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**INDUSTRIAL MANAGEMENT AND TRAINING  
IN THE UNITED REPUBLIC OF TANZANIA**

**A Case Study of the Matsushita Electric Company (E.A.) Ltd.**

V.93-86669

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This document was prepared by the Regional and Country Studies Branch, Industrial Policy and Perspectives Division.

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## **PREFACE**

In the context of its study programme on industrial human resources development (HRD), UNIDO's Regional and Country Studies Branch is paying special attention to Sub-Saharan Africa (SSA). The trend towards liberalization has emphasized the need for improving the supply of technical and managerial skills, which is becoming an increasingly decisive factor in the competitiveness of African industries.

The present case study focuses on industrial management and training issue and attempts to identify new approaches to this issue through the experience of one Japanese manufacturing enterprise, the Matsushita Electric Company (East Africa) Ltd. established in Dar Es Salaam, United Republic of Tanzania. In the context of the case study, three one-day Workshops on Industrial Management and Training were held at the premises of the company on 25-27 January 1993, and drew some 80 participants from a wide range of Tanzanian enterprises and government institutions.

The Workshops were part of the programme of a UNIDO Mission to Tanzania which took place from 16 to 29 January 1993. The Workshops and the case study were conducted by Regional and Country Studies Branch in co-operation with a UNIDO consultant, Mr. Paul Hesp. A preparatory Mission, to organize the Workshops and to prepare the case study, was undertaken by UNIDO from 10 to 23 October 1992. Apart from a series of interviews with the managing team of the Matsushita Electric Company (E.A.), the Missions also had discussions with key government agencies, parastatals, organizations representing private enterprises and international aid agencies.

UNIDO would like to express its gratitude to Mr. K. Muto, Managing Director and all other managers in the Matsushita Electric Company (E.A.) Ltd., who - in addition to their everyday management tasks - hosted the Workshops, gave highly informative lectures and factory tours, and took a very active part in the discussions on all three Workshop days.

The assistance given by the Ministry of Industries and Trade, the Government of Tanzania as well as by the Government of Japan, which donated the project fund through a special trust fund programme, are gratefully recorded. The co-operation of the UNIDO representation in Dar Es Salaam, Mr. A. Krassiakov, Country Director, and Ms. A. Kostian, Junior Professional Officer in preparing and managing the Workshops is also greatly appreciated.

## ACRONYMS

DSM	Dar-es-Salaam
EA	East Africa
EPZs	Export Processing Zones
FFYP	First Five Year Plan
GDP	Gross Domestic Product
HPTC	High Precision Technology Centre
HRD	Human Resource Development
LDCs	Least Developed Countries
MEIDA	Metalworking and Engineering Industries Development Association
MMS	MEIDA Maintenance Services
MVA	Manufacturing Value Added
PTA	Preferential Trade Area
R&D	Research and Development
SFYP	Second Five Year Plan
SIDO	Small Industries Development Organization
SSA	Sub-Saharan Africa
SSIs	Small-Scale Industries
TQC	Total Quality Control
TQM	Total Quality Management
TPM	Total Productive Maintenance
UNIDO	United Nations Industrial Development Organization

## INTRODUCTION

The recent radical change of economic policy from a socialist regime to a market oriented system has given an impetus to the economic recovery after a long-lasting recession in the United Republic of Tanzania (Tanzania hereafter). The recovery has been mainly due to the revitalization of private enterprises and the special stimuli given to the agricultural sector.

Although the current recovery is expected to continue, the manufacturing sector which has long stagnated is only recovering slowly. At its peak, the manufacturing value added (MVA) share of GDP was 13 per cent in 1976 while only 8 per cent was registered in 1991, a slight improvement over the all-time low of 7.6 per cent in 1987.

The slow recovery of the manufacturing sector is attributed largely to the decline of the public sector industry, which has a lion's share in manufacturing production. The new economic strategy promotes the privatization of the public sector industry, but the transition to privatization is very slow. There are numerous problems and constraints to be resolved in public sector as well as private sector manufacturing enterprises, such as the lack of infrastructural development, investment funds, raw materials and intermediate goods, limited market size, chronically depleted foreign exchange, the shortage of qualified manpower for industry, etc. Among them all, the shortage of qualified manpower for industry is a critical issue, requiring long-term as well as wide-ranging strategies and measures for its development.

The present study focuses on industrial management and training and attempts to identify new approaches to this issue through the experience of one Japanese manufacturing enterprise established in Tanzania.

The Matsushita Electric Company (East Africa) Ltd. (Matsushita EA hereafter) is a subsidiary of Matsushita Electric Ltd., a Japanese multi-national electric/electronics company with headquarters in Osaka. Matsushita EA was established in Dar Es Salaam in 1966 and started producing batteries in 1968. Later, production lines were expanded to a range of simple electrical household goods and consumer electronics appliances. The company employs, in all, some 450 people presently, of whom four Japanese occupy the top managerial posts.

Over the past quarter of a century, Matsushita EA has been successfully active in the domestic as well as external markets and coped with the difficult economic environment of the country. Its success is largely attributable to good management and a well-trained and motivated labour force.

The analysis in the present report is made based on a series of interviews with the managing team and documents and background information supplied by Matsushita EA. In addition, the text (especially in Sections 1.2 and 3.4) also reflects the main

points of the Workshops<sup>1</sup> discussions on industrial management and training issues in Matsushita EA as well as other Tanzanian enterprises.

The report is structured as follows:

Chapter 1 deals with the Tanzanian context. After a brief summary of the background of the economic development in the past and present and the major characteristics of the manufacturing sector, industrial management and training issues are described. Major problems identified are the lack of managerial independence during the previous decades, the failure of know-how transfers by foreign partners, and the lack of co-ordination and practical orientation among training institutes.

Chapter 2 presents a profile of Matsushita EA, to help the reader understand its activities in Tanzania. As a producer of radios and dry batteries, it is part of a very minor branch of the Tanzanian manufacturing sector. It has, however, been comparatively successful in its operations, despite an unfavorable economic environment. Its good internal organization is seen as the major reason for its success, as the firm operates to a large extent independently from the parent company in Japan.

Chapter 3 then focusses on the company's approach to management and training. This approach draws heavily on concepts commonly used in Japan as well as on firm-specific management and training principles. An assessment is also made of the way in which the company's training and management methods have been transferred to other firms and individuals outside the company. While in this respect the company pursues an active policy vis-à-vis agents and subcontractors, its effects are limited by the small size of the electronics industry.

Chapter 4 draws a number of general conclusions, and the main finding being that it would be wrong to overemphasize the peculiarity of the Japanese character in the Matsushita approach. The "Matsushita principles", as well as many other Japanese methods of (human resource) management, have a strong element of common sense, although they do heavily stress group culture in a firm. This, however, should be an advantage in many developing countries where the group rather than the individual is still the norm. Chapter 4 also indicates several possibilities for follow-up action.

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<sup>1</sup> The programme of the Workshops and a list of participants may be found in Annex I-1 and I-2.



1. THE CONTEXT: MANUFACTURING AND HUMAN RESOURCE ISSUES IN TANZANIA

1.1 The background of the economic development and the basic characteristics of the manufacturing sector

The United Republic of Tanzania became a sovereign state in April 1964 after the two sovereign Republics of Tanganyika and Zanzibar, which became independent in December 1961 and December 1963 respectively, formed a political union.

According to the latest population census of August 1988, the total population was 23.1 million including 0.6 million (2.6 per cent) in Zanzibar. The population grows at a rate of 2.8 per cent annually and is estimated to be 25.8 million in 1992. At the present growth rate, the total population will exceed 31 million by the year 2000.

At independence the Government launched ambitious economic development plans: the Three Year Plan (1961-64) and the First Five Year Plan (PFYP) (1964-69). During the Three Year Plan the government provided favorable conditions for foreign capital to induce the flow into the country. The favorable conditions offered for foreign capital included tariff protection, guarantees against nationalization, tax incentives and investment opportunities. PFYP aimed at essentially the same strategy as before, but a more ambitious programme was proposed with respect to industrial development, in particular for expansion of markets and investment through promotion of private local and foreign investment.<sup>2</sup> The favorable conditions to invest in the domestic market and the rapid economic growth encouraged foreign enterprises, the Matsushita Electric Company among them, to invest in Tanzania.

In 1967 a new course of development was taken, based on the Arusha Declaration, which aimed at pursuing the principles of socialism and self-reliance. According to the socialist principle, the major means of production and finance must be owned by peasants and workers. In practice this meant that all the natural endowments the country holds, news media, communications, banking and insurance, export-import trade, wholesale trade and major industries came under government control. The principle of self-reliance which was to strive for harnessing local resources as a basis of development discouraged excessive reliance on foreign investment and aid. Thus, industrial development was directed towards public control system; major industries became owned by the public sector in which new investments took place to establish large-scale manufacturing industries.<sup>3</sup>

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<sup>2</sup> Rune Skarstein and Samuel M. Wangwe, Industrial Development in Tanzania: Some Critical Issues, Scandinavian Institute of African Studies, Dar es Salaam, 1986, P.4.

