

Paper Title: the Japan's Role for the Human Resource Development for Manufacturing Industry in Myanmar

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1. Introduction

Myanmar has been receiving international business attentions since 2011. Strong growth potential and expectation for the transformation of the Myanmar's political situation and foreign relations are attracting large foreign direct investment (FDI) from Japan as well as many developed countries.

Industrialization is an important issue for developing countries for economic development. Myanmar urgently requires industrial competitiveness by catching up with technological capability. Human resource development plays a crucial role in building skills and technological capability, and for realizing a nation's industrial competitiveness. Myanmar as the latest comer in ASEAN for industrialization, investing in broad human capital development is fundamental to develop into a modern industrial economy. Developing countries can maximum utilize the late comers' advantages during the process of industrialization.

This paper aims to analyse the current human resource development in manufacturing industry and strategies of Japanese government and industries in investments for it. This paper tries to analyse the case of Japanese technology transfer in manufacturing industry. Especially, it focuses on the implementation process of the effective production system from Japan to Myanmar.

Each country has each development process. When Japan started initial phase of industrialization, Japan tried several strategies to catch up developed countries. The Japanese development path and the Japanese human resource development strategies over years are studied for learning evolutionary process over years. For this, this paper focuses on the innovative aspect of Japanese human resource development practices and its transfer to Myanmar.

Sustainable development in East Asia requires stable economic development. The stable economic development is possible with continuous technology upgrading which is led by human resource development and innovation. Human resource development is indispensable for sustainable development and is powered by innovation in many ways. Innovation is not a new thing. People have been thinking about new and better ways of doing things and to try them out in practice. Without innovation, or new and better way of doing things, the world looks different. Not only high technological innovations, there are fundamental innovations and many ways of doing things better.

Japanese manufacturing industries shows their strength in organizational innovation. In the case of development of the automobile industry, first, the American Fordism of manufacturing system, based on standardized products, produced in long series for mass consumption by low-skilled workers controlled by a hierarchy of foremen, engineers and managers. Then, the Fordism was innovated into the Japanese production system. Just-in-time or lean-production system was developed by the Japanese auto industry combined the advantages of mass production with flexibility in adjusting to changes in the composition and level of demand (Aoki 1988). Lean production system (LPS) is widely known as an effective tool for manufacturing industry by improving productivities and ensuring quality of the product. However, LPS is not implemented in Myanmar yet.

Technological capability building is an important issue for developing countries in terms of economic development. Technology and knowledge have moved across enterprises and countries. Since the 1980s, Japan's foreign direct investment has been accelerated because of the appreciation of Yen. Since then, Japan has been a major contributor of technology transfer to Asian countries. Especially, in ASEAN countries, Japanese technology transfer to the automobile industry has been intensive and playing an important role for the development of manufacturing industry and its human resource development.

The ASEAN Economic Community (AEC), currently under finalizing process by the end of 2015, is expected for regional economic integration. The AEC envisages the following key parts such as a single market and production base, a highly competitive economic region, a region of equitable economic development, and a region fully integrated into the global economy. The AEC areas of cooperation include human resources development and capacity building as one of the most important issues in this paper.

However, for the late developing countries in ASEAN, the AEC is their opportunity as well as thread. Those countries face urgent needs for catching up their industries or find out their competitive fields by liberalization. Under the circumstances, the roles of Japan will be important for Myanmar. The aim of this paper is to analyse the technology transfer from Japan especially for HRD.

This paper first discuss about the Japanese human resource development system and the role of Japan to Myanmar. Then, the current situation of human resource development system and capabilities for manufacturing industry in Myanmar will be analysed. The third part studies the cases of current trainings and practices with corporation of Japanese government such as practices of Myanmar-Japan Centre. The final part evaluates and discuss for the issue.

2. Japan's role in Human Resource Development

This section shows the Japan's role in human resource development by analysing the Japan's historical path of HRD to strength Japan's high skill based industries and the Japanese technology transfer strategies for enhancing HRD of host countries.

Human Resource Development system in initial industrialization in Japan

First, this part aims to study the human resource development system in initial industrialization period of Japan to investigate the basic principle underlining the skill formation process in Japan. It might be a reference for initial industrialization period of Myanmar to enhance the skill base in the country.

Japan developed relatively stable skill formation system for many years. Especially after the WWII, Japan provides firm-based training in the context of stronger internal labour markets. The Japanese system has been characterized as embodying high skill equilibrium (Finegold and Soskice 1988). Many literatures have analysis the recovery and success of Japan in world manufacturing market in the post WWII period in part to Japan's skill base. Japan is best known for its extensive, firm-based system of training strongly associated with complementary personnel policies such as seniority wages and internal career ladder, as well as company unionism.

