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A case study of Willowvale Mazda Motor Industries

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Abstract

The purpose of this paper is to investigate to what extent the Japanese production system can be transferred to Zimbabwe by looking at a specific case of Willowvale Mazda Motor Industries. Firstly, the major political and economical factors of Zimbabwe are introduced. Secondly, major findings on transferability of the Japanese production systems to Zimbabwe are presented and discussed based on a specific case of Willowvale Mazda Motor Industries in Zimbabwe. Finally, some implication and recommendations for Japanese companies who are going to start a business in Zimbabwe are presented.

Keywords: Japanese -style Management, Production System Transfer, Education & Training, Labor Union

1. Introduction

The global remarkable rise of crude oil and mineral resource price casts a shadow over the world economy. The world demand for energy resources is increasing, and all the countries of the world make efforts to strengthen their strategies for ensuring the long-term stability of resources. Meanwhile, it is Africa to attract attention as a new resource market. Africa is a treasure house of oil, natural gas and mineral resources including platinum, chrome and cobalt. In recent years,

emerging economies such as Brazil, Russia, India, China, (BRICs) have been starting to compete for the resources in Africa. The Japanese companies are actively involved in large-scale development projects such as chromic development (Mitsubishi Corporation) in South Africa, nickel cobalt metal development (Sumisho Corporation) in Madagascar, liquefied natural gas (Mitsui Corporation, Marubeni Corporation) in Equatorial Guinean, the aluminum refinement (Mitsubishi Corporation) in Mozambique. The employment is created by such these huge development projects, which are giving a big impact to the local economy.

In addition to competition over massive natural resources in Africa, rise in oil price provides an additional income to the African continent. It is deemed that African economy will continue to grow rapidly in near future. As a consumer market in the lower and middle class expands in Africa, foreign companies are trying to attract those clusters. When they are asked regarding the Japanese vehicle, machine and electronic products, the reputation of Japanese products in general is remarkably good. Africa is now strongly hoping to get the cooperation from the Japanese companies and to learn the know-how of Japanese style quality improvement systems. Facing various problems such as infrastructure deficiencies, high literacy rate, poverty, and HIV, Japanese companies particularly manufacturing industry are facing challenges with establishing the production bases and logistics in Africa.

In order to determine how Japanese style management and production system is transferred to Africa, Japanese Multinational Enterprise Study Group (JMNESG, representative: Professor Tetsuo Abo) conducted a field research. The data were collected from Japanese companies, some foreign companies and local companies in Africa. JMNESG analyzed the transfer of Japanese-style management and production system qualitatively using "Hybrid Analysis Model of Application-Adaptation" (See the endnote 1 : Application-Adaptation Hybrid Evaluation Form (6 groups and 23 items)) .

When we researched the southern part of Africa from the middle of September until the end of August, 2010, JMNESG visited the Willowvale Mazda Motor Industries (PVT) Ltd, in the Republic of Zimbabwe on September 6 (See the endnote 2).

This paper is aimed at describing the transferability of the Japanese production system based on the case study at Mazda Motor's Zimbabwe joint venture plant. The data was mainly collected based on interviews with local managers and observations. This paper is organized as follows. In the next section the major

political and economical factors of Zimbabwe were analyzed. Then a brief chronological outline of Mazda in Zimbabwe is described. This is followed by some key findings regarding the degree of transfer of Japanese production systems to Willowvale Mazda Motor Industries. Finally the conclusions.

2. General Political and Economical Conditions in Zimbabwe

Zimbabwe is a republic in the southern part of Africa with Harare as its capital. A landlocked country, it is bordered by Mozambique, Zambia, Botswana and the Republic of South Africa. The country has attracted worldwide attention as a result of violent political, social and economical changes in the wake of its independence in 1980. This section will give a short outline of Zimbabwe's political system and economy.