<sup>3</sup> Ibid., p. 6

The Second Five Year Plan (SFYP) (1969-74) explicitly reflected the principles of the Arusha Declaration by supporting the expansion of public sector industries and by promoting rural small-scale industry development.

In the period from 1964 to 1976 Tanzania made a significant economic growth with average annual growth rate above 5 per cent. In the same period manufacturing growth was even higher than the GDP growth rate with 8.6 per cent indicating that industrial development was a driving force of the economic growth. As a result, the share of manufacturing value added (MVA) in GDP gradually rose and at its peak in 1976 reached 13 per cent.

However, the country plunged into a serious economic recession in the period of 1977-83 with annual average GDP growth rate less than 1 per cent. The recession in the manufacturing sector was even worse recording a negative growth and the disindustrialization continued to 1986 declining the share of MVA in GDP to less than 8 per cent at its bottom. The recession was a combined effect of mismanaged agricultural development, stagnation in public sector enterprises and the world-wide recession which led to the deterioration of prices for Tanzania's most important exports, i.e. coffee, cotton, minerals, etc.

Only from the end of the 1980s on the economy of Tanzania started to show signs of recovery. The recovery is largely due to changes in economic policy, which have given greater freedom to private enterprises. Special stimuli have been given to the agricultural sector (which in 1990 accounted for 58 per cent of GDP and the great majority of the labour force). The current economic upswing is expected to continue. The Government is completing the implementation of the Second Economic Recovery Programme for the 1989-1992 period. The emphasis in this programme, as far as the manufacturing sector is concerned, was on rehabilitating enterprises and more efficient use of currently existing productive capacities.

While liberalization of the economy has had positive effects on industrial output in the past five years (due to, among others, improved access to foreign exchange, a better supply of domestic agricultural inputs and greater consumer demand) capacity utilization rates are in many cases still below 30 per cent, and the MVA share of GDP is only increasing slowly; in 1991, it was 8.0 per cent.

The most important sub-sectors in formal manufacturing are food processing and beverages, textiles and leather, and chemicals. In 1988, these accounted for 19.2 per cent, 16.4 per cent and 20.7 per cent of MVA, respectively. Industries using relatively advanced technologies are rare. There are only a few enterprises in the electrical goods branch. Electrical, non-electrical machinery and motor vehicle production together accounted for only 6.9 per cent of MVA in 1988. Close to 40 per cent of all industrial establishments and employment are found

in and around Dar Es Salaam<sup>4</sup>. The manufacturing sector depends heavily on imported raw materials, spare parts and machinery.

The formal manufacturing sector employed 114,163 persons in 1988, the employment trend being lightly upwards in spite of underemployment in many establishments. The industrial labour force is overwhelmingly male, both in the formal and informal sectors, as a consequence of cultural and educational barriers. At the higher levels, women are very rare to be seen.

Within the formal sector, small-scale industries account for about one-fifth of employment. This contribution may seem modest, but there are indications that the smaller-scale establishments are more efficient and have been more successful in adapting to the difficult external environment than the large enterprises. They may therefore have a considerable potential for future growth.

Much remains to be done to create a favorable environment for industrial investment, including improvements in physical and institutional infrastructure, a further reduction of obstacles to trade and greater transparency of the regulatory framework. Buying power in the domestic market, although increasing, will remain limited in the medium term, and will force Tanzanian entrepreneurs increasingly to look for export opportunities.

Improving the supply of human resources will play a key role in the recovery of the manufacturing sector. This means increasing the availability of skilled managers, technicians and workers. The 1987/88-1992/93 Manpower Plan aims at meeting the human resources development (HRD) requirements for all sectors of the economy, including both the formal and informal sectors. It is clear from the above that the potential role of small-scale and informal industries should not be underestimated, and it is therefore important that HRD is not focussed too narrowly on the requirements of the large-scale formal sector.

Particular efforts are required to increase the participation rates of females in the relevant educational and training programmes: in 1986, for example, only 15 per cent of the female secondary school students were enrolled in programmes teaching technical subjects, and in 1990 they represented only 5 per cent and 20 per cent, respectively, of the students enrolled in B.Sc.Eng. and B.Comm. courses at the University of Dar Es Salaam<sup>5</sup>.

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<sup>4</sup> Figures in this paragraph and the next were taken from: Planning Commission/Ministry of Labour and Youth Development - Tanzania, the Informal Sector, 1991, Dar Es Salaam, n.d.; and Bureau of Statistics - Survey of Industrial Production, 1988, Dar Es Salaam n.d, pp. 1 - 3, 10 - 12, 25 - 30.

<sup>5</sup> Ibid., p. 29.

## 1.2 Management and training issues in manufacturing

Tanzania has remained heavily dependent on outside expertise for industrial development. The initial planning of industries - the sugar and textiles industries constitute a particularly clear case - has been undertaken by foreign experts, with little local participation. "The close link between foreign engineering consultants, machinery suppliers and foreign finance has systematically operated against involvement of local personnel in the project planning and execution activities"<sup>6</sup>.

Concern with speed of project implementation militated against local learning. Local experience acquired in the course of running enterprises has not been properly assessed and utilized. And with the downturn of the economy, such R&D as existed in local enterprises was discontinued to concentrate resources on everyday operations. As a consequence, very little absorption and transformation of imported technologies in a domestic technological base took place. Financial planning, with its strong reliance on foreign funding, has not been conducive to the building of indigenous technological capacity either.

Efforts have been made to localize factory management, both by the Government and by individual industries. But the issue was not given enough attention, and progress has been slow. This is partly the result of the concern with everyday operations (see above) which has tended to overshadow the training and learning objectives. As a consequence, local management has in a number of cases been unable to solve operational problems of enterprises, and foreign management and technical expertise had to be brought in once again. This is very evident in the rehabilitation programmes now being carried out, where the "same logic which inhibited local participation in pre-investment activities...seems to be replicated"<sup>7</sup>.

The reliance on foreign expertise is closely linked to the shortcomings of the educational and training system. In general education, there are too few resources for teaching science, technology and business-related subjects. In early 1993, for example, the country's secondary schools were short of 237 science teachers, which must be considered a high number, given that there are only 328 secondary schools. The gap is only partly filled by (expensive) overseas volunteers<sup>8</sup>. There is a lack of

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<sup>6</sup> S.M. Wangwe - Building Indigenous Technological Capacity: a Study of Selected Industries in Tanzania, paper presented at the Workshop on Alternative Development Strategies in Africa, Oxford, 11-13 Dec. 1989, p. 17. The analysis in this paragraph and the next two is based on this paper.

<sup>7</sup> Ibid., p. 41.

<sup>8</sup> Bureau of Statistics - Tanzania in Figures 1991, Dar Es Salaam 1991, p. 13; Daily News, January 23, 1993, p. 3.

co-ordination among training institutes; better co-ordination could help towards more efficient utilization of the limited human and material resources.

Training is not sufficiently focussed on an increasing need for people with an entrepreneurial spirit as well as sophisticated technological and managerial know-how in a liberalized economy. "...It appears that training programmes offered by tertiary training institutes are geared to preparing students to be job seekers rather than job creators...it was also revealed that tertiary training programmes do not seem to prepare graduates adequately to adapt to changing professional demands"<sup>9</sup>. This implies that the ability to innovate and assimilate imported technologies is not developed either<sup>10</sup>. A large variety of management training courses is available, but no courses specifically dealing with industrial management issues<sup>11</sup>. Modern management skills are particularly rare to be seen outside the larger urban centers and in the smaller enterprises.

The problems of a weak human resource base for industrial management have been compounded by the fact that during the past decades, the country has had a "command economy". This meant that the economy was largely run on the basis of directives issued by the Government. Managers therefore have hardly acquired management skills independently to be fully responsible for their work - especially in parastatals, where political control was very strong. Managers in parastatals for example lacked freedom of action with regard to hiring or dismissing employees. Overstaffing is therefore not uncommon, as is the presence of workers who do not have the right qualifications. The scope for managerial action is increasing now, as the economy is becoming more liberal; but many managers seem ill-prepared - by training and experience - to deal with the increased responsibility.

Apart from not having learned to act independently, managers in many Tanzanian enterprises have not learned teamwork either. This is not a typical Tanzanian problem (although it has been reinforced by the "command economy" with its top-down lines of communication, which was an obstacle for the emergence of horizontal co-operation within management). It has been noted that in many LDCs, authoritarian management styles are common in enterprises, and reviews of management issues in Africa have found that "many managers were 'disenchanted' with the way their

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<sup>9</sup> ESAURP - Tertiary Training Capacity in Tanzania - a Report to the Planning Commission, United Republic of Tanzania, Dar Es Salaam 1992 (draft report), p. 284.