What was the role of the state for Japan's early industrial period? Japan had few political motives that inspired government policy or social democratic labour movement to nurture skilled labour or artisans. In Japan, initial framework started at the Meiji Restoration in 1868, when Japan opened its economy to the world. The state policy in the early industrial period was organized promoting industrial development. In order to abolish all previous barriers to labour mobility, the Meiji government embarked on a broad liberalization policy that undermined the traditional privileges of the artisanal sector (Sumiya 1955). The Meiji government took a strong deregulatory stance with regards to the traditional artisanal sector and it also took a very direct action to have in redressing early, acute shortages of skilled labour. The apprenticeship as the training policy was mostly in the metalworking and engineering sectors. These were the key industries not only for industrial development but also for military purpose.

The Meiji government promoted human resource development in two major ways, sending Japanese students to foreign countries, and enhancing factory based technical schools. First, the state aggressively promoted training through international exchange that is by sending Japanese students to foreign countries to study industrial technology and by recruiting foreign engineers and crafts men to come to Japan to work in government owned factories. (Theren 2004) The artisans were confronted with changes, revocation of their traditional privileges coupled with state, sponsored industrialization that completely undermined their corporate identity and organization (Taira 1978: 188)

The second, the government sector pioneered the establishment of factory based technical schools that included in-class instruction. These schools were not intended to train ordinary workers, the graduates of the technical school were meant to preside over on-the-job training of others. The graduates of the technical schools played a role in training next generation workers. The first some private firms in metalworking addressed skilled labour scarcities and high mobility instituting their own company-based schools for trainee workers. The first company training school in the private sector was the Mitsubishi Preliminary School for Industry, established in 1900. This system lasted until the 1960s. Graduates were the key technicians and engineers and played crucial role in the development of Japan until recently.

These two strategies at the initial industrialization in Japan contributed the fundamental strength for human resource development to support industrialization in the initial phase and the quick recovery after the WWII. In addition, the system and those human resources created under the system were the driving force for the further development of Japan until now.

Myanmar has just opened its economy in 2011 and has urgent needs for upgrading its industrial capability. The situation has some similarities when Japan opened its economy at Meiji restriction, although the scientific and global background is largely different at that time and the technological level and its complexity are different nowadays, the Japanese government strategies at their initial phase of indoctrination might have some similarities.

Japan's Role in Technology Transfer

Japan has been recognized as an important player for the economic development of Asian countries, especially from the 1960s for Asia NIEs and in the 1980 for ASEAN countries. Technology transfer in Asia has been actively discussed especially after 1985 plaza accord. The application of yen and the industrialization policies of Asian countries accelerated the Japanese transplant to Asian countries. The industrialization of Asian countries was largely accumulated by the Japanese transplants and the Japanese technology transfer through them (Taniura, 1990). The growth of the Japanese automobile industry in the 1980s was conspicuous for more than the speed of the increase in production volumes. The rapid expansion of overseas production and the integration of overseas operation into a global production network and the accompanying expansion of integrated global supply networks also attracted attention (Busser and Sadoi 2004).

With the regards to the product architecture and organizational capabilities, automotive industry has characteristics of integral architecture and its technical innovation is relatively moderate but requires wide experience and coordination with other members and processes (Fujimoto 2003). Therefore, the expansion of the Japanese global production networks in Asian countries, especially NIEs and ASEAN, especially Thailand, Malaysia, Indonesia, Philippines, and Vietnam, were studied and evaluated the cases of technology transfer (Taniura 1990) (Itagaki 1997) (Koike & Inoki 1997) (Busser and Sadoi 2004). The technology transfer of Japanese enterprises, automobile, electric, electronics and other various industries were studied as cases (Okamoto, 1998). The host governments applied industrial strategies to create a cluster policy in their automotive sectors which draw on multinational enterprises (MNE) to enhance the automotive industries (Taniura, 1990) (Sadoi, 2003).

Technology transfer of the Japanese production system was studied various ways. Itagaki (1997) showed their surveys of technology transfer of the Japanese production system in NIEs and suggested the importance of human resource management in those cases. Especially the Japanese skill formation system is a key to the successful technology transfer (Koike & Inoki 1990). Japan developed skill formation system from early years of development. In other Asian countries, as Japanese technology transferred, the importance of human resource development in industries was started to evaluated and introduced, started from Asian NIEs.

However, Japan as well as other Asian NIEs experienced falling competitiveness in export markets due to a rise in labour costs and evaluation of Yen since the 1980s. Rising labour costs have driven

the relocation of a significant share of production from Japan to overseas. Japan, which has developed high skill and technology based industries, have expanded production in ASEAN and transferred their skills and technology in the process, with important ramifications for the international division of labour of firms in both countries.

