE ACQUISITION OF MANAGERIAL SKILLS BY THE SCALE OF THE TRANSFERRED TECHNOLOGY TO INDONESIA

TYPE OF MANAGERIAL SKILLS ACQUIRED BY INDONESIAN MANAGERIAL STAFF	THE SCALE OF TRANSFERRED TECHNOLOGY TO INDONESIA		
	: LARGE SCALE : MEDIUM SCALE : SMALL SCALE		
	(2,4,5,13,14,15)	(1,3,7,8,9,10,11,12,16)	(6)
	(the numbers referred to here are the numbers of case studies)		
a) Japanese Specific Managerial Skills	: VM,NVM,NVM,VF,NVM,NVM	: VM,VF,VF,VM,VF,VF,VF	: NVM
		VF,VM	
	(Not Very Many)	: (Very Few)	: (Not Very Many)
b) Functional or Professional Managerial Skills	: VM,NVM,VM,NVM,VF,NVM	: VM,VM,VM,VM,VF,NVM,VM	: VM
		NVM,VM	
	(Not Very Many)	: (Very Many)	: (Very Many)
c) General Managerial Skills:			
- Conceptual Skills	: NVM,VF,VM,VF,VF,VM	: VF,VF,VF,VM,NONE,NONE	: VF
		VF,VF,VF	
	(Very Few)	: (Very Few)	: (Very Few)
- Human Skills	: VM,NVM,VM,VF,VF,VM	: VM,VM,VM,VM,VF,NVM,NVM	: VM
		VF,VM	
	(Very Many)	: (Very Many)	: (Very Many)
- Technical Skills	: VM,VM,NVM,NVM,VF,NVM	: VM,NVM,VM,VF,NVM,NVM	: NVM
		VM,NVM,VM	
	(Not Very Many)	: (Not Very Many)	: (Not Very Many)

N o t e s : This table was developed based on Table 12

VM : Very Many
 NVM : Not Very Many
 VF : Very Few
 NONE : None At All



23rd August, 1990

To Indonesian Government Officers and Company's Chief Executive and Managers
Re Participants in a survey of skill formation in Indonesian Companies

To Whom It May Concern

This letter introduces to you Mr. Z. H. Frinces, as doctoral researcher from Kalimantan working in the Department of Management, University of Wollongong, Australia.

Mr. Frinces is now conducting his research relating to the issues of technology transfer, management training and management skills formation. This research intends to answer the question, 'to what extent does technology transfer affect the skill formation of the host country's employees?'

The objective of Mr. Frinces' research is to answer this and to study the effect of the technology transfer on the development and formation of management skills of the local workers by focusing on three aspects, (1) the type or nature of the technology transferred, (2) the type of management skills formed, and (3) the management training conducted to acquire those management skills.

This field of research is very important. Not only is this research aimed at developing our understanding of technology transfer, the findings of this research should also be very useful to those framing policy in Indonesian companies and Government.

An important aspect of this study will involve Mr. Frinces collecting data and information from various Government departments and selected groups of Japanese firms in Indonesia. I would be most grateful if you could allow him to spend some time in your department, office, or firm to discuss these issues.

Mr. Frinces' work is of considerable importance and will be to the long-term benefit of individual companies and the Indonesian economy. I hope you can assist him with his work.

Yours sincerely,

Professor Julian Lowe,
Head,
Department of Management.



September 17th, 1990

Re: Participants in a survey of
Skill Formation / Technology Transfer

To: Japanese Chief Executives & Managers,
Indonesian Managers & Directors
Jakarta, Indonesia.

Dear Sir,

The arrival of this letter is to invite you to participate in a research opportunity of exploring a new knowledge in the area of technology, business, and management. The title of this research is 'the effect of technology transfer to Indonesia'.

Considering the existence and nature of your company's operation, you are selected as one of important respondents of this study.

Your participation in this study could help you and your company to improve the working effectiveness and the increase in productivity, and at the same time assisting the Indonesian government to improve its economic and foreign investment policies for developing better environments for its industrial and business development.