<sup>10</sup> S.M. Wangwe, op. cit., p. 30.

<sup>11</sup> Ibid., Tables 3.15 - 3.17.

enterprises were run by senior managers and were frustrated by the red tape involved"<sup>12</sup>.

As a result there is, within most enterprises, no integrated approach to manufacturing - an integrated approach implies taking account, simultaneously, of supply, production, marketing, maintenance, personnel and financial management aspects. "Often, only managing directors or their equivalents are aware of [the importance of] these interdependencies for the whole organization"<sup>13</sup>. Financial management would appear to be particularly weak. Long-term planning appears to have been virtually unknown; this has exacerbated supply problems, as inputs are not ordered long enough in advance.

The lack of attention to good internal organization has led to an underestimation of what a "healthy" organization can do under adverse external circumstances. This has resulted in a paralyzing fixation, among many managers, on the (admittedly difficult) external economic environment in Tanzania; this attitude was very noticeable in the discussions during the Workshops. As the Principal Secretary of the Ministry of Industries and Trade pointed out in his opening speech of the Workshops, "Improvement in management skills with regard to optimum labour utilization, proper maintenance of machinery and equipment and effective quality control and marketing will result in improvement in the performance of many of our manufacturing firms."

Besides good management, an enterprise needs a well-trained and motivated workforce. With regard to external training, the remarks made above also apply to employees; basic education, fortunately, has made much progress, and among younger applicants for industrial employment (including women) illiteracy is now uncommon. For in-house training, some of the larger parastatal enterprises have fairly well-developed internal training programmes. The smaller enterprises either do not understand the value of systematic in-house training or cannot afford such programmes and facilities; they also have greater problems than the large-scale enterprises - which are usually parastatals - in getting government support for training, although the Small Industries Development Organization (SIDO) does provide, among others, training in management and a variety of technical skills.

A remark frequently made by representatives of large enterprises during the Workshops was that material rewards - wages plus an incentive package - in their firms are often comparatively good, but that workers are not motivated. Further

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<sup>12</sup> UNIDO - Training Industrial Managers in Least Developed Countries (LDCs), paper presented at the UNIDO Workshop on Industrial Development in the Least Developed Countries: Towards an Industrial Action Plan, Vienna 19-23 August 1991, p. 10.

<sup>13</sup> Ibid., p. 11.

discussions showed that this seems to a large extent the consequence of (a) lack of transparency in management; (b) the absence of "hands-on" management, that is, giving a good example by being present and active on the shop floor and exercising leadership; and (c) the fact that workers are not made "co-managers" by delegation of responsibility. As they are not informed and cannot understand the way in which management operates, and are not inspired by the management, they do not acquire a feeling that their contribution to the company matters. As a result, absenteeism becomes a major problem.

Issues which are intimately related to management methods and skill levels are maintenance, quality control and consumer orientation. The first is of particular importance in the context of rehabilitation: while many operational problems were certainly due to difficult external circumstances, they were exacerbated by the lack of systematic and particularly of preventive maintenance. Quality control and consumer orientation are essential for a manufacturing sector which is becoming more exposed to competition, both in the home market and in its attempts to establish footholds in export markets. The output of Tanzanian factories is often sub-standard, and consequently uncompetitive. Nor has there been much attention to consumer preferences in what used to be a suppliers' market.

New requirements for HRD extend from production to industry-related services, ranging from applied R&D and industrial consultancy to customer services. These activities are hardly developed at all. At the SIDO industrial estate in Dar Es Salaam, MEIDA Maintenance Services (MMS) provides maintenance and repair services and consultancy. This centre was set up by the Metalworking and Engineering Industries Development Association (MEIDA), with Swedish support. It also provides assistance in the provision of spare parts, and runs courses on maintenance.

Institutions such as MMS are still rare in Tanzania. Their usefulness is now understood both at the policy-making and at the industry level; but apart from this isolated case industrial entrepreneurs do not yet seem to have undertaken concerted action on these issues, and to have engaged in a dialogue with the existing institutions in order to address the problems described above. The Chamber of Commerce, which has never been strong in the past because the scope for private enterprise activities was so restricted, could play an important catalyzing and co-ordinating role in this respect.

2. THE MATSUSHITA ELECTRIC COMPANY (EAST AFRICA) LTD. -  
A COMPANY PROFILE

The Matsushita Electric Company (East Africa) Ltd. (Matsushita EA hereafter) is a subsidiary of the Japanese company, Matsushita Electric Industrial Co., Ltd., one of the world's largest electronics companies which sells its products under the brand names Technics, Panasonic and National.

Matsushita Electric Industrial Co., Ltd. has subsidiaries in a large number of industrialized and developing countries. All of them operate to a large extent independently from the parent company, although it does provide technologies and high-level training, and determines overall production standards and company strategies. All subsidiaries use the same management philosophy and system, which has been a major factor in the company's success, and has proved of great importance in coping with the adverse economic environment in Tanzania.

Under the favorable environment of the steady economic growth and the open economic policy which welcomed foreign direct investment, Matsushita EA was established in Dar Es Salaam in 1966, and the first production line (batteries) came on stream in 1968. Production was soon expanded to a range of simple electrical household goods (fans, torches) and consumer electronics (portable radios, radio cassette recorders, radio gramophones). On a modest scale, custom-made electronic apparatus is also produced (ship radios for the Tanzanian Government, among others). In terms of employment and output, the battery factory is the most important operation. Apart from serving the Tanzanian market, the company also exports to surrounding countries - Malawi, Rwanda, Burundi.

Exports to East African countries were considerable at the time when the East African Economic Community still functioned, amounting to 40-45 per cent of total sales in the case of batteries. At present, they account for only a minor part of annual sales, amounting to some 20 per cent of total production (mainly batteries). Lack of progress in the Preferential Trade Area (PTA) for East and Southern Africa is considered a major obstacle to a new export drive. The annual turnover in 1991 was around Tshs 2,900 million; the estimated figure for 1992 is Tshs 3,600 million (approximately US\$ 11 million, at the 1992 rate of exchange), and profit levels have averaged 10-15 per cent in recent years.

Matsushita EA employs, in all, some 450 people, of whom 76 are women. The top management consists of a Managing Director who doubles as Director of Finance and Administration, a Director of Marketing, and a Director of Planning and Production who doubles as Manager of Dry Battery Production. These three are Japanese. In addition, one Japanese national is Manager of Radio Production. Except for the two managing posts in production, all middle-management posts are filled by local employees (see Annex II-1), so is the rest of the employees. Middle and higher-level staff, from Section Head upwards, are all male. The women are



mainly employed on the assembly lines; a number of them work in the administration. Japanese managers serve in Tanzania on a rotating basis to ensure a regular supply of up-to-date management and technical know-how.

As the basic Matsushita philosophy requires that subsidiaries operate independently, Matsushita EA is a financially independent entity and has an independent accounting system. While occasional support has been received from the parent company during difficult times, the firm has by and large been forced to surmount operational difficulties by becoming more efficient.

Production of batteries grew rapidly during the 1970s, from 11 million units in 1969 to 71 million in 1979 (see Annex II-2). After a brief decline in 1980, production increased again to reach a maximum of 78 million in 1981. Thereafter, there was a strong decline, to 46 million in 1983. Production was more or less stable during the next two years, but dropped further to 25 million in 1986. After 1986, there has been a gradual recovery, output reaching 45 million in 1991.

Radio production grew very rapidly during the 1970s, from 5,000 sets in 1972 to a peak in 1978, when a total of 235,000 sets was reached (see Annex II-3). This was followed by a steep decline, with production stabilizing during the 1983-1986 period, just as in the case of batteries. Output fluctuated between 31,000 and 37,000 during these years. After a low in 1986, when only 14,000 radio sets were produced, output started picking up again, and by 1991, 108,000 sets were produced.

The decline during the early 1980s is blamed on the economic downturn in Tanzania. This affected radio production earlier and more strongly because radios are something of a luxury item in the Tanzanian context; batteries are a more basic consumer good for which demand is less elastic, which expresses itself in more moderate production swings. Production started picking up in the late 1980s as economic liberalization began to have a positive effect on the economy, and consumer spending increased. A reduction of tax on the simplest radio model (the "peasant radio") helped to stimulate demand in the countryside where people have very limited access to information and leisure.

At the end of 1992, Matsushita EA produced 4.5 million batteries and 10,000 radios and radio cassette recorders per month on average. This is an increase of 80 per cent and 900 per cent, respectively, over the 1986 low; but the figures were somewhat below planned production for that year. The product range has been reduced; apart from batteries, only four types of radio are now produced. Production shortfalls are blamed on restricted foreign exchange availability (50 per cent of hard currency earnings have to be turned over to the Government in exchange for Tanzanian shillings - this regulation did not exist when the factory was set up), which limits imports to essentials (only some 30 per cent of the company's inputs come from local sources). An additional factor, however, could be that the local

market for consumer electronics is still quite limited; trade liberalization has also increased competition.