In many developing countries, foreign direct investment (FDI) of multinational enterprises has become a major source of technology. In Thailand, where in recent years China, South Korea and Japanese direct investment is concentrated, Thai economic growth rate in the 1980s and 1990s have paralleled that of its more technologically sophisticated neighbours, such as Malaysia, Singapore, South Korea and Taiwan, yet its technology development lags behind quite significantly (Wang & Chien, 2007). For Myanmar, Thailand is the important neighbour country where the Japanese technology transfer have been concentrated since the 1980s and accelerated after 2000. Ninety per cent of automobiles manufactured in Thailand are by Japanese car makers and majority of the first tier local auto parts suppliers are Japanese or Japanese majority. Thus, the Japanese technology is likely transferred through Japanese transplants in Thailand.ⁱ

What will happen after the AEC completed? Neighbouring major investing countries, such as China, South Korea and Japan will see ASEAN as a single market. Thailand will be continuously playing an important role as a hub of automobile production in the AEC. Each ASEAN countries have to find and upgrade its strength to survive in the AEC. The countries in the AEC without any specific strength are facing urgent needs to get one.

Japan's Investment to Myanmar

The situations of Japanese investment to Myanmar were surveyed by authors in March 2012 to February 2015. The methodology of the survey was mainly interview survey by visiting offices and manufacturing sites of investors.

The data of Directorate of Investment and Company Administration in Myanmar (DICA) shows the FDI to Myanmar in the fiscal year of 2014-2015 reached 8 billion US\$ in total, double of previous year.ⁱⁱ The FDI from Japan shows rapid increase, from 55 million US\$ in 2013-2014 to 85 million US\$ in 2014-2015.ⁱⁱⁱ

In the case of Japanese investment, number of companies registered at Japanese Chamber of Commerce and Industry Yangon can be used as one indicator. The number of member companies at Japanese Chamber of Commerce and Industry Yangon was 60 in the fiscal year of 1996. It increased to 86 by 1998, but dropped to 70 in 1999 because of political problems in Myanmar. The numbers keep dropping for more than ten years until the year 2011. Drastic change came in 2012. Number of the companies increased more than double, 53 companies in 2011 increased to 133 by the end of March 2013 and exceeded to 200 at the end of 2014^{iv}. About half of the companies are distribution and service section. Their investments might be for pre-investment and feasible study purpose before starting manufacturing plants in Myanmar. Electric and automobile industries are only in imports and distribution centres. The breakdown of FDI by sector shows the manufacturing in the first place in 2013-2014, followed by transport and communication. In FY2014-2015 indicates oil and gas in the first place, followed by transport and communication, and manufacturing.^v

Japanese Manufacturers are interested in investing to Myanmar searching for better location with lower labour cost. Myanmar as one of the lowest in the Asian countries, small and medium sized enterprises (SMEs) are fast in action for re-location of their production sites. Many of them are labour intensive garment industry. For electric and automobile industry where most of the players are large corporations, entry speed is rather slow. However, they are setting up their distribution centres and service centres as an initial phase.

The opening of Thilawa industrial park is accelerating the Japanese manufacturing firms to invest to Myanmar. A consortium made up of Mitsubishi Corporation, Marubeni Corporation and Sumitomo Corporation joined forces with Myanmar Thilawa SEZ Holding Public Limited on January 11, 2014 to established Myanmar Japan Thilawa Development Ltd., (MJTD). MJTD has been developing the 396 hectare “Class A area” of the Thilawa Special Economic Zone in Myanmar, which is scheduled to open in the middle of 2015.^{vi} As of March 2015, 40 companies decided the investment to Thilawa.^{vii}

In the case of automobile manufacturers in Myanmar, Japan has long history after the World War II. From 1962 to 1988, Mazda and Hino contributed their automobile technology to Myanmar Automobile and Diesel Engine Industries (MADE) as import substitution industrialization policy of Myanmar under social planned economy as a part of compensation of WWII. However, Myanmar’s open market policy from 1988, MADE stopped production. Again from 1998, MADE started production base on strict control of imports. At that time, MADE, SPA and Suzuki established Myanmar Suzuki and produced Wagon R locally. However, it was difficult to import knock down parts from Japan, Myanmar Suzuki stopped production in 2010 and closed the company.^{viii}

Situation has changed in Myanmar since the open policy in September 2011. Suzuki again started production and planning to open new production site in Thilawa industrial area. As of February 2014, at the author’s survey, the production volume of Suzuki is still small, about 300 vehicles per month. However, Suzuki reemployed most of former employees at the time of Myanmar Suzuki and trained them as the Japanese way of human resource development system. Their no automated production system helped workers to develop their skills on the job training. The Japanese managers highly evaluated reemployed workers’ loyalty and working attitude toward skill formation.

In summary, Japanese technology transfer is just started in Myanmar. Except the case of Suzuki, most of Japanese manufactures are still waiting to start big investment by setting up small operations to do feasibility studies and checking opportunities.

3. Human Resource Development System in manufacturing Industry in Myanmar

This section aims to analyse the situation of human resource development system in manufacturing industry in Myanmar, historical perspectives and current situation. Technical Vocational Education and Training (TVET) is one of the 6 focal areas of Comprehensive Education Sector Review (CESR) Myanmar since its importance on raising country’s overall level of social and economic development by producing highly competent skilled labourers. The state vocational education and training institutions are in argent needs to upgrade their capabilities to meet the demand for skilled workers

and technicians in developed technological industrial areas. This section provides an overview of the TVET sector and major government TVET institutions in the engineering field.