Please be assured that these data will only be used in the aggregate and that your company and your personal participation in this research **WILL NOT BE DISCLOSED**. The code number on this questionnaire is not related to yourself or your identity, it is only to signify the classification of your industry.

When you finish answering all the questions in this questionnaire, please send it back to me in the prepaid stamped reply envelop.

However, I would be very happy to give you a summary of this research if you are interested in it, and please fill out the space provided in the last page of this questionnaire. I would also be very happy if you allow me to have an opportunity to interview you. If you agree to this interview please contact my attached addresses in Jakarta or the Sultan's Palace in Yogyakarta.

Thank you very much for your time and co-operation in this research. I am looking forwards to hearing from you soon.

Yours faithfully,

Zein Heflin Frinces,

Doctoral Researcher,
Department of Management,
University of Wollongong, Australia.

Attached: A questionnaire

December 1st, 1990

Re: Survey and Interview

To:
.....
.....
.....

Dear Sir,

Further to my letter of 17 September, 1990 I would like to thank you for the return of completed questionnaires and for your co-operation in this matter.

I would like to make an additional appointment with you on my next visit to Jakarta on December 10, 1990. Please advise a time and date most convenient to you after December 10, 1990. I estimate the interview will require one to two hours to complete your contribution to the program.

Aregato guzaimasta, terima kasih banyak atas perhatian dan bantuan yang diberikan. Thank you,

In anticipation of your co-operation of this program, I remain.

Sincerely yours,

Zein Heflin Frinces,

Doctoral Researcher,
Department of Management,
University of Wollongong, Australia.

INTERVIEW QUESTIONNAIRE
FOR TOP EXECUTIVES

- ENGLISH

SECTION 1 : TECHNOLOGY

-
1. Where did you get your technology from ?
(Please tick an appropriate answer)
☐ From parent company in Japan
☐ From outside Japan, where: _____
 2. From what other countries did you get your technology ? _____
 3. What is the scale of the technology that was transferred to your company in Indonesia ?
(Please circle an appropriate answer)
 Small / Medium / Large
 4. What is the level of sophistication of your technology compared with other technologies used in advanced countries ? (Please tick and appropriate answer)
☐ Sophisticated and up to date technology
☐ Conventional or fairly well established and widespread in the advanced countries (medium sophisticated technology)
☐ Low and unsophisticated technology
 5. Could you indicate further the sophistication level of your technology being used in your company in Indonesia?
☐ Low technology
☐ Conventional/medium technology
☐ Very sophisticated/high technology
 6. Does your company use the same level of technology as your parent company in Japan ? Yes / No, why _____

 7. If the level of technology of your subsidiary is different from those being used in the parent company, how would you rank the following reasons in order of its importance. (Multiple answers)
☐ Differences in labour costs and skills
☐ Differences in the availability of technical staff
☐ Differences in the size of company in Indonesia and overseas / Japan
☐ Differences in the cost and availability of capital
☐ Differences in government regulations/policy for industry
☐ Differences in market potentials in the parent company's markets and the subsidiary's markets
☐ Different in market orientation
☐ Other, please specify _____
 8. At the time the technology transferred to Indonesia, how do you regard your technology compared with other technologies that are already in existence and being used by other companies operating in Indonesia ?
(Please circle an appropriate answer)
 Low technology / Conventional technology/High technology
 9. How do you rate the technology being used in your company within the industry ? Not new / extremely new

10. How do you characterised your technology transferred to Indonesia ? (multiple answers)

- ☐ Labour intensive
- ☐ Capital intensive
- ☐ High cost technology
- ☐ Low cost technology
- ☐ Japanese controlled technology
- ☐ Embodied in direct foreign investment
- ☐ Require some modification
- ☐ Require human contact
- ☐ Very much related to know-how and general industrial experience
- ☐ Strongly influenced by macroeconomic factors of the donor country/Japan
- ☐ High percentage of investment in manufacturing sector