1) Political environment

Zimbabwe saw the advent of an independence movement driven by black Africans in the 1960s. Ian Smith, Prime Minister of the colonial government, had, amidst worldwide condemnation, pressed forward with his racially discriminatory policy after declaring the independence of the white-dominated Rhodesian Republic. In response, the black population began a guerilla warfare aimed at overthrowing the Smith regime and establishing a state under a black government, but the Rhodesian conflict was brought to a conclusion after an agreement brokered by the British government, assigning whites a fixed quota of 20 out of 100 parliament seats. The general elections held in 1980 led to the birth of the Republic of Zimbabwe, and Canaan Banana was appointed as its first president, while Robert Mugabe became the first prime minister. In 1987, Mugabe abolished the parliamentary cabinet system and post of prime minister, introduced a presidential system of government, and appointed himself as president. Until 1999, the economy developed smoothly after the Mugabe government, shaking off its colonial past, initially pursued a reconciliation policy between whites and blacks, and promoted educational policies and the establishment of a social infrastructure. At first, the country was called a 'nation-building model' and 'honor student' among other African nations. In August 2000, however, Mugabe dealt a serious blow to the country's white-led agriculture by initiating the 'Fast Track' land-reform revolution, whereby white-owned large-scale farms were forcibly appropriated and

redistributed among farmers and others. Presidential elections in March, 2002 were fiercely contested between President Mugabe, at the head of the ruling Zimbabwe African National Union–Patriotic Front (ZANU-PF) party, and the leader of the largest opposition party, Movement for Democratic Change (hereunder, MDC). Although President Mugabe was reelected, the country was thrown into disorder by the ensuing animosity between the ruling and opposition parties. Amidst allegations of election fraud, the British Commonwealth suspended Zimbabwe as a Council member for the duration of one year. International relations deteriorated as the EU and USA imposed sanctions, such as a travel ban for government officials and the freezing of assets. Moreover, in June 2003, the government deployed its security troops against a large-scale anti-government demonstration organized by the MDC, and took other forcible measures such as the arrest of the MDC party leader. At present, Zimbabwe remains under the rule of the Mugabe administration.

2) Economical environment

The social infrastructure of Zimbabwe is relatively well developed and the country is rich in mineral resources, such as gold, platinum and diamonds. With its agricultural, manufacturing and mining industries evenly developed, the country was once called ‘the breadbasket of Africa’. Between the years 2008 – 2009 however, 7 million Zimbabweans had to rely on food aid from the international community as a result of expropriation, drought and inferior governance. With a dwindling supply of foreign currency due to the weakening export, and the decline in production of cash crops as a source of foreign currency revenue, the increasing difficulty of importing fuel, electricity, machinery, components and building materials for production facilities, has seriously affected the agricultural, manufacturing and mining industries. Although the economy is, by abandoning the national currency, to some extent recovering when compared to the period of hyperinflation, economic activities and the life of the citizenry continue to encounter great difficulties as the economy is caught up in a vicious circle, due to the ever-increasing lack of foreign currency and other factors. As far as the financial situation is concerned, personnel expenses made up 60% of the government budget for the first half of 2009, while the budget directed towards investment expenditure is extremely limited. Time will be required for a recovery of economical self-reliance, as investment on the private sector level presently remains at a standstill. On January 29, 2009, the Zimbabwean government abandoned the Zimbabwean dollar which had become

irrelevant, and instead began paying even the salaries of public servants in US dollars, after officially allowing the domestic circulation of the US dollar and South African rand (Asahi Shimbun, January 30, 2009). As a result, the country's hyperinflation came in dramatic fashion to an end, and, according to the government, commodity prices for March, 2009 fell by 0.8% compared to those of January of the same year. However, under the present circumstances, prospects for rebuilding the economy appear bleak, with unemployment figures reaching 94% according to UN estimates.

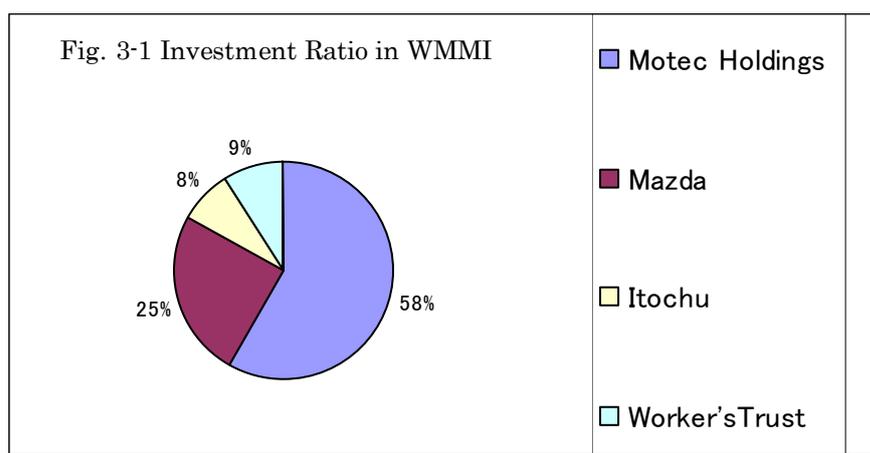
3. Historical Outline of the Automobile Business and Company Profile