Before World War II, technicians and skilled workers in Myanmar were mainly brought from India and worked for the existing industries. After the World War II, they went back to their countries and there was a shortage of skilled workers, craftsmen, mid-level technicians and engineers in the country. To address this shortage, the Department of Technical, Agricultural and Vocational Education were established under the MoE and have been involved in the provision of TVET for many years. Many high schools, colleges and universities were opened to provide agricultural, technical and vocation education. By the 1970's, many foreign students from neighbouring countries had studied in Myanmar, which served as the best TVET institutions in the South East Asian region. The quality of education, however, has gradually decreased due to changes in the social environment.^{ix}

After the opening of Myanmar economy in 2011, the pace of reforms and the growth in foreign direct investment, privatization schemes and the creation of industrial parks and special economic zones are accelerated. To meet the fast developing economy, education in Myanmar is entering a major transition period. Rapid reforms have been undertaken by the new administration after the shift in power from the military regime toward a democratic one in 2011.

The opening-up of Myanmar's economy has meant a boom in the demand for a qualified and skilled workforce, highlighting the importance of government-led Technical and Vocational Education and Training (TVET). TVET is one of the six focal areas of the government's Comprehensive Education Sector Review 2012-2014 that seeks to reform Myanmar's education system.^x

The structure of TVET is as shown in Figure 1, TVET has four major pass ways (1)-(4) involved many ministries^{xi}.

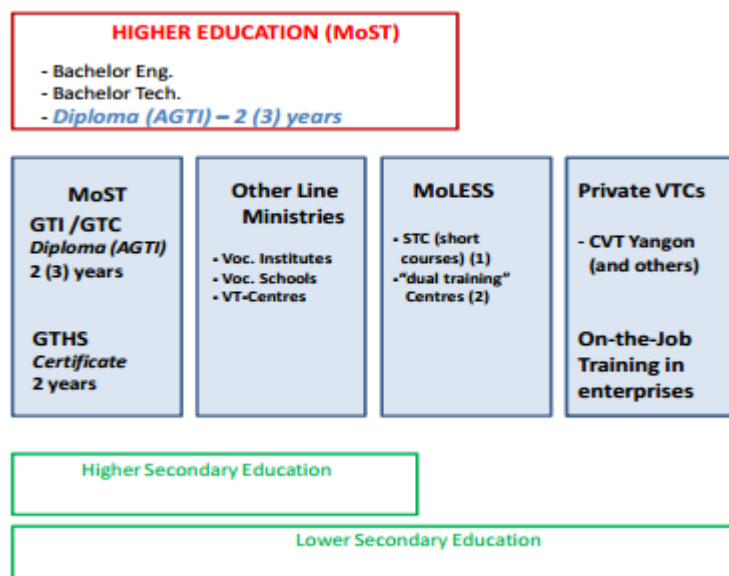
(1) The formal four different types of institutions under the auspices of the Ministry of Science and Technology (MoST): Government Technical High Schools (GTHS); Government Technical Institutes (GTI); Government Technical Colleges (GTC); and Government Technological Universities (TU).

(2) TVET offered by different types of institutions of another thirteen (13) ministries, among them: Ministry of Industry; Ministry of Agriculture; Ministry of Environmental Conservation and Forestry; Ministry of Social Welfare; Ministry of Co-operatives; Ministry of Hotels and Tourism; Ministry of Education; Ministry of Border Affairs; Ministry of Transport; Ministry of Culture; Ministry of Sports.

(3) Vocational training offered by the Ministry of Labour, Employment and Social Security (MoLESS), which is consisting of short courses conducted at one of their three skills development centres or in companies.

(4) Vocational training provided by private training providers such as the Swiss-supported Centre for Vocational Training (CVT) in Yangon. In addition it is assumed that many (medium and large scale) enterprises do conduct some sort of on-the-job skills training and upgrading, possibly in the form of unregulated apprenticeships.

Figure 1 Structure of TVET in Myanmar 2012



Source: JICA 2013

The TVET System in Myanmar is rather fragmented.^{xii} An agreed upon definition and nomenclature for what is internationally understood as TVET is not in place. The demarcation between post-primary TVET and higher education under MoST is not in line with international practices. An overarching TVET policy has not been developed to date.

There has been little coordination and co-operation among the many ministries involved. The TVEC, affiliated to the Myanmar Education Council, is only supervising formal TVE of the MoST. Stakeholders of the non-public/private sector of the economy (employers, employees) and of other sections of civil society are not represented on the TVEC. Co-operation between ministries, the employment sector another important institution of civil society is only taking place to some extent at NSSA under the Ministry of Employment, Labour and Social Security (MoLESS) since 2007.