If you wish, please make some comments: _____

SECTION 2 : TRANSFER OF TECHNOLOGY

1. Which of the following transfer mechanisms has been used by your company to transfer the technology from Japan to Indonesia ? (Please tick an appropriate answer)

- ☐ Foreign direct investment
 - ☐ Licensing agreement
 - ☐ Turnkey
 - ☐ Joint venture
 - ☐ Management contract
 - ☐ Technical assistance agreement
 - ☐ Other, please specify what ? : _____
- Who initiated the transfer ? : _____

2. Having experienced of transferring technology from Japan to Indonesia, in your opinion, which of the mechanisms of technology transfer is most appropriate and effective ? Why ?

- ☐ Foreign direct investment
 - ☐ Licensing agreement
 - ☐ Turnkey
 - ☐ Joint venture
 - ☐ Management contract
 - ☐ Technical assistance agreement
 - ☐ Other, please specify what ? : _____
- Why ? : _____

3. How is the technology actually transferred? (multiple answers)

- ☐ Through staff training
- ☐ Through transfer of documents
- ☐ Through employing foreign staff /expert
- ☐ Other, please specify: _____

4. What types of documents were provided by the Japanese parent company to the Indonesian subsidiary ? (multiple answers)

- ☐ Plant layouts
- ☐ Process designs
- ☐ Product specifications
- ☐ Patents or trademarks

- ☐ Blueprints
- ☐ Computer software and programs
- ☐ Instruction manuals
- ☐ Others,specify:_____

Please provide your comment:_____

5. Has your parent company transferred its technological expertise to its subsidiary in Indonesia ? (Please circle an appropriate answer)

Yes/no/don't know,
why?:_____

6. Could you indicate the level of technological expertise transferred to Indonesian employees working in your firm?.

Low / Medium/ high, why :_____

7. Could you indicate the advancement of the technological expertise transferred to your Indonesian subsidiary from your parent company ?.

Not advanced / Advanced / Very advanced

8. How important is the following factors in transferring technological expertise from overseas (Indonesia) to your company?. (Multiple answers, please tick relevant reason and circle its degree of importance)

- ☐ More liberal and favourable Indonesian regulations and policies towards foreign investments and technology transfer.

Not important/Important/ Very important,why:_____

- ☐ The availability of a better educated and skilled Indonesian labour force.

Not important/Important/Very important, why:_____

- ☐ More favourable socio-economic and political environments of Indonesia.

Not important/Important/Very important, why:_____

- ☐ The current socio-economic and political environment of Indonesia.

Not important/Important/Very important, why:_____

- ☐ The size of the company organisation.

Not important/Important/Very important, why:_____

- ☐ The type of industry and product/service produced.

Not important/Important/Very important, why:_____

- ☐ The Japanese expectation to largely control and manage the company's operation

Not important/Important/Very Important

- ☐ The very large market potential in Indonesia

Not Important/Important/Very Important

- ☐ A guaranteed demand for the products produces in Indonesia

Not important/Important/Very Important

- ☐ Relatively less stringen environmental controls in Indonesia

Not important/Important/Very important

If you wish, please make your comments:_____

9. How encouraging is the current Indonesian government regulations for you to bring in new technology and skills to Indonesia from abroad?

Not encouranging/Encouraging/Very encouraging, why: _____

SECTION 3 : B A C K G R O U N D

1. What is you position in the company?: _____

2. What is your nationality: _____

3. In what year did this company (the Indonesian subsidiary) begin operation?. In year: 19_____

4. Is your firm a subsidiary of a Japanese company?

5. What is the industry classification of your company?.

(Please tick and appropriate box)