The company relies on headquarters in Japan for technologies. Operations in East Africa are too small in scale to warrant the existence of local R&D facilities, although minor improvements to products have been made locally. The company pays royalties to the parent company for the use of technology. Most of the radio models are somewhat old-fashioned and seem rather unsophisticated, but adherence to old models simplifies repair and servicing - few people in Tanzania can afford to regularly buy the newest in electronics, as is the fashion in industrialized countries.

All machinery is Japanese, most of it dating back to the 1960s. It is kept in good working condition by an in-house workshop, which is also capable of modifying and improving equipment. The more complicated spare parts are imported from Japan. Improvements in plant layout, etc., are also carried out by the company itself. New equipment (again from Japan) is to be installed during 1993-1994, for which the company hopes to receive some Japanese government support. The main source of finance for the expansion of production, however, is the company's own foreign exchange earnings. The new equipment would among others allow Matsushita to double its battery output.

The company will also install its own power generator, to reduce dependence on the unreliable local electricity supply which often breaks down. Although usually available in the past, electricity has been rationed since October 1992. Some operations (e.g. on part of the radio production lines) therefore have to be closed down temporarily. The generator had, in fact, been in port for several weeks at the time of the UNIDO team visit, but customs procedures were delaying installation.

While Matsushita is making efforts to increase the local content of production through sub-contracts, most inputs (chemicals and zinc for battery production, radio components) are imported at present. In the case of dry batteries, the local content is 20 per cent. Belgium, Singapore and Japan are the most important sources of imported inputs. Inputs are made according to specifications formulated by the parent company. During the 1986-88, serious foreign exchange restrictions made it impossible to acquire sufficient foreign exchange even for the limited amount of inputs needed to cover the restricted demand existing at the time. In order to retain its foothold in the East African market, the parent company guaranteed suppliers' credit to Matsushita EA during these years, and there was also some limited direct support in the form of input purchases from the parent company. These external guarantees again helped in convincing the Government of Tanzania to increase the foreign exchange allocation to the company.

Local inputs mainly consist of packaging materials and the outer jacket of the batteries; these are provided by KIBO Paper and Cannon Metal Box, respectively. Further localization of

inputs is envisaged to save foreign exchange, the short-term target being 50 per cent (mainly battery parts); eventually, it is hoped that localization will reach 90 per cent. The main stated obstacles to further localization are insufficient quality consciousness and quality control facilities in Tanzanian firms. The absence of local production capacity for the more sophisticated inputs, such as radio components (the costliest imported items), would also be an obstacle; but the establishment of local production is unlikely to be an economic proposition in the short or medium term, given the competition of established manufacturers from Asia. Irregular supplies of local inputs are sometimes a problem, as the production of Tanzanian suppliers in turn depends on certain essential imported raw materials, spare parts, etc., for which foreign exchange may be lacking.

In spite of power cuts/power rationing and foreign-exchange related limitations on imports, overall capacity utilization (on the basis of a 45-hour week) was said to be 90 per cent at the time of writing. This was achieved by compensating (through overtime) for time lost due to power cuts, and by keeping equipment in optimal condition through an extensive maintenance system which, apart from the maintenance team, involves all those working in the factory.

Demand for the company's products is such that there is never more than a few days' stock. Matsushita EA dominates the local market for batteries and simple portable radios; for the more sophisticated radio cassette recorders there is heavy competition from East-Asian imports. Although there is competition for the other products as well, quality and servicing are important factors in the preference consumers show for Matsushita products. The company's batteries, e.g., while being far more expensive as imported batteries from China, have maintained their market position due to greater reliability and longer life; and its network of service centers in most of the major towns has been a major factor in winning the radio market from Philips.

In an economic environment which has on the whole been rather unfavorable, in spite of recent liberalization trends, the company has achieved high output levels and its operations have been profitable. It stands out among other enterprises in Tanzania, which often have a capacity utilization rate of 20-25 per cent, and which usually operate with a loss. Particularly under the current situation of power rationing, the company has been demonstrating its resiliency and strength by maintaining the constant output with the unchanged capacity utilization through a special arrangement of working shift adjusted for the power availability.

No doubt, Matsushita EA has easier access to technological and managerial know-how than local firms, and it has been fortunate in receiving temporary support for essential imports during a very difficult period. Its key position in Tanzania's electrical goods industries provides it with leverage vis-a-vis the Government. But much of its success is due to the internal

characteristics of the firm - to the way in which production, labour, finances, etc., are managed. The next chapter will focus on major aspects of the company's management approach.

### 3. MANAGING MATSUSHITA EAST AFRICA

#### 3.1. Management principles

"The companies that have developed and implemented the most effective manufacturing strategies are those characterized by a strongly held set of values and beliefs, i.e. a corporate philosophy. This philosophy or spirit permeates the business from the top floor to the shop floor"<sup>14</sup>.

To understand everyday management practice in the enterprise, it is essential to outline the key principles on which management is based. As indicated above, these principles are applied in all Matsushita subsidiaries. First, there are the "seven principles for daily work". These summarize the basic attitude to work expected from all employees, and are recited at the start of each working day (see Annex II-4). Second, there are the "practical business principles" for the firm's operations: "autonomous management", "co-existence and co-prosperity", and "reasonable profit".

##### - Autonomous management

Each division of the Matsushita company operates to a large extent independently, ensuring maximum flexibility and adaptability to the environment in which the division operates. This does not only mean a great measure of independence and responsibility for the managing directors; every worker is made to understand his/her job and is expected to exercise independent judgement and to take full responsibility. Success depends on the involvement of all; this is a crucial part of the company's management philosophy, that is, "Every employee is an individual entrepreneur."

##### - Co-existence and co-prosperity

Overseas subsidiaries seek a strong involvement in the local economy - through localization of personnel, sub-contracting arrangements and the establishment of a distribution/servicing network. Where local suppliers are considered to have a good potential but need assistance to improve the quality, reliability, etc. of their goods, technical assistance and advice is provided. The same assistance is given to distributors. In the view of the company - diametrically opposed to the "enclave" philosophy of many firms working in EPZs - such involvement will eventually pay itself back because contributing to the local economy helps to ensure a strong long-term foothold in a country.

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<sup>14</sup> E.C. Huges - The Spirit of Manufacturing Excellence, New York 1988, p. 2.

**- Reasonable profit**

A strong cost consciousness and quality consciousness among management and employees helps to maximize profits. A high-quality product, offered at a reasonable price, is likely to be preferred by customers over a possibly cheaper product which is not as reliable. The price of the product is kept at a reasonable level by continuously looking for ways to reduce production costs. It is interesting to note that the company takes a positive view of profit taxes (which it expects of course to be moderate): if these are used to improve a country's social and physical infrastructure, overall development will benefit, and this in turn will increase company sales. This perspective on taxes illustrates the long-term view of operations (the company actually has a "250-year plan" - while this probably exists more as a principle than in actual practice, it is a good indication of the basic attitude underlying its operations).

For overseas operations, the above principles imply:

- Conducting operations in accordance with the host country's economic policies in order to gain maximum political support from the government;

- Promoting technology transfers and the training of local employees;

- Production of goods in local factories that are internationally competitive;

- On the basis of this production, generating sufficient profits from local operations for the running and expansion of the firm.

Putting the principles in practice, the company pays particular attention to three factors: training, customer-orientation and collective management.

**- Education and Training**

"Matsushita makes people before making products". The company devotes much effort to the training of its employees and managers, and to explaining its basic business principles to them. The crucial importance of "making people" was underlined in the workshop discussions. A brief explanation of this principle may be found in Annex II-5.

**- Collective management**

Managers discuss all relevant issues on a daily basis. But such discussions take place at all other levels in the enterprise as well, on a regular basis. Suggestions for improvements from the shop floor are welcomed and implemented; responsibility should be delegated to workers where this is possible.

### - Customer-orientation

Paying close attention to customer needs and to a good system of customer services ensures long-term market shares.

It should be pointed out here that, in emphasizing the essential role of a well-trained and co-operative, motivated labour force, the Matsushita company reflects an attitude common in Japanese enterprise: "human power" is the key to the country's economic success<sup>15</sup>.

### 3.2. In-house application of the management principles

#### - Recruitment and training

The company in principle only recruits workers who are upper primary school graduates (virtually all workers are literate). For technical personnel, previous vocational training is a requirement, and graduation from secondary school for the middle management functions. The educational requirements for managerial and particularly for technical posts imply that women have less of a chance of being recruited, as they are underrepresented in these forms of education. Socio-cultural pressures are an additional obstacle. The company management however insisted that, once they are accepted as employees, women get the same training as men - depending on the job they were recruited for.