Mazda Motor Corporation is developing its automotive business in Africa together with the Ford Motor Company, with which it had a joint venture relationship. The factories producing the Mazda brand cars are the 100% Ford-owned Ford Motor Company of Southern Africa (Pty) Ltd. in South Africa, and the state-owned car assembly plant Willowvale Mazda Motor Industries (PVT) Ltd (hereunder WMMI), 25% owned by Mazda Motor, in the Republic of Zimbabwe (hereunder abbreviated to Zimbabwe). These two companies form the production bases on the African continent in the framework of Mazda Motor's global expansion activities.

WMMI took over a plant built by Ford Motor Company. In 1961, Ford Motor Company of Canada started producing Ford cars, after setting up a plant for the then Federation of Rhodesia and Nyasaland. The plant was compulsorily shut down for political reasons when the white minority government unilaterally declared independence in 1965. IDC (Industrial Development Corporation) acquired the plant in 1967. A great variety of models were produced in the plant, with an allocation of foreign currency provided by the Zimbabwean government for the import of car components. In addition to tractors, Toyota, BMW, Peugeot, Citroen, Nissan (Datsun), Scania, Renault, Bedford and Alfa Romeo cars were assembled on a consignment contract basis. In July, 1980, a beginning was made with the production of Mazda cars.

In 1986, the Zimbabwean government announced an automotive industry integration plan. IDC started looking for a technical partner capable of providing technical knowhow and products, as a shortage of foreign currency forced the company to limit production. In 1989, the Japanese Mazda Motor Corporation was selected as technical partner. A joint venture was agreed upon and signed with, amongst others, Motec Holdings (a subsidiary of IDC) and Itochu. The respective

ownership percentages in this new Willowvale Mazda Motor Industries (PVT) Ltd. joint venture are: Motec Holdings 58%, Mazda Motor 25%, Itochu 8% and Worker's Trust 9% (Fig. 3 – 1) . The president is a Zimbabwean citizen. The plant produces only Mazda models, more specifically, the two models BT50 and Mazda3. At the same time, the plant also imports and sells the Mazda CX–9 model. In this way, WMMI became a KD (Knock–Down) type plant featuring the assembly of only Mazda cars, and providing sales and after–sales service.

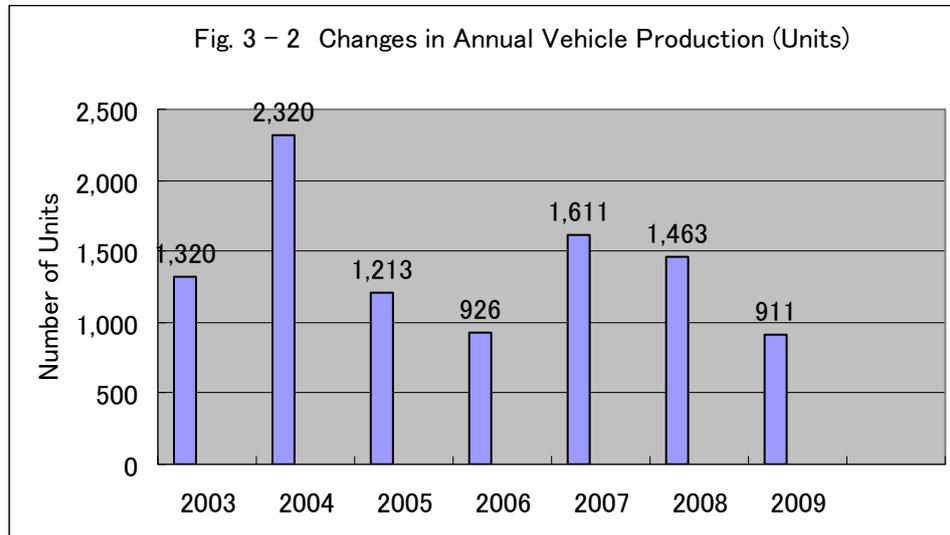


Source: created by the author, based on the WMMI home page.

In the 1990s, the Zimbabwean economy was doing so exceptionally well that it was called the 'Honors student of Africa'. At that time, the market for new cars was on a scale of 25,000 units per year. WMMI, which had formed its joint venture against this historical background, invested in the assembly of engines, began in–house production of engines, installed welding and painting equipment, and developed into a plant capable of assembling a maximum of 10,000 units per year. In the 90s, WMMI produced annually 9,000 units.