☐ a. Food

☐ b. Beverage

☐ c. Textile Mill Products

☐ d. Footwear, Apparel and other textile products

☐ e. Wood, Cane and Cork Products

☐ f. Furniture and Fixtures

☐ g. Printing, Publishing and Allied Products

☐ h. Leather and Fur Products

☐ i. Rubber and Plastic Products

☐ J. Chemical and Chemical Products

☐ k. Non-metallic Mineral Products

☐ l. Metal and Steel Products

☐ m. Non-electric Machinery, Equipment,
Instrument&Apparatus

☐ n. Electrical Machinery, Apparatus,
Appliances and Supplies

☐ o. Transport Equipment

☐ p. Other, what: _____

6. What nationality is the director or manager of the following departments or sections of your company?

(Please answer all question and give a tick in an appropriate box)

a. Personnel/Training Dept.: ☐ Indonesian

☐ Non-Indonesian/Japanese

b. Finance Dept. : ☐ Indonesian

☐ Non-Indonesian/Japanese

c. Research & Development : ☐ Indonesian

☐ Non-Indonesian/Japanese

d. Marketing Dept. : ☐ Indonesian

☐ Non-Indonesian/Japanese

e. Corporate Planning : ☐ Indonesian

☐ Non-Indonesian/Japanese

f. Legal Matters : ☐ Indonesian

☐ Non-Indonesian/Japanese

g. Export Dept. : ☐ Indonesian

☐ Non-Indonesian/Japanese

h. Transport : ☐ Indonesian

☐ Non-Indonesian/Japanese

i. Administration : ☐ Indonesian

☐ Non-Indonesian/Japanese

j. Production Dept. : ☐ Indonesian

7. What percentage of your personnel are Indonesian and Japanese at various levels of your company organization? (Please fill out the space)

Levels	!	Indonesian	!	Japanese
a. Senior/Top level Manager	!	⌘	!	⌘
b. Medium level Manager	!	⌘	!	⌘
c. Lowest level Manager	!	⌘	!	⌘
d. Shop floor Manager	!	⌘	!	⌘

What are the reasons of appointing less / more Indonesia at a particular level of management position ?:

8. How many types of products and/or services are produced by your company (the Indonesian subsidiary) ? :

- a. _____ types of products
- b. _____ types of services

Do you plan to produce other products / services, when & why ?:

9. Does the Indonesian subsidiary buy component parts or raw materials from the Japanese parent company or another company within the same group ? Yes / No

10. What proportion of raw material requirements and supplies was purchased from :

- a. Local sources of Indonesia ? : _____ %
b. The parent company ? : _____ %
c. From other sources ? : _____ %

Why most of your raw material/supplies come from that source?:

11. How is your company equity owned ?

- [] Fully owned by domestic owner, then go to question 14

- [] Owned jointly with foreign partner, then please go to the next question 12 and 13

12. If your company equity is owned jointly with foreign partners, how many foreign partners are there ?

- ☐ 1 partner/company only,

- ☐ 2 - 3 partners / companies
☐ 3 - 5 partners / companies
13. If your company equity is owned by foreign partnership, what percentage, is foreign owned ?
- ☐ Less than 10 percent
☐ 10 to 20 percent
☐ 20 to 50 percent
☐ 50 to 75 percent
☐ 75 to 90 percent
☐ Above 100 percent
14. What is the size of your company (the Indonesian subsidiary), in terms of its current capital investment in American dollar?
- ☐ Less than 0.5 million US\$
☐ 0.5 to 1.0 million US\$
☐ 1.0 to 1.5 million US\$
☐ 1.5 to 2.0 million US\$
☐ 2 to 3 million US\$
☐ 3 to 5 million US\$
☐ 5 to 10 million US\$
☐ 10 to 15 million US\$
☐ 15 to 20 million US\$
☐ 20 to 30 million US\$
☐ 30 to 50 million US\$
☐ 50 to 100 million US\$
☐ above to 100 million US\$

Do you plan to expand your operation in the future, when & why?

15. How many employees/workers are there in your company ?
- ☐ a. Small Size 1 - 200 employees
☐ b. Medium Size 201 - 500 employees
☐ k. Large Size 501 - > 502 employees

Do you plan to employ more Indonesian / foreigner in the future, how many and why ?

Yes, how many: _____

No, why : _____

Do not know : _____

After you have completed this questionnaire, please send it back to me in the prepaid stamped reply envelope.