Recruits are seldom older than 23; this includes those for managers' posts. The reasons are, first, that newcomers are expected to have an open mind and little previous career experience so that they can easily adapt to the company's environment and above all, to its special work spirit and company philosophy, and second, that employees are expected to stay with the company during their entire career.

Formal qualifications by themselves are not considered sufficient. The aptitude of prospective employees is tested in interviews, and there is also a medical test. After recruitment, all workers receive up to twelve months of (paid) on-the-job training. In the early years of the factory, Japanese instructors were used; now, the on-the-job training is done by factory staff which, as has been indicated above, is largely local. Foremen receive additional training at local vocational training centers and at the Technical College in Dar Es Salaam, as required, or at the High Precision Technology Centre, a public sector training institute in Dar Es Salaam which was established with Matsushita assistance. Such training can take up to two years full-time.

Managers are recruited from among fresh secondary school graduates. Upon their arrival, they are assigned to work on a production line for several months to get acquainted with actual working conditions. This unusual policy has met with a certain

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<sup>15</sup> See, e.g., R.L. Tung - Key to Japan's Economic Strength: Human Power, Lexington/Toronto 1984.

resistance among the newly employed, but all the local managers who went through the experience claim that it was a useful and essential experience for their later career. Prospective managers also have the opportunity to attend seminars on management issues locally.

After a certain period of service, all managing personnel are sent to the parent company's Overseas Training Institute in Japan. Here, they receive full-scale management training through a programme developed by the Matsushita Company. This is essential to fully familiarize the managers with Matsushita's principles and the meaning of the company's policies and organizational system. Local managers, living in Japan during the training programme and observing the working environment and cultural background of their Japanese colleagues, will better understand the policies and the system as applied in their subsidiary about which they may initially have been skeptical and which they may even have found incomprehensible. According to the Managing Director of Matsushita EA, this experience is even more important than the actual skills acquired in training, because local managers set a good example through their positive attitude and high morale when back at work in Tanzania.

Training of workers is, of course, largely concerned with the technical details of the job which the recruit is to fill. But recruits are also introduced to the firm's approach to doing business and internal management - the need to be service and quality-oriented, to be co-operative, to be aware of opportunities to improve the firm's performance. These are embodied in the "seven principles for daily work", which are recited in Swahili at the beginning of the working day. Another set of principles, generally applied in Japanese firms, is transferred on recruits as well: the "5-S's" for keeping a plant clean and well-organized (see Annex II-6)

Apart from initial training, refresher courses are available at all levels. For employees from foreman upward, for example, there are monthly in-house training sessions and evening classes on such subjects as cost reduction, standardization, etc.. Rotation of Japanese managers implies that fresh ideas are brought in at the top level every few years. Promotion within the company is not possible without taking part in courses, and completing a test at the end of them. The personnel and accountancy managers, for example, have in this way "risen through the ranks". At present, training takes up only 0.5 per cent of the company's budget. This does not include the cost and time of on-the-job training and ad-hoc training in the production plants, which is difficult to calculate.

Beginning this year, a new training programme is to be introduced which will centre on the Total Productive Maintenance System (TPM). With courses spread over three years, this training programme will familiarize staff at all levels with TPM, an all-in approach to production management which aims at "zero defects, zero downtime, zero accidents, zero absenteeism". The management



seems confident that TPM is feasible<sup>16</sup>. In a less sophisticated form, an all-in approach may already be said to be in use in Matsushita EA, as will be discussed in the following paragraphs.

**- Wages, benefits, working conditions**

The minimum wage paid by Matsushita EA is Tshs 5,500. This is slightly above average for the sector, though not very high compared with wages paid in, among others, parastatals. But wages are paid regularly (this is not always the case elsewhere). There is a range of services and benefits available to workers: a cafeteria providing free lunch, a transport service, uniforms, showers, bonuses, a benevolent fund (to which the workers also make their own contribution). There are four weeks of holidays (as required by law) + public holidays. A transport allowance is given for the holidays. Women get three months of maternity leave. Occasionally, the firm provides loans to workers.

Attention is paid to health care. There is a factory clinic with a doctor and two nurses, which also treats workers' families. The cost of health care to the company often exceeds an employee's wages. The Managing Director insists that generous benefits are essential, because protecting their physical and mental health is an important factor in sustaining efficiency and productivity in the long run. A higher take-home wage may seem more appealing, but the wide range of benefits is seen as a better guarantee of an employee's security and peace of mind.

The company is particularly keen on safety in the production plant. It is compulsory to analyze accidents causing injuries to identify the causes, so that similar accidents can be prevented in the future. Protective clothing is issued to people in the battery plant who are involved in zinc smelting and punching or who work with chemicals. There is an extra milk ration for people working with chemicals. Protective clothing is often not used because of the heat (there is no air conditioning in the plants). The company is working on lighter face masks, and the present smelting machine (which causes a lot of fumes) is to be replaced by an electric smelting machine as part of the overall equipment modernization.

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<sup>16</sup> This optimistic attitude would be supported by the UNIDO study quoted above: "Management in collectivist organizations has...been conceptualized and implemented in the 'total quality management' (TQM) movement which has been implemented in many industrial organizations in several countries...TQM principles are not Japanese culture-bound...Indeed, TQM principles would 'fit' the culture of LDCs extraordinarily well, with their emphasis on working groups, relationships between members of working groups and between working groups, organizational cohesion and consensus, and managerial responsibility for systemic causes of errors." (UNIDO - op. cit., p.11-12).

While the package of benefits is generous, similar packages are available in some local factories. There must therefore be additional reasons for the fact that Matsushita employees are seldom absent and seldom change jobs - it is not uncommon for people, especially at the managerial level, to have worked with Matsushita EA for most of the time since the firm was established.

Lifetime employment is a feature common to Japanese firms, and seems a feature of Matsushita EA as well. The underlying reasons seem similar to those in other Japanese firms.

One reason is that the factory is evidently reluctant to lay off workers during difficult business periods, such as in the early and mid-1980s. Instead, other ways of reducing costs are explored first, and recruitment is stopped. In spite of such measures employment was more than halved from the peak of 976 in 1980 to the lowest of 447 in 1990 (see Annex II-7). A number of employees left the firm voluntarily; and the management claims that no personnel was dismissed.

It is nevertheless clear, from the figures of output per worker, that the firm did accept a heavy reduction in output per worker during the recession years (in the battery factory, production per worker went down from 187,000 in 1981 to 75,000 in 1986), although lay-offs could have kept the productivity figure up. (Recruitment has certainly been frozen since the early 1980s. As a consequence, productivity levels are now higher than ever before).

Another reason why employees stay on is that they are more than "cogs in the machine". Employees are encouraged to take initiatives, and suggestions for improving the firm's performance are welcomed. Small rewards are given for useful suggestions. Apart from having relative material security, employees therefore also know that their contribution matters. These factors combined create a sense of loyalty to the company.

#### **- Management style**

Top managers (the Managing Director and the Divisional Heads) have daily meetings to discuss current issues and to solve current problems. Workers also regularly discuss production problems with foremen and supervisors. While the involvement of workers in these discussions should not be overrated, this has resulted in a number of improvements. Examples include an adaptation of one of the radio models to reduce the likelihood of short circuits, time and paper savings through simplified production administration, better plant layout and compensation for power cuts by working overtime.

Overall objectives are set by the management in its "yearly business plan". Achievement of this plan is checked on a daily, weekly and monthly basis. Financial performance is checked on a monthly basis, on the basis of rigorous internal auditing. Great

importance is attached to cost-consciousness, and actual production costs are continuously checked against targets.

Transparency of management is considered essential. Management decisions are explained to the workers. It is emphasized that making employees understand decisions and the actions to be taken on that basis is the best way of maximizing their contribution. Patience, persuasion and a good example are therefore more effective than simply giving orders.

Production and production cost graphs, kept up-to-date, are prominently displayed in the plants. In addition, examples of production cost cuts are displayed with a detailed and graphic explanation of which costs were cut, and how. In several cases, these cost cuts were suggested by production line workers. Photo-displays of "before/after" situations indicate aspects of production and housekeeping which according to plant management require improvement, and such action as has been taken. These improvements were not the result of special processes or technologies, or of new investments, but of applying the 5-S's (see Annex II-6).

While there are specialized maintenance and quality control units, all employees are expected to display an awareness of these issues. The immediate responsibility for keeping machinery clean and in good working order lies with the machine operators and machine keepers. Moreover, the plant managers exercise continuous control, and basic control of machinery is carried out daily by the maintenance team. During the Christmas holidays, a major overhaul and cleaning operation takes place.

The maintenance engineering section is not a separate unit, but belongs to the dry battery department. At present, 20 technicians, all local, work there. According to the Director of Planning and Production, who directly supervises the section, the equipment and the skill levels are such that the section can handle almost all work (repairs, maintenance, expansions) required on the production lines. It is thoroughly understood that new machinery by itself will not increase productivity without proper maintenance routines and engineering capacity.