WMMI, established in 1989, was at the time of our visit in 2010, in its 21st operational year. Although the company, with the support of Mazda, had steadily expanded its production, and at one time in 1997 boasted 2,000 employees, production started decreasing after 2000, as a result of the deterioration of the economic environment due to political factors. The company was moreover burdened by a huge unsold stock. As car components had become unobtainable due to a shortage of available funds, notably foreign currency, production was halted for the duration of 9 months in 2000. Thereafter, some signs of recovery were being seen. However, from February until September 2010, production was again halted. Production was once more restarted but remains at a level of 5 units per day. Due to

the limited availability of data, results for the post-2003 period have been summarized as shown in Fig. 3 – 2.



Source: figure created by author, based on the Mazda Motor Company Profiles for the years 2003 – 2010.

4. Analysis of the Hybrid Management at WMMI

WMMI is situated in a section of the Willowvale Industrial Park, about 11km south-west of Zimbabwe's capital Harare. At present there are no Japanese representatives at WMMI. Our interviewees during our visit in September, 2010, were the managing director, the manufacturing director and the sales and marketing director, all of whom native Zimbabweans. They were extremely capable, and also very knowledgeable about conditions in the plant. Although production at the plant had unfortunately been suspended at the time of our visit in 2010, we were given a tour of the production facilities. We were also provided with well-informed answers to our interview questions, and to the questionnaire sent in advance. This paper relies to a great extent both on the answers formulated by the manufacturing director, and on the interview (Fig. 4 – 1). We will hereafter explain the six groups established by the Japanese Multinational Enterprise Study Group in the following order: 1) Job organization and administration, 2) Production management, 3) Procurement of parts and components, 4) Group consciousness, 5) Labor relations, 6) Parent-subsidiary relations.

1) Job organization and administration

Job classification at WMMI is the job classification system as seen in Europe. It consists of 6 grades from A to F, respectively subdivided into a number of levels. More specifically, A1, A2, A3 are unskilled operators, levels from B1 to B5 are semi-skilled operators, C1 to C5 are skilled operators, D1 to D5 management, E1, E2 are executive management and F1, F2 top management. Of these, grades A, B, C are labor union members, whereas grades D, E, F are non-union. Positions above supervisor (hereunder, SV) are not a target for labor unions. For example, operators are grade A, maintenance personnel grade B. Grading is enacted by a grading committee consisting of people recommended, not by the labor union, but managers and workers. Although appraisal of performance in relation to the group (line) is carried out 4 times a year to determine wages, assessment of individuals is not. Grades are therefore raised mainly on the basis of the number of years of employment. With regard to promotion, employees apply upon recommendation by a SV when a post becomes available. Promotion is conferred in stages by recommendation of the applicant to a top manager, after an interview by the personnel department. A SV is therefore promoted internally and this promotion, moreover, has no ceiling. The company also supports employees who want to continue their education at university.

Fig. 4 – 1 Outline WMMI Plant

Company Name	Willowvale Mazda Motor Industries
Visit Period	September 6, 2010
Operation Start–Up	1961 (Joint Venture: 1989)
Investors– Investment Ratio	Motec Holdings 58%, Mazda 25%, Itochu 8%, Workers' Trust 9%
Plant Site Area	162,000 m ²
Building Area	38,000 m ²
Main Production Items	Mazda 3, Mazda BT50
Production Capacity	9,880 units (40 units/day)
Units Sold	1,115 (2009)
Domestic Share	35%

Export Destinations	Mozambique, Zambia
Number Employees	204
Japanese	Nil
Annual Operating Days	247
Annual Operating Hours	445,835
Individual Annual Working Hours	2,185

Sources: on-site interviews, data provided by company.

As for on-site management, one SV typically manages 5 workers, depending on the manufacturing process. The functions of a SV comprise quality control, complaint processing, maintaining discipline, the authority to position workers, implementing team management and holding the daily morning meetings. The process of multi-skills development gives the impression of being implemented to a considerable degree. In other words, during the same manufacturing process, both job rotation (JR) and the training of multi-skilled workers were being implemented. During the welding process, for example, 7 workers carry out the welding of trucks and passenger cars. All of them can switch position within the welding process. 4S (seiri = order, seiton = neatness, seiketsu = cleanliness, seisou = cleanup) boards and training score tables (skill matrix) for each individual worker were especially posted at the engine job with its 2 assembly lines, the engine line and gearbox line. Arrangements were made so that employees could perform any kind of work within the engine job. This leads us to the conclusion that enlightening activities are being actively directed at the employees, in order to improve production efficiency and quality, and make the working site into a pleasant and also safer place.