1. Would you like to have a copy of the summary of this research ?

☐ Yes

☐ No

If YES, please write separately, or if you prefer, please write your name and address below:

2. Would you be willing to participate in an extension of this research ?

☐ Yes

☐ No

THANK YOU FOR YOUR TIME AND COOPERATION

APPENDIX 8

INTERVIEWER QUESTIONNAIRE - ENGLISH
FOR INDONESIAN MANAGERIAL STAFF

SECTION 1 : MANAGEMENT SYSTEM & SKILLS

1. Is the Japanese style of management practised in your company ? (Please circle an appropriate answer and explain why?).
Yes/No/ Don't know, why, _____

2. Which of the following Japanese management practices below are applied in your company, and to what extent the practices are implemented? (multiple answers, please tick an appropriate answer or answers and indicate their level of implementation)
- ☐ A life-time employment system
Fully / Mostly / Partly / Not at all
 - ☐ Special consideration of employees' personal welfare
Fully / Mostly / Partly / Not at all
 - ☐ A seniority-based pay system
Fully / Mostly / Partly / Not at all
 - ☐ Decision-making by consensus
Fully / Mostly / Partly / Not at all
 - ☐ Democratic and participative management
Fully / Mostly / Partly / Not at all
 - ☐ A group, rather than individual, responsibility system
Fully / Mostly / Partly / Not at all
 - ☐ Emphasis on group harmony
Fully / Mostly / Partly / Not at all
 - ☐ On-the-job training to develop the 'Company man', loyal and useful to the firm
Fully / Mostly / Partly / Not at all
 - ☐ Off-the-job training
Fully / Mostly / Partly / Not at all
 - ☐ Job-rotation to develop the generalist, rather than the specialist
Fully / Mostly / Partly / Not at all
 - ☐ Others, please specify?: _____
Fully / Mostly / Partly / Not at all
3. Which of the Japanese system management practices are applied in your company, and how many of the skills needed to apply the practices have been acquired by you? (Multiple answers, please tick an appropriate answer or answers and circle the level of each practice acquired)
- ☐ Just-in-time (JIT) skills or KANBAN technique
None at all/Very few/Not very many / Very many
 - ☐ Total quality control (TQC) skills
None at all/Very few/Not very many / Very many
 - ☐ General Management skills

- None at all/Very few/Not very many / Very many
- [] Marketing skills
- None at all/Very few/Not very many / Very many
- [] Long-term planning skills
- None at all/Very few/Not very many / Very many
- [] Labour-management cooperation (LMC) skills
- None at all/Very few/Not very many / Very many
- [] Quality Function Deployment (QFD) Skills
- None at all/Very few/Not very many / Very many

4. Could you make some comment about overall application of Japanese system of management, as you know, in this company, what do you learn from it in view of Indonesian system of management and environment? _____

5. How many of the Japanese specific managerial skills have you acquired since working with this company? (Please circle an appropriate answer)

None at all/Very Few/Not Very Many/Very Many

6. How many of the Japanese system of management-related skills have you acquired since working with this company?

None at all/Very Few/Not Very Many/Very Many

6. What type of Japanese system of management-related skills have you acquired since working with this company?, please explain: _____

7. How many the functional/professional skills such marketing, selling, accounting, finance, exporting, administrative, etc. have you acquired since you are working here ?

None at all/Very few/Not very many / Very many

8. How do you regard your managerial expertise and skills compared to other managerial expertise and skills used by other companies operating in Indonesia ?

Not advanced / Advanced/ Very advanced

9. How do you regard the management skills used in your company in Indonesia compared to other management skills used by other companies in developed countries ?.

Not advanced/advanced/Very advanced

10. Does your company always up date the managerial skills of the company's management staff to improve their work effectivity and productivity ?