Quality control takes place at all production stages, from the arrival of inputs to packaging. On the production line, some of the workers are specifically assigned the task of checking quality (Quality Assurance Groups). Apart from this, samples are taken hourly and daily for testing in the quality control laboratory. Thanks to the high standards which the parent company sets for inputs and the many checks during production, defective products are very uncommon (0.2 per cent for radios, 0.02 per cent for batteries).

### **3.3. External transfers of the management and human resource development concepts**

In various ways, the concepts used to manage Matsushita EA and to train its workforce have been transferred to firms and

individuals in Tanzania. This section is limited to transfers that have taken or are taking place in an institutionalized form. There is no information on the extent to which skills acquired within the company have been useful to employees who have left Matsushita EA to accept work elsewhere or start their own business. It appears that those who leave the company voluntarily often do so because they expect to be able to earn a higher income in trading. In that case, management principles such as cost-consciousness would still be useful. However, the turnover of employees is low, as pointed out before, and therefore the diffusion of these skills would be limited.

Given the fact that the production processes used in the electrical goods industry are rather sophisticated and capital-intensive by Tanzanian standards, and that the competition of established producers (such as Matsushita EA) in the relatively limited market would be very heavy, it is not surprising that there have been no spin-offs in the form of local electrical goods enterprises. The enterprise is too untypical, in the context of Tanzania's manufacturing structure.

Transfers of the management and human resource development concepts, then, have taken place in the following ways:

**- Support to agents and sub-contractors**

Matsushita EA has a network of agents in the larger towns in Tanzania. Apart from selling the company's products, these are also service centers where radios can be repaired. The agents receive technical training from the company. They are also made aware of the need to cater for the customer's wishes, and are expected to report back to company headquarters in Dar Es Salaam on a monthly basis on relevant matters (consumer complaints, servicing problems, etc.). Agents also receive regular visits from a headquarters representative.

The company also has intensive contacts with its sub-contractors. Apart from purely technical advice on the quality of inputs required by Matsushita EA, the company provides advice on production management, consumer services etc. Thus, not only the quality of the goods supplied to Matsushita EA is improved; the sub-contractors also learn to cope better with the external environment, leading to fewer disruptions of production (which is also to the advantage of Matsushita EA), and in the KIBO factory there has been an overall improvement in the quality of packaging materials as well as in the management's understanding of consumer needs. The higher-level training facilities in Japan are also available for sub-contractors<sup>17</sup>.

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<sup>17</sup> Once again, the approach used by Matsushita in its relations with sub-contractors and agents is common in Japan: "Japanese manufacturers have made considerable efforts in such areas as assisting suppliers to initiate TQC (total quality control) programs, helping them to introduce various KAIZEN (continuous gradual improvement) programs such as suggestion

### - The High Precision Technology Centre

The High Precision Technology Centre (HPTC) was established by the Tanzanian Government and Matsushita Electric (Japan) in 1981. The Centre was managed under the supervision of Japanese staff, but has now become an official training institute of the Ministry of Industries and Trade, staffed totally by Tanzanians. (The head of the electrical engineering department is female.)

The HPTC is open for trainees from all manufacturing enterprises in Tanzania. It offers college-level training programmes in mechanical engineering (precision machining, tool and die making, precision pressed parts manufacturing) and electrical engineering (electrical control of production machinery). Courses last two years and are open only to employees of manufacturing firms which already have at least two years of experience as well as a technical background. The firms act as sponsors for the students. The HPTC has only a limited intake capacity. In 1991, for example, there were seven students in the electrical engineering programme, one of them female. Total capacity in both programmes is 20.

Although a tertiary-level establishment, the HPTC puts strong emphasis on practical work to complement the theoretical courses that are provided. In this respect, it seems better adapted to the actual needs of the manufacturing sector than most of the other tertiary-level establishments in Tanzania. These either tend to provide an engineering programme which is too theoretical or (as in the case of the training institutes attached to the parastatals) appear to be geared to the provision of support services of public sector enterprises rather than to systematic human resource development.

### 3.4. Crossing cultural boundaries

A crucial question - asked repeatedly during the Workshops held at Matsushita EA - is how the management principles, which have been developed in Japan and first put into practice there, have been adapted to Tanzanian situation. The implication was usually that differences in culture could be a major obstacle to transferring Japanese management and training methods to the country.

The mission did not witness any actual training sessions - these are held in Swahili. However, it was clear from talks with the supervisors and from their replies during the discussion sessions that most of the training is concerned with technical

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programs and small group activities, and maintaining better communication on product quality, quantity and delivery schedules. As a result, suppliers have been able to improve their working procedures..." (Masaaki Imai - Kaizen, the Key to Japan's Competitive Success, New York etc. 1986, p. 212)

issues which are not culture-specific. The employees are also taught, as indicated above, the basics of the "Matsushita philosophy" and some principles which Japanese firms have in common. Much of this seems common sense - co-operation, modesty, awareness of opportunities to improve the firm's performance (which starts with simple attention to details: preventing waste, keeping machines clean, etc). Getting employees to accept and internalize these principles is probably the most difficult, time-consuming part of training.

The fact that these principles have been internalized at least to a degree is probably not the result of special training methods used by factory staff. It could again be called common sense, psychological common sense, in this case. Supervisors, section heads and managers are patient when instructing workers (this sort of persistence can be seen as one aspect of the long-term view of doing business which is inherent in the company's philosophy). Higher-level personnel is also "front-line oriented"; in other words, they are regularly present in the plant and give a good example. The fact that trainees and most factory staff speak a common language and share a culture would of course be an additional positive factor. Moreover, the employees have a high degree of job security (long-term employment, salaries paid on time) and a good benefits package.

All these factors combined would give employees a feeling of "belonging" and this would increase motivation. It is important, in this context, to emphasize that Tanzanian culture is still group-oriented rather than individualistic. "In LDCs, moral responsibilities to others are more important than self-actualization...Thus enterprises are expected to provide more than wages...[and] managers have a relatively paternal style of relationship based on a concern for the network of people for whom they are responsible"<sup>18</sup>. The fact that Japanese culture shares this "collectivist nature of organization culture"<sup>19</sup> would help to increase employee motivation in Matsushita EA.

Interestingly, the document quoted in the previous paragraph also emphasizes that "workers do not cherish the values of participatory management such as 'creativity' and 'independence'"<sup>20</sup> in LDCs. Authoritarianism is expected; this is blamed on the fundamental lack of security at the level of basic physiological needs. Once employees are confident that their basic needs will be met, stimuli from management may bring about a more active, participatory attitude<sup>21</sup>. There were indications, in discussions with the enterprise management, that Matsushita EA has not fully succeeded in making "co-managers" of its

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<sup>18</sup> UNIDO, op. cit., p. 9.

<sup>19</sup> UNIDO, op. cit., p. 9.

<sup>20</sup> UNIDO, op. cit., p. 10.

<sup>21</sup> UNIDO, op. cit., p. 10.

employees, as demanded by the firm's basic philosophy; but its workers have contributed a number of useful ideas, and they are motivated, as indicated by low absenteeism rates and high productivity levels. Worker productivity, according to the planning and production manager, is not lower than in Asian subsidiaries of Matsushita Electric where he has previously worked.

#### **4. CONCLUSIONS AND SUGGESTIONS FOR FOLLOW-UP ACTION**

##### **4.1 Concluding remarks**

The case of Matsushita EA has shown that a firm which is internally strong - as a consequence of good management, strong leadership and solid, continuous training - will have also developed a considerable capability for surviving in a hard external environment. Of course, the firm had a "headstart" in that it has benefitted from the vast technological and managerial know-how of the parent firm, and has been given material support during a difficult period. And of course, it is a firm which is untypical of the Tanzanian manufacturing sector in terms of size and technological complexity.

Even so, many aspects of the Matsushita approach to management and HRD would probably be valid in any kind of business setting, and it would be generally worthwhile for Tanzanian manufacturing firms - whose interest in alternative approaches to management and HRD was clearly demonstrated during the workshops - to become more closely acquainted with this approach.

The reason why much of the approach is likely to be valid in any kind of setting is that its essential elements are not tied up with the firm's size and level of technology. The basis of the approach is an attitude, a mentality, which sees co-operation rather than competition or command as the major internal driving force of an enterprise, which demands that managers set a good example, strives for continuous improvements in skill levels, pays attention to detail and quality, is service-oriented towards its consumers, and focuses on long-term development. These principles can be understood by anyone, and have a strong common-sense element in them<sup>22</sup>; they can only be called specific to Japanese culture in that Japan has cultivated them throughout its long history. (For this reason, the training of trainers who transmit these principles to employees in a non-Japanese firm may have to include a certain direct experience in Japan; otherwise it may be difficult to fully grasp the significance these principles have had for economic development in that country).