Thurs, TVET in Myanmar faces several challenges^{xiii}. Firstly, training is disparate and managed across many government ministries. Secondly, TVET in Myanmar has not had strong links with private industry and businesses, that training is not always aligned to the requirements of the job market. Thirdly, infrastructure is a major problem, and there is a lack of technology, equipment and well-trained teachers. This has resulted in a lack of trust in the programs and qualifications that are on offer.^{xiv}

The Education Structure of Myanmar related to TVET in engineering field is briefly summarized by the Figure 2. At first, graduates of middle schools are able to enter Government Technical High Schools (GTHS) instead of entering ordinary high schools in the formal education system. Graduates of GTHS with good performance are eligible to attend AGTI Diploma courses at higher TVET institutions under DTVE such as Technological Universities (TU). In the formal basic education track, students that pass the matriculation examination could have diverse options to study at both professional universities and non-professional universities. However, qualified GTHS students have

Table 1 Number of Students in each Study Field and Institutions (2011-2012)

Study field	TU	GTC	GTI	GTHS	Total
Civil Engineering	20,915	1,611	1,782	0	2,4308
Electronic Engineering	11,208	966	377	0	1,2551
Electrical Power Engineering	11,126	1,050	1,432	0	1,3608
Mechanical Engineering	14,197	1,150	1,600	0	1,6947
IT/ICT	3,056	399	32	0	3,487
Mechatronic Engineering	2,466	0	28	0	2,494
Metallurgical Engineering	143	0	0	0	143
Chemical Engineering	683	0	0	0	683
Architectural Engineering	1,213	0	0	0	1,213
Petroleum Engineering	522	0	0	0	522
Textile Engineering	276	0	0	0	276
Mining Engineering	214	0	0	0	214
Biotechnology	197	0	0	0	197
Nuclear Technology	101	0	0	0	101
Electronic Technology	0	0	0	391	391
Machining Technology	0	0	0	339	339
Building Technology	0	0	0	1,048	1,048
Building Services Technology	0	0	0	36	36
Auto Mechanics Technology	0	0	0	695	695
Electrical Technology	0	0	0	448	448
Metal Process Technology	0	0	0	70	70
Total	66,317	5,176	5,251	3,027	79,771

Source: Developed by the Study Team based on the statistical data of MoST (2012)

The number of students in each study field and institutions in 2011-2012 is shown in Table 1. The number of TU is the largest. The gap in enrolments numbers between TU and other institutions are large. Table 2 shows the completion rate in each grade.

Table 2 Number of Students and Completion Rate in Each Grade (2011-2012)

Institutions	AGTI(1 st)		AGTI(2 nd)		B.Tec(1 st)		B.Tec(2 nd)		B.E(1 st)	
	Taken	Passed	Taken	Passed	Taken	Passed	Taken	Passed	Taken	Passed
TU	18812	58%	12515	75%	9459	79%	6986	86%	7641	63%
GTC	2386	64%	1667	75%	1097	88%	543	89%	654	57%
GTI	1832	68%	1147	74%	540	85%	436	91%	0	0%
Total	23030	60%	15329	75%	11096	81%	7965	87%	8295	62%

Source: Developed by the Study Team based on the statistic data of MoST (2012)

The Table3 shows the number of teachers at the TVET institutions. As with the number of students, the MoST recruited a higher number of teaching staff in Civil engineering, Electronic Engineering, Electrical Power Engineering, and Mechanical Engineering.^{xvi} TUs have the greatest number of teachers among the institutions. On the other hand, less than half the teachers teach engineering subjects in GTHS. The majority of teaching staff in GTHS teach other disciplines such as English and Mathematics. At TU/GTC/GTI, one third of teachers teach academic subjects and these subjects are taught in one third of the schedule.

Table 3 Number of Teachers in TVET Institutions (2011-2012)

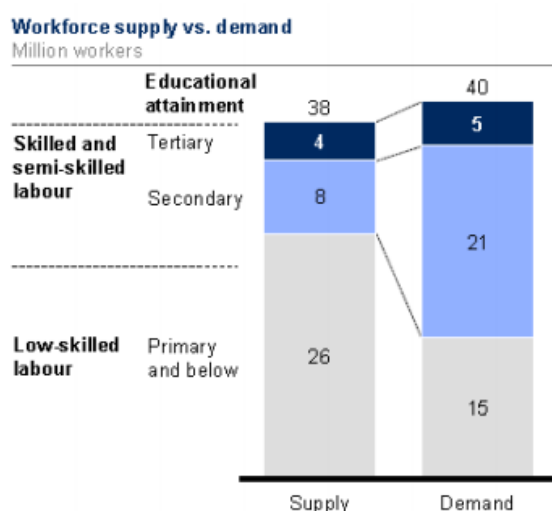
	Special field of study³⁴	Ordinary/Academic subject³⁵	Total
TU	2,091	959	3,050
GTC	142	75	217
GTI	311	182	493
GTHS	464	531	995
Total	3,008	1,747	4,755

Source: Developed by the Study Team based on the statistic data of MoST (2012)

According to the MNPED 2011, only 5.9% of total employments are in manufacturing industry while 50.2% are in agriculture sector in Myanmar. There is large room for increase in the employments in manufacturing industry.