Yes / No / Don't know,

how often, how ? _____

11. How many general managerial skills have been acquired by you since you joined this company?

None at all/Very few/Not very many / Very many

12. How many of the following management skills have been acquired by you before joined this company ?. (Please tick an appropriate answer and circle an appropriate amount of skills acquired)
- [] Conceptual skills
None at all/Very few/Not very many /Very many
- [] Human skills
None at all/Very Few/Not very many / Very many
- [] Technical skills
None at all/Very Few/Not very many / Very many
13. Which of the following skills that you feel you have acquired the most since joined this company ?.
- [] Conceptual skills
- [] Human skills
- [] Technical skills
14. How important is the following skills for you present job and responsibility ?
- [] Conceptual skills
Not important/importnat / very important
- [] Human skills
Not important/ important/ very important
- [] Technical skills
Not important / important / very important
15. Which of the following management skills you need to acquire and develop further in the future, and why ?
- [] Conceptual skills
- [] Human skills
- [] Tachnical skills
- [] Other, please specify: _____
16. Will you have an opportunity to develop and acquire the skill element you just identify in the future ?, if Yes or No or Don't know, why?
- _____
- _____
- _____
17. What would be the reasons why you will not get the apporportunity to acquire these management skills (conceptual, human and technical) ?.
- (Multiple answers, please tick an appropriate answer or answers)
- [] Don't have time, too busy with current work
- [] Training time is often far too long
Too condensed
How about the contents
- [] The training is often too costly
- [] Lack of training facility
- [] No relevant course available to acquire the skills
- [] Personal and family problem at home
- [] The company does not regard it as necessary & importnat
- [] I have no required qualification
- [] Other,please specify: _____
18. In the following Table 1, please indicate how these skills are developed and formed by every manager or management staff of your company by placing a tick in the bracket below.

TABLE 1

SKILL FORMATION METHODES / TRAINING MODES

What kind of training mode used to develop the following element of management skills
Please place a tick () in an appropriate bracket.

GROUP OF SKILL	METHODS OF SKILL DEVELOPMENT AND FORMATION					
	On-the-job training with guidance	Off-the-job training with guidance	Formal training (university)	Counter-part system	Learning from experience	Apprentice training
1. Conceptual Skills	()	()	()	()	()	()
2. Human Skills	()	()	()	()	()	()
3. Technical Skills	()	()	()	()	()	()
4. Just-in-time production control (Kanban technique) skills	()	()	()	()	()	()
5. Total Quality Control (TQC) skills	()	()	()	()	()	()
6. General Management Skills	()	()	()	()	()	()
7. Marketing Skills	()	()	()	()	()	()
8. Long-Term Planning Skills	()	()	()	()	()	()
9. Labour-Management Cooperations Skills	()	()	()	()	()	()
10. Quality Function Deployment Skills	()	()	()	()	()	()

19. Are you satisfied with the experience and all the skills you have acquired so far during your employment with this company ?

Not satisfied /satisfied/Very satisfied

SECTION 2 : MANAGEMENT TRAINING

1. Is a management training program for managerial staff provided in your company? (Please circle an appropriate answer)

Yes / No / Do not know

2. Have you ever taken part in the company's management training ?

Yes/ No/ Don't know

3. Which of the following modes of management training was attended by you ? (Multiple answers, please tick your answers)
- ☐ On-the-job training/in house training
 - ☐ Off-the-job training
 - ☐ Formal training by attending educational institution such as university, institute or academy.
 - ☐ Attending short-course program, seminar, conference, or up-grading.
 - ☐ Counterpart system, that is, training done by way of working at different company.
 - ☐ Self development / self study
 - ☐ Other, please specify : _____
4. What was the objective of management training provided in each location ? (multiple answers, please tick)
- ☐ Acquiring a completely new skills/knowledge for different field
 - ☐ Acquiring a completely new skills/knowledge for the same field
 - ☐ Up-grading the same skills/knowledge
5. Who generally provided the training ?
- ☐ Personnel from the same group of company
 - ☐ Personnel from the parent company
 - ☐ Personnel from outside the company group
6. Where was the management training held ?
- ☐ In the host country Indonesia
 - ☐ In the parent country Japan
 - ☐ In another country, please specify where ? : _____
7. Is the management training provided to every manager or management staff of your company ?
Yes/No/ Don't know, why?: _____
8. What was your main difficulty during attending the training program ? (multiple answers)
- ☐ Language problem
 - ☐ To comprehend the training materials / subjects
 - ☐ The time of the training was too long
 - ☐ The time of the training was too compact and short
 - ☐ Other, please specify: _____
9. Does your company have any policy formulated concerning management training, whether written or just understood? (Please circle an appropriate answer)
Yes, it does / No, it does not / Do not know
10. Do you know of the existence of Indonesian government's regulations concerning foreign investment, technology transfer and training of local Indonesian employees / staff by foreign companies?.
Yes / No / Do not know
11. Do you think that Japanese executives know and care about the existence of Indonesian regulations concerning the provision of training for local employees, what is