The major difficulty in successfully internalizing such principles - by a firm and its individual employees - may lie in the long-term perspective required and in the striving for continuous improvement, two closely related concepts. The economic and policy environment which has prevailed in Tanzania in the past decades may often have discouraged long-term thinking or attempts to improve a firm's performance and its employees

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<sup>22</sup> An example: in a major Tanzanian industry, food processing, attention to hygiene is of paramount importance. This should make it very easy to adopt the 5-S philosophy, with its emphasis on cleanliness, in striving for export-quality products.



skills <sup>23</sup> (and much of the foreign expertise received over the years seems to have been mainly concerned with short-term problem solving and day-to-day operations as well). But it should be pointed out that the emphasis in Japanese culture on continuously struggling for improvement and on thinking ahead is precisely the result of having to cope with numerous crises resulting, in this case, from a rather hostile physical environment with few natural resources and often adverse climatic conditions.

A long-term view is essential for manufacturing development, and today's more liberal business environment in Tanzania should stimulate it - not in the least because increased competition will require entrepreneurs to be a step ahead of their competitors. Matsushita EA invests much time in transferring the required know-how, skills and attitudes to its recruits, and follow-up training is the norm. HRD in a firm should be a continuous process, a form of "permanent education", because it is a key element in maintaining competitiveness. It is not possible to "rest on one's laurels" without losing this.

Matsushita EA appears to have been more successful than many other foreign firms in transferring know-how and skills to local personnel. Localization is a firm policy, and it is implemented. It stops at the top management level; this is unlikely to change as the cohesion of Matsushita Electric as a transnational company may benefit from having top managers with a similar background. For Tanzanian enterprises, however, the positive effects of the Matsushita approach to localization can serve as an example of how future agreements with foreign investors could be improved with regard to know-how transfer.

The firm's ability to successfully localize such a large part of its labour force and management is not only due to the great attention given to training; it is to an extent also due to its "collectivist" and somewhat paternalistic approach in personnel management, which is common in Japanese culture and fits in with local culture. This helps to motivate employees, and thus contributes to increasing their productivity. Whether it is always possible to make "co-managers" of motivated workers is a different question, and one which has not been completely answered by Matsushita EA either.

Matsushita EA has strived to increase the local content of products, but so far been less successful in localizing the production of inputs, which is to a large extent due to the specialized nature of the products required. Thus, the external learning effects are limited to a few sub-contracting firms and a number of agents. It is conceivable that, for example, a food processing firm which localizes its production using the methods of advising sub-contractors, etc., described in Section 3.3 would

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<sup>23</sup> During the Workshops, one Tanzanian factory manager expressed the prevailing attitude as follows: "In Tanzania, we don't buy clothes until the baby is born."

make a greater contribution to the diffusion of know-how in the Tanzanian economy.

The fact that many elements of the Matsushita approach are neither dependent on size nor on technology should make it of particular interest to the many small-scale industries (SSIs) in Tanzania. Much of the growth potential of the manufacturing sector is in SSI. The special problem of SSI is of course that its financial and human resources are limited. Setting up a system of personnel training and refresher courses will often be beyond the means and capabilities of the entrepreneur, and they are unlikely to benefit from know-how transfers by foreign investors.

It is therefore especially important for SSI entrepreneurs to join forces and to enter into a dialogue with the existing institutions in the relevant areas of education and training to improve the quality of HRD; more attention should also be paid to sub-contracting, which is still uncommon in Tanzania, and which can serve as a vehicle for know-how transfer, as Matsushita EA has shown. Higher-level training, whether for small or large enterprises, could benefit from (sub-)regional co-operation. In the various possible approaches to the transfer of skills and management know-how, the Chamber of Commerce and its sister organizations in neighboring countries could play a catalytic and co-ordinating role.

There is no Japanese or Asian "miracle". It should be stressed again, in the case of Matsushita EA, that the presence of a strong parent company has been of great importance in establishing a presence in Tanzania, and in overcoming a number of severe constraints in the local business environment; it could also be an important psychological factor in negotiations of the management with the Tanzanian authorities. The main lesson of the Matsushita approach to management and human resource development, however, is that the "internal environment" of a firm is at least as important in explaining its success or failure. And while professional know-how and skills are an essential element, the high quality of the "internal environment" in Matsushita EA is the result of applying concepts which are basically simple, and many of which have a direct bearing on industrial HRD: co-operation among managers and between managers and employees, giving a good example, sharing responsibility, a willingness to learn new and to innovate working conditions continuously.

#### **4.2 Suggestions for follow-up activities**

The Workshops at Matsushita EA and the present case study represent a first attempt to explore the role played by management style as well as the approach to HRD in general in the performance of industrial firms, and to stimulate the exchange of ideas about the subject, especially among industrial managers. The importance of such exchanges was stressed by the Principal Secretary of the Ministry of Industries and Trade in his opening speech of the Workshops during which he pointed out that

"development of local capabilities through fostering entrepreneurship by training, retraining and exposure to new ideas and techniques in business management, is an integral factor in our economic reform".

The responses to the Workshops show that the majority of the participants greatly appreciated the opportunity to become acquainted with the management style of a multi-national firm as "an eye opener to modern management", and there were a number of requests for UNIDO to organize a more extensive programme during which actual practical management skills would be transferred to local firms.

Since the government officials and Tanzanian managers showed great interest in the Workshops as well as the further extension of a programme for management training, it was clear that a follow-up would be desirable. Follow-up activities could take various forms, the most obvious of which would be to organize Workshops in Tanzania which treat the key aspects of the Matsushita approach, or Japanese methods in general, in greater depth, allowing local managers from other industrial enterprises to actually put these principles into practice in their own firm. While such Workshops could be coordinated by UNIDO, the actual expertise would be provided by the relevant Japanese companies. Other types of follow-up could include:

- Similar workshops held in other SSA countries where Japanese manufacturing firms are located, in connection with a case study along the lines of the present study;
- An international conference comparing the experience with Japanese management and training methods in the different developing regions: Africa, the Arab countries, Asia and Latin America;
- A similar conference comparing the management and training methods of SSA subsidiaries of manufacturing firms from the most important industrialized countries;
- A comparative study summarizing the various management and training methods, and serving as a basis for future UNIDO work;
- An assessment by UNIDO of its present training programmes for developing countries to establish whether sufficient attention is paid to mentality-related/attitudinal issues (leadership, transparency of management, employee motivation, continuous learning).

**ANNEX I**

**Information on the Workshops**

**Annex I-1. The Programme of the Workshops**

**Workshops on Industrial Management and Training, Dar Es Salaam, United Republic of Tanzania, 25-27 January, 1992**

**Venue: Matsushita Electric Company (East Africa) Ltd., Dar Es Salaam**

**Agenda**

- 8.30**      **Arrival of participants at the Matsushita EA plant**
- Registration**
- 9:00**      **Opening speech by the Acting Principal Secretary, Ministry of Industry and Trade, Mr. W. Nyachia (first day only)**
- Opening remarks by the UNIDO Country Director, Mr. A. Krassiakov**
- Briefing on the Workshop schedule by UNIDO Headquarters team, Mr. M. Matsushita, Industrial Development Officer, and Mr. P. Hesp, UNIDO Consultant**
- 9:30**      **Lectures by Matsushita EA staff Mr. K. Muto, Managing Director, Mr. S. Yamawaki, Marketing Manager, and Mr. A. Alidina, Accounts Manager**
- 10:30**     **Break**
- 10:45**     **Video (life of Konosuke Matsushita, the founder of the Matsushita Electric Company, and the development of the company)**
- 11:30**     **Factory tour (battery and radio plants)**
- 12:30**     **Lunch**
- 13:30**     **Lecture by the Matsushita EA Quality Control Manager, Mr. C. Masanja**
- 14:00**     **Discussion session**
- 16:00**     **Closing of the Workshop**

**Annex I-2. List of Participants in the Workshops****Monday 25 January 1993**

Mr. M. Benedict	Radio Tanzania
Mr. E. L. Bohella	Ubungo Farm Implements Ltd., DSM
Mr. E. Hanti	Ministry of Industries, DSM
Mr. H.J. Kaisi	Tanzania/Development Dialogue (SADCC publication), DSM
Mr. C. Kashangaki	Afro Cooling Systems Ltd., DSM
Mr. I.A. Katanda	Ministry of Defence, DSM
Mr. P.P. Kazimbaya	Tanzania High Precision Technology Centre, DSM
Mr. H.M. Khatib	Small Scale Industries Corp., Zanzibar
Mrs. I.M.S. Komba	NDC, DSM
Mr. H.S. Korosho	Tanzania Portland Cement Co. Ltd., DSM
Mr. E.G. Mandawa	Tanganyika Tegry (Plastics)
Mr. Mbegha	Shihata
Mr. R.O. Mdundu	Ubungo Farm Implements (UFI), DSM
Mr. H.M. Mlawa	University of DSM
Mr. H. Mlutta	Auto Mech Ltd., DSM
Mr. A.R. Mohamed	Ministry of Trade, Industries & Marketing, Zanzibar
Mr. J. Msanjo	Kibo Paper Industries, DSM
Mr. R.H. Msoffe	Japan International Cooperation Agency (Tanzania Office), DSM