Based on the methodology developed for a McKinsey Global Institute (MGI) study on global labour markets,^{xvii} McKinsey estimated that the number of semiskilled and skilled workers in Myanmar could potentially double from about 6 million in 2010 to 12 million in 2030. On the other hand, they also estimate the demand for high-skilled workers to be around 26 million in 2030. (See Figure 3)

Figure 3 Supply and Demand of Workforce in Myanmar



Source: McKinsey MGI 2013

This section provided an overview of the TVET sector and major government TVET institutions in the engineering field. There is no Central Body or major institution which controls the whole TVET sector in Myanmar, and many ministries supervise TVET institutions in their respective fields. This is one of the important characteristics of the TVET sector in Myanmar.

4. The Case of Myanmar-Japan Center for Human Resources Development

In this section, the case of Myanmar-Japan Center (MJC) is studied from the both perspectives, as a role of Japan in human resource development and as one of TVET institution in Myanmar. MJC was established with the agreement from both Myanmar and Japan for the purpose of human resource development in the field of industry and commerce, as well as to build a stronger tie between

Myanmar and Japan in 2013. MJC is supervised by Ministry of Commerce (MOC) and implemented jointly by Republic of the Union of Myanmar Federation of Chamber of Commerce and Industry (UMFCCI) and Japan International Cooperation Agency (JICA). MJC aims to train the middle management and the executive group as the core target. MJC is providing the educational preparation for career of business leadership, such as functional knowledge, practical management skills and the ability to identify and analyse problems from multiple perspectives by using a variety of approaches.

The organization of MJC is as shown in Figure 4. Director, who is one of the Vice Presidents of UMFCCI and two JICA Experts, Chief Advisor and Project Coordinator, lead national staffs to operate activities of MJC. There are two divisions in MJC, Business Course Division and General Affairs Division. Business Course Division implements MJC Courses and MJC Seminars and General Affairs Division operate Human Resources, Account, Procurement and Administrative works. There are 13 Myanmar Staff members in MJC. As the center for human resources development, MJC provided business courses and seminars since 2013.

Figure 4 Organization Chart of MJC

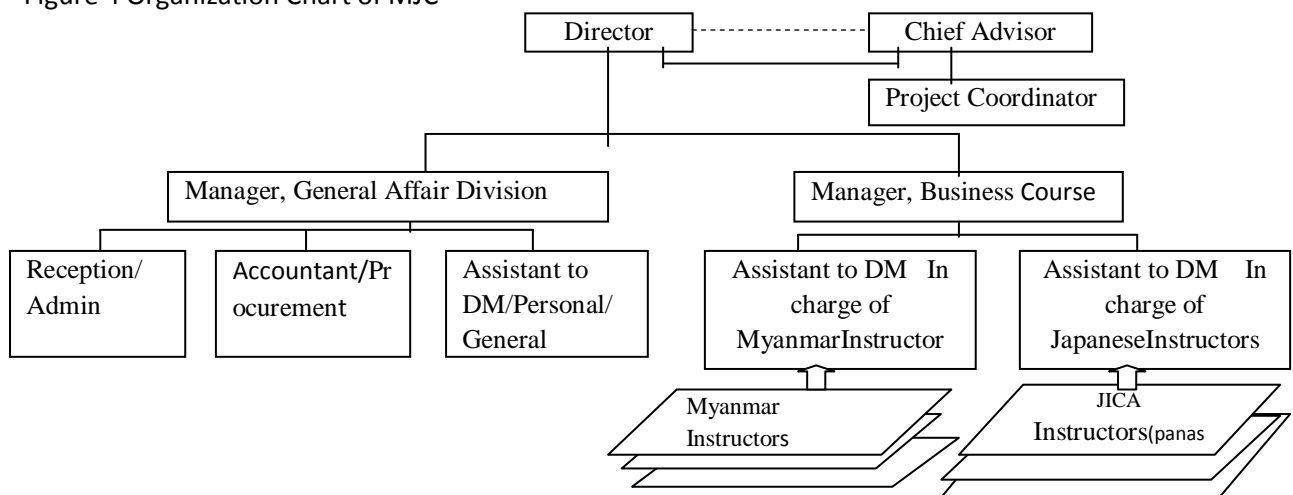
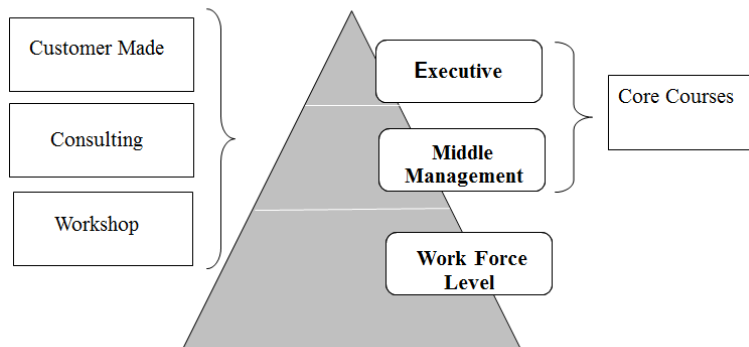


Figure 5 Targets and Courses of MJC



The core target of MJC is middle management and executives, including engineers. MJC is divided into the business courses broadly: (1) MJC's core training courses that include: general course for managers and special course for entrepreneurship and owners, (2) Custom made courses for

individual needs for companies, (3) Consultancy services to individual companies (upon request); as well as (4) Special seminars and workshops as shown in Figure 5.