your comment about their view or behaviour?

Yes / No / Do not know, your comment: _____

11. Do you think that the current Indonesian government regulations compel your company to provide training to local employees, including managerial staff?

Yes, compel/ Yes, somewhat compel/ No, do not compel

13. How significance is the Indonesian government regulations motivating your company to provide training, especially management training, to the local Indonesian employees / staff?.

Yes, significant / Yes, very significant / No, not significant/No, not very significant

14. Please indicate on the scale below, the impact of the Indonesian government regulatory action has been on the provision of management training by your subsidiary company.

Dot not increase/increase/Greatly increase
motivation to provide training

15. Could make some comment concerning the current Indonesian government's regulations concerning the operation of foreign companies, technology transfer and training provision for local employees? _____
- _____
- _____

16. During your employment with this company do you consider adequate provision of training has been given, either through in-house training or educational institutions, for updating of your skills and/or knowledge ? (Multiple answers, please tick your answer and circle an appropriate level of adequacy)

[] Through in-house training:

Not adequate/Adequate/Very adequate

[] Through educational institution training:

Not Adequate/Adequate/Very adequate

17. In relations to your day to day's tasks, how did you consider the way in which training was conducted ?

Not effective / Effective/Very effective

18. Which of the following modes of management training you consider as to be most effective in terms of providing the skills / knowledge you wanted? (Multiple answers)

[] On-the-job training/in house training

[] Off-the-job training

[] Formal training by attending educational institution such as university,institute,or academy.

[] Attending short-course program, seminar, upgrading,etc

[] Learning from experince

[] Counterpart system, that is, training done by way of working at different company.

[] Apprentice training

[] Self development / self study

[] Other, please specify ? : _____

19. Have you ever participated in a training program in Japan and what is your opinion after participating the training ?

Yes / No, your opinion: _____

SECTION 3 : B A C K G R O U N D

1. Your position in the company: _____

2. Your nationality :

(Please tick an appropriate answer)

☐ a. Indonesian,

☐ b. Japanese,

☐ c. Other (specify):

3. Highest completed level of education :

☐ a. High school,

☐ b. Undergraduate / Bachelors degree

☐ c. Postgraduate / Masters degree

4. Number of years working in this company :

☐ a. Less than 1 years ☐ b. 1 - 2 years

☐ c. 3 - 5 years ☐ d. 5 - 10 years

☐ e. 10 - 15 years ☐ f. over 15 years

5. Before joining the present company how many years did you have working experience ?

☐ a. Less than 3 years ☐ b. 3 - 5 years

☐ c. 5 - 7 years ☐ d. 7 - 10 years

☐ e. 10 - 15 years ☐ f. over 15 years

6. Did you have the same position as now before joining the present company ? Yes, with the Japanese/Indonesian firms ?

After you have completed this questionnaire, please send it back to me in the prepaid stamped reply envelop.

1. Would you like to have a copy of the summary of this research ?

Yes/ No. If YES, please write separately, or if you prefer, please write your name and address below:

2. Would you be willing to participate in our extension of this research ? Yes/ No

THANK YOU FOR YOUR TIME AND COOPERATION