Mr. K. Msuya	Auto Mech. Ltd., DSM
Mr. S.F. Mwalongo	Tanzania Ubungo Spinning Mill Ltd., DSM
Ms. L. Mwinyikondo	Blankets Manufacturers Ltd., DSM
Mr. J.N.M. Mwogosi	Polysacks Co. Ltd., DSM
Ms. P.S. Mushi	Tanzania National Chemical Industries, DSM
Mr. L.D. Nyella	Polysacks Co. Ltd., DSM
Mr. S.R. Sombi	Tanzania / Keko Pharmaceutical Industries Ltd., DSM
Mr. R. Swamy	Chief Technical Engineer of UNIDO project, DSM
Mr. M.S. Teheman	UHURU/MZALENDO, DSM
<u>Tuesday 26 January 1993</u>	
Mr. R.A. Ahungu	T.C.C. ITD, DSM
Ms. G. Alson	Tanzania Cigarette Co. Ltd., DSM
Mr. J. Giligita	High Precision Technology Centre, DSM
Mr. J.M. Kabyemera	National Eng. Co. Ltd., DSM
Mr. N. Karamagi	Tanzania Portland Cement Co. Ltd., DSM
Mr. H.E. Kavishe	NDC, DSM
Mr. A.L. Kippa	NECO, DSM
Mr. F.Y. Komba	Tanzania Keko Pharmaceutical Industries Ltd., DSM
Mr. L.A. Lipumba	Kibo Paper Industries Ltd., DSM
Mr. V.M.K. Lyakurwa	Kibo Paper Industries Ltd., DSM

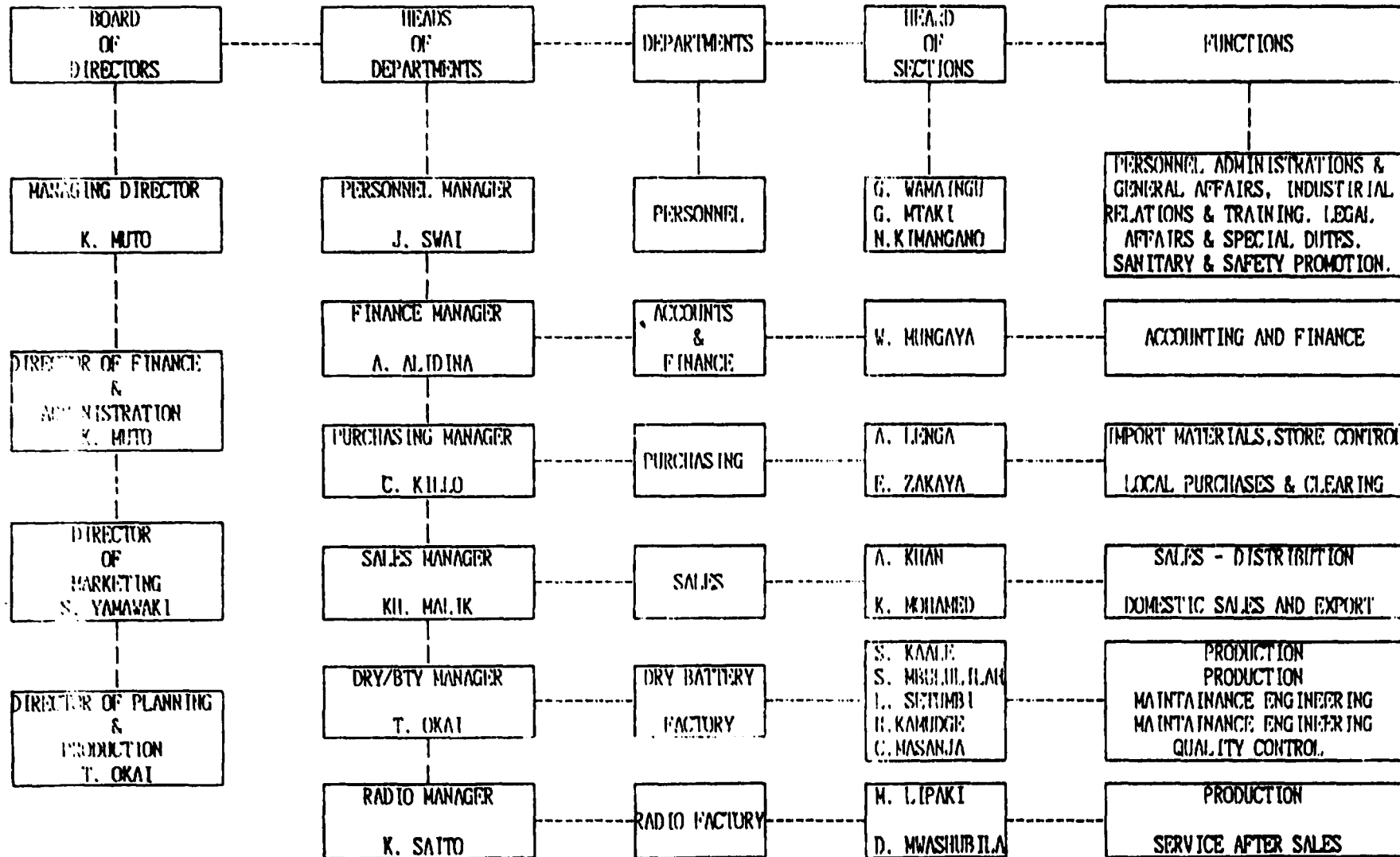
Mr. P. Lyimo	Afro Cooling Systems Ltd., DSM
Mr. D.C. Mchangilla	NDC, DSM
Mr. A. Michael	National Bicycle Co., DSM
Ms. R.L. Mlaki	Tanganyika Tegry Plastics Ltd., DSM
Mr. J.N. Msabaha	Tanzania/HPTC, DSM
Mr. H.R. Muya	SIDO Common Facility Foundry, DSM
Mr. A.J. Mwakatumbula	National Bicycles Co. Ltd., DSM
Mr. A.M. Mwakisese	Friendship Textile Mill Ltd., DSM
Mr. J.K. Nassir	T.T.R. & Co. Ltd., DSM
Mr. O.L. Ngungwe	Morogoro Canvas Mill Ltd., Morogoro
Mr. P.M. Rugemalira	National Bicycles Co. Ltd., DSM
Mr. S.A. Sadallah	TEXCO, DSM
Mr. M.A. Silima	Ministry of Trade, Industries & Marketing, Zanzibar
<u>Wednesday 27 January 1993</u>	
Mr. Z. Aloyce	SIDO, DSM
Mr. D. Chelele	Kibo Paper Industries, DSM
Mr. S.D. Chugu	HPTC, DSM
Mr. S.M. Edmund	Mbeya Textile Mill Ltd., Mbeya
Mr. G.E. Gabone	NDC, DSM
Mr. G.J. Gingi	Afro Cooling Systems Ltd., DSM
Mr. J.M. Kadu	Shelys Ltd., DSM
Mr. A.A. Kanenda	High Precision Technology Centre, DSM



Mr. A.A. Kibamba	National Printing Co. Ltd., DSM
Mr. E. Lushinge	Tanzania Packages Manufacturers Ltd., Morogoro
Mr. L. Malimi	Kibo Paper Industries, DSM
Mr. A. Mamuya	Arusha Galvanising Co. Ltd., Arusha 26
Mr. D.A. Mchopa	Morogoro Canvas Mill, DSM
Mrs. V.J. Minja	Ubungo Spinning Mill Ltd., DSM
Mr. E. Mkwizu	Carnaudmetalbox, DSM
Mr. S.I. Mpambalioto	Friendship Textile Mill Ltd., DSM
Mr. E.M. Mshana	SIDO, DSM
Mr. N.D. Mhenga	Tanzania Packages Manufacturers Ltd., Morogoro
Mr. E. Mubirigi	High Precision Technology Centre, DSM
Mr. G.J. Nasari	Tanzania Twiga Cement, DSM
Ms. O.U. Patima	UNIDO Project, Zanzibar
Mr. R. S. Prasad	Tanzania Ubungo Spinning Mill Ltd., DSM
Mr. E. Robert	M/s. Wakulima Eng. Co. Ltd., Arusha
Mr. A. Sanga	NDC, DSM
Mr. V. Seria	Tanzania Packages Manufacturers Ltd., DSM
Mr. J.G. Shah	Sumaria Holdings Ltd., DSM
Mr. M.N. Vincent	Radio Tanzania (RTD), DSM