2) Production management

The plant was not in operation at the time of our visit to WMMI on September 6, 2010. According to our guide, resumption of production was scheduled for the coming week (resumption of production actually took place one month later, on October 5). As stated before, car models produced at this plant are, as for the Mazda brand, the Mazda3 and BT50. Although capacity allows for a daily production of 40 units, generally about 5 units are produced. 20 units are considered one lot, and the

plant produces alternately one lot of passenger cars and one lot of trucks respectively over a 4–day period. The assembly process requires 40 employees. In 2008, the company obtained its ISO 9001:2000 Quality Management System (QMS) certification. WMMI is a plant of the KD type and consists of welding, painting and assembling shops but lacks a press shop. Moreover, the plant also comprises an engine assembly section, components warehouse, maintenance section and training section. Upon becoming a joint venture in 1989, a considerable quantity of production equipment from the Ford period was taken over. As a result, the production equipment mainly consists of pieces inherited from the Ford Motor Company of Canada. By and large, the number of Japanese –made pieces of equipment amounts to 10–15%. Amongst these, the welding gun used in the welding process is Japanese–made. The design for the welding jig and the assembly system are created by Mazda.

Factory facilities consist of: welding (metal finish) – paint shop – trim and mechanical – chassis –final inspection finish process (final area). More concretely, the jigs for the welding (metal finish) process have been mainly built upon a Mazda design in South Africa and South Korea, with some coming from the UK. However, the jigs used for the Mazda BT50 were built by WMMI. Mainly simple equipment is used in the painting process, the greater part being done by hand. The process consists of 3 lines: primer – base coat – clean coat. The whole assembly process is done by hand. However, conveyance during the process is partly done on a line, partly by manual pushing.

Maintenance work at WMMI is specialized. Ordinary workers are not expected to play an important role in maintenance, nor are there plans for the future, to increase the involvement of ordinary workers in maintenance. There are two ways of recruiting maintenance personnel. One is recruitment upon graduation from college, the other upon obtaining qualification at college subsequent to workplace training.

3) Procurement of parts and components

Until the 90s, Zimbabwe was, of all African countries, the country that put most emphasis on its manufacturing industry. Zimbabwe, South Africa and Mauritius were called ‘The Big Three’ among the African industrialized countries (Japan International Cooperation Agency, March, 1989). In the framework of this industrial infrastructure, WMMI increased its ratio of domestic procurement of parts and components to 20%. This, however, dropped to a 5% level as the economy

kept deteriorating after 2000. Components once locally procured – batteries, roofs, carpets, door panels and sheet metal – are no longer procured at home. On the contrary, the company presently relies for 95% upon imports from abroad for its components. According to our guide at the time of our visit, Itochu had halted the import of components because of a six month arrears on payments, due to the shortage of foreign currency. In the end, the plant had no choice but to halt production from February to September, 2010. As long as the business environment does not improve, there is no prospect of any change in the present ratio of domestically procured components. To increase this ratio could be called a major challenge for WMMI, while it will also be the key to the company's future expansion.

4) Group consciousness

Small-group activities are not implemented, a fact resulting from historical factors. In 1991, over a period of ten weeks, WMMI held QC circle activities, using a training program of the Association for Overseas Technical Scholarship (AOTS). These activities were, however, terminated, as they produced almost no results. There were two reasons for this outcome. First, the participants demanded financial compensation, and second, the activities failed to effectively produce results due to the cultural differences between Japan and Zimbabwe.

The sense of togetherness among employees is average. Although employees do not wear identical corporate clothing, they organize joint activities such as Christmas parties. The company also owns a soccer team that belongs to the Harare League. When telling the president we had heard of the African brotherhood in Africa and the cooperation among employees, and asked whether this was working, the answer was that the African brotherhood would recover once business had recovered. As for information sharing, a morning meeting is daily held at the plant. There are also various other meetings, such as section meetings to validate specific issues, and meetings among sections.