There are four kinds of MJC Courses, (1) General Business Courses (2) Special Business Courses (3) National Instructor Courses and (4) Original Courses as shown in the Table4.

Table 4 MJC Business Courses

Course			Class	Participants
MJC Courses	General Course	Knowledge Management	2	54
		Human Resources Management	2	54
		Business Plan Development	3	108
		Financial Management	2	62
		Financial Accounting	1	19
		Communication Skills	2	53
		Project Management	3	115
		Strategic Marketing	3	104
		Business Ethics	1	24
		Business Plan Development (Mdy)	2	39
		Japanese Style Management (Mdy)	2	47
		Marketing for Service Business	3	72
		Leadership & Organization Management	1	40
		Human Resources & Leadership - Adv	1	28
		Human Resources Management (Mdy)	2	82
		Project Management (Mdy)	2	73
		Marketing for Service Business (Mdy)	2	74
			34	1048
	Special Course	- Entrepreneur Course/Case Study	7	112
		- Tailor Made Course	5	120
		- Networking Course	1	38
			13	270
	National Instructor Course	- Human Recourse Management	1	37
		- Business Plan	1	37
		- Marketing	1	37
		- Communication Skill	1	37
			4	148
	Original Course	- Practical Tour Guide Training	1	36
		- Global HR Training for Japanese company	1	2
			2	38
MJC	One day Seminar	Regional Seminar...	9	393

Seminars	Special Seminar/ Joint Seminar	KEIDANREN Seminar、Capital Market Seminar、 Business Law/ Collaboration with JDS, TTI...	9	662
			18	1055
	TOTAL		71	2559

For General Business Courses, based on the main purpose of MJC, Japanese Experts by assisting Myanmar assistant lecturers and interpreters provided 34 business courses at MJC in Yangon and Mandalay. There are 1048 participants in all courses and types of industries (Table 5), participants by departments (Figure 6) and participants by positions (Table 6) are shown below.

Table 5 Types of Industries and Number of Participants (2013)

	Participants
Service	498
Engineering	12
Construction	63
Manufacturing	162
Trading	313
Total	1,048

Figure6 Participants by Departments

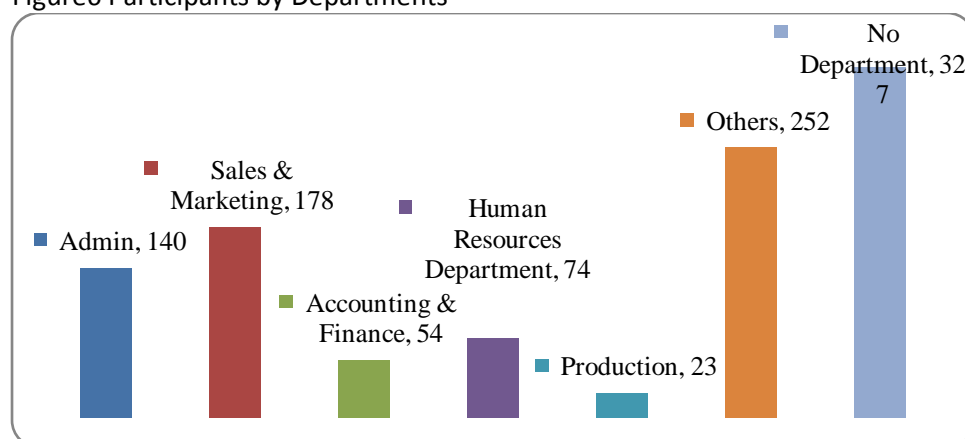


Table 6 Participants by Positions

Position	Participant	Percent
Owner / CEO	303	28.91
General Manager	41	3.91
Manager	213	20.32
Professional/ Technical	164	15.65
Assistant Manager	98	9.35
Others	229	21.85
Total	1,048	100.00

MJC provided special courses, such as Entrepreneur Course, Case Study, Tailor Made Course and Networking Courses in Yangon and Mandalay in FY-2014. Participants by industries, departments,

positions, and age range are shown in Table 7, 8, 9, and 10.