5) Labor relations

WMMI has principally always maintained a long-term employment policy. Many among the current employees have been employed for a period of 30–40 years. However, from the end of 2000, faced with a deteriorating Zimbabwean economy and a huge stock of finished products, the company had no choice but to lay off employees. The number of employees fell from 550 to 220, and this brought the

monthly production capacity down from the former 600 units to 140. The number of employees was reduced, first by dismissing temporary workers, next by encouraging regular employees to take early retirement. The early retirement option was put forward on condition of accepting a severance payment, amounting to two months' wages and dependent upon the period of continuous employment. The labor unions occupied the plant for 2 days in reaction to the job termination and early retirement plans advanced by WMMI.

However, relations between labor and management have been good over the past ten years. At wage negotiations, automotive industry executives and industrial unions establish wage grades and grade-specific minimum wages. On this basis, duty assignments and amounts payable are decided according to grade, by the works council at the plant. Labor unions are, in principle, not in charge of wage negotiations at the plant. However, the company has held weekly and monthly wage negotiations with the unions during the period of hyperinflation. This was due to the fact that hyperinflation made it impossible for the workers to meet their living expenses.

6) Parent-subsidiary relations

Mazda and Itochu do not directly control WMMI. The parent company Motec Holdings dispatches a CEO and manages WMMI. For 2 years, from 1998 to 2000, two representatives from Mazda and one from Itochu were sent to WMMI. The Mazda representatives were in charge of on-site technical instruction and information liaison with the Japanese parent company in the function of line manager and advisor. In this way Mazda fulfills the function of providing technical assistance supporting the plant system and product quality of WMMI. It also sends personnel when required at the plant (on occasions of improvements or model changes). The representative from Itochu on the other hand, was responsible for transmitting orders for components from WMMI. At this moment, there are no representatives from either of the companies. There was however one representative from Itochu at the parent company, Motec Holding. Mazda Motors is presently not directly involved in the WMMI management. On the other hand, important matters resolved by the WMMI board of directors are reported to and approved by Mazda Motors.

5. Conclusions

So far we have considered six aspects of the WMMI plant: Job organization and administration, Production management, Procurement of parts and components, Group consciousness, Labor relations, Parent-subsidiary relations. We would like to summarize those points which have become clear in this paper.

First, we will consider the transfer of production system from Mazda. Mazda transferred its own production management style to WMMI after establishing the joint venture in 1989. Part of this is to be seen in the English language edition of Mazda's 'Quality Standard' which was observed in the reception room where the interview took place, and the 4S-boards and training score tables (skill matrix) in the engine assembly area. A multi-skills development program was being actively implemented on site, as there is a need to widen the range of operation of each individual worker in a KD plant. In this fashion, even though a KD plant offers only limited possibilities, the local managers were implementing the Japanese system within a feasible range. On the other hand, due to difference in culture, there were also parts which proved impossible to transfer smoothly. QC circles are non-existent. In the near future, improvement activities will doubtlessly become essential when expanding the scale of operations and production capacity.

Second, the need exists for an automobile industry promotion policy by the government. WMMI is for 95% dependent upon imports for its components. Moreover, import taxes are high. Consequently, assembling costs of the cars mount, and there is no other way but to pass these on to the selling price. WMMI is troubled by the import of cars from South Africa and of used cars from abroad. This import from South Africa is the export to Zimbabwe by European, American and Japanese car makers who reap the benefits of the automobile preferential export tax policy of the South African government. There is also the import of used cars. Used cars imported from Japan, at prices 30% lower than those of new cars, are a threat to WMMI. WMMI therefore expects the government to raise import tariffs, and to increase domestic self-sufficiency in components, while assessing the recovery of the economy.

Notes

(1) Application-Adaptation Hybrid Evaluation Form (6 groups and 23 items)

a. Job Organization and Administration

1. Job Classification
2. Job Grades and Wage System
3. Multi-functional Skills

4. Promotion
5. Training and Education
6. First-line Supervisors (or Team leader)

b. Production Management

7. Equipment
8. Quality Control (QC)
9. Maintenance
10. Operations Management

c. Procurement of Parts and Components

11. Local Content
12. Suppliers
13. Methods

d. Group Consciousness

14. Small Group Activities
15. Information Sharing
16. Group Consciousness

e. Labor Relations

17. Hiring Policy
18. Job Security
19. Labor Unions
20. Grievance Procedures

f. Parent-Subsidiary Relations

21. Ratio of Japanese Expatriates
22. Delegation of Authority
23. Position of Local managers

- (2) Our research group revisited and investigated the same plant in September, 2011. As production had been restarted at this point, we were able to obtain a considerable amount of new data unavailable during our investigation in 2010. This paper does not reflect the results of the 2011 investigation.

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