Table 7 Participants by Industries

Type of Industry	Participant	Percent
Service	53	47.32
Construction	12	10.71
Manufacturing	23	20.54
Trading	24	21.43
Total	112	100.00

Table 8 Participants by Departments

Department	Participant	Percent
Admin	13	11.61
Sales & Marketing	7	6.25
Accounting & Finance	6	5.36
Human Resources Department	2	1.79
Production	4	3.57
Others	14	12.50
No Department	66	58.93
Total	112	100.00

Table 9 Participants by Positions

Position	Participant	Percent
Owner / CEO	64	57.14
General Manager	7	6.25
Manager	15	13.39
Professional/ Technical	18	16.07
Assistant Manager	4	3.57
Others	4	3.57
	112	100.00

Table10 Participants by Age Range

Age Range	Participant	Percent
=<25	10	8.93
26-35	60	53.57
36-45	29	25.89
46-55	8	7.14
56 over	5	4.46
Total	112	100.00

Table 11 Overview of MJC Business Course

	Participants	Percent
Excellent	397	44.3

Good	447	49.8
Fair	41	4.6
Poor	4	.4
Very Poor	2	.2
No response	6	.7
Total	897	100.0

As shown in general business courses and special courses, participants from manufacturing industry shares 10-20 per cent of total participants, while service shares nearly 50 and trading shares 20-30 per cent. Currently, still the participants from manufacturing industries are low, but the demand is increasing as the recent investment increase. As of participants positions, owner & CEO is the highest but technical professionals is about 15 per cent. Majority of participants are the age between 26 and 35. Overall 94 per cents of participants evaluated the course excellent or good as shown in Table 11.

5. Conclusion

Myanmar has just started its industrialization process and has been implemented several policies to enhance upgrading human resource in industries. Foreign direct investment in manufacturing industries is increasing as well as the demands for high-skilled human resources. However, the supply of high-skilled workers, technicians and engineers are lags behind.

First, this paper explained the Japanese case of human resource development from the initial phase of skill formation as the basic structure building practices for the skill and technology based industrialization. The state policies on company-based schools for technology and training system developed core technicians and engineers who played an important role in post WWII recovery and rapid industrial development in key industries. It succeeded to share the common value of the importance of skill and technology in industries, from top management to engineers and workers.

Based on the Japanese development path, from the 1980s Japan has been transferring the value to the Asian countries through technology transfer. The Japanese technology and the value have been transferred to ASEAN countries and are currently transferring to Myanmar directly from Japan and in-directly through those ASEAN countries.

The second section of this paper examined the human resource development system in manufacturing industry in Myanmar focusing on TVET system. Under the reformation process by Myanmar government, TVET is consisted by too many institutions, ministries and private sectors. There is no central or major institution to control the whole system and restructure major target to meet the industrial need to meet the demands to meet Myanmar development.

The third section examined the case of Myanmar-Japan center as the Japanese human resource development practice in Myanmar. The MJC courses focus on management and provide variety of courses for owners, managers, engineers in various industries. Although MJC offers management courses and a few technical courses, Japanese management courses includes the contents of management of technology. Business courses to top managers are important at the beginning

because those managers are the ones to enhance the company policies toward to skill and technology based industries.

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ⁱSadoi (2010) focuses on development of technological capability and aims to investigate how organization capability and human resource has been developed.

ⁱⁱ Directorate of Investment and Company Administration, Yearly Approved Amount of Foreign Investment by Country(May 2015) and Yearly Approved Amount of Foreign Investment by Sector(May 2015)<http://dica.gov.mm.x-aas.net/> accessed June 2015

ⁱⁱⁱ Directorate of Investment and Company Administration, Yearly Approved Amount of Foreign Investment by Country(May 2015) and Yearly Approved Amount of Foreign Investment by Sector(May 2015) <http://dica.gov.mm.x-aas.net/> accessed June 2015

^{iv} JETRO News 2015 Dec.15 <https://www.jetro.go.jp/biznews/2014/12/547e7c24e0da8.htm> accessed June 2015

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^{vi} Mitsubishi Cooperation Press Room May 19 2014 <http://www.mitsubishicorp.com/jp/en/pr/archive/2014/html/0000024792.html>, accessed march 2015

^{vii} Author interview at Thilawa February 2015

^{viii} Author interview survey in Yangon, February 2014

^{ix} JICA, PADECO Co., Ltd., IC Net Limited: Data Collection Survey on the Education Sector in Myanmar Final Report, 2013

^x Myanmar Times 2015

^{xi} JICA, PADECO Co., Ltd., IC Net Limited: Data Collection Survey on the Education Sector in Myanmar Final Report, 2013

^{xii} JICA, PADECO Co., Ltd., IC Net Limited: Data Collection Survey on the Education Sector in Myanmar Final Report, 2013

^{xiii} Myanmar Times 2015 May 18 Better skills in a land of entrepreneurs

^{xiv} Myanmar News, 2015

^{xv} JICA, PADECO Co., Ltd., IC Net Limited: Data Collection Survey on the Education Sector in Myanmar Final Report, 2013

^{xvi} JICA, PADECO Co., Ltd., IC Net Limited: Data Collection Survey on the Education Sector in Myanmar Final Report, 2013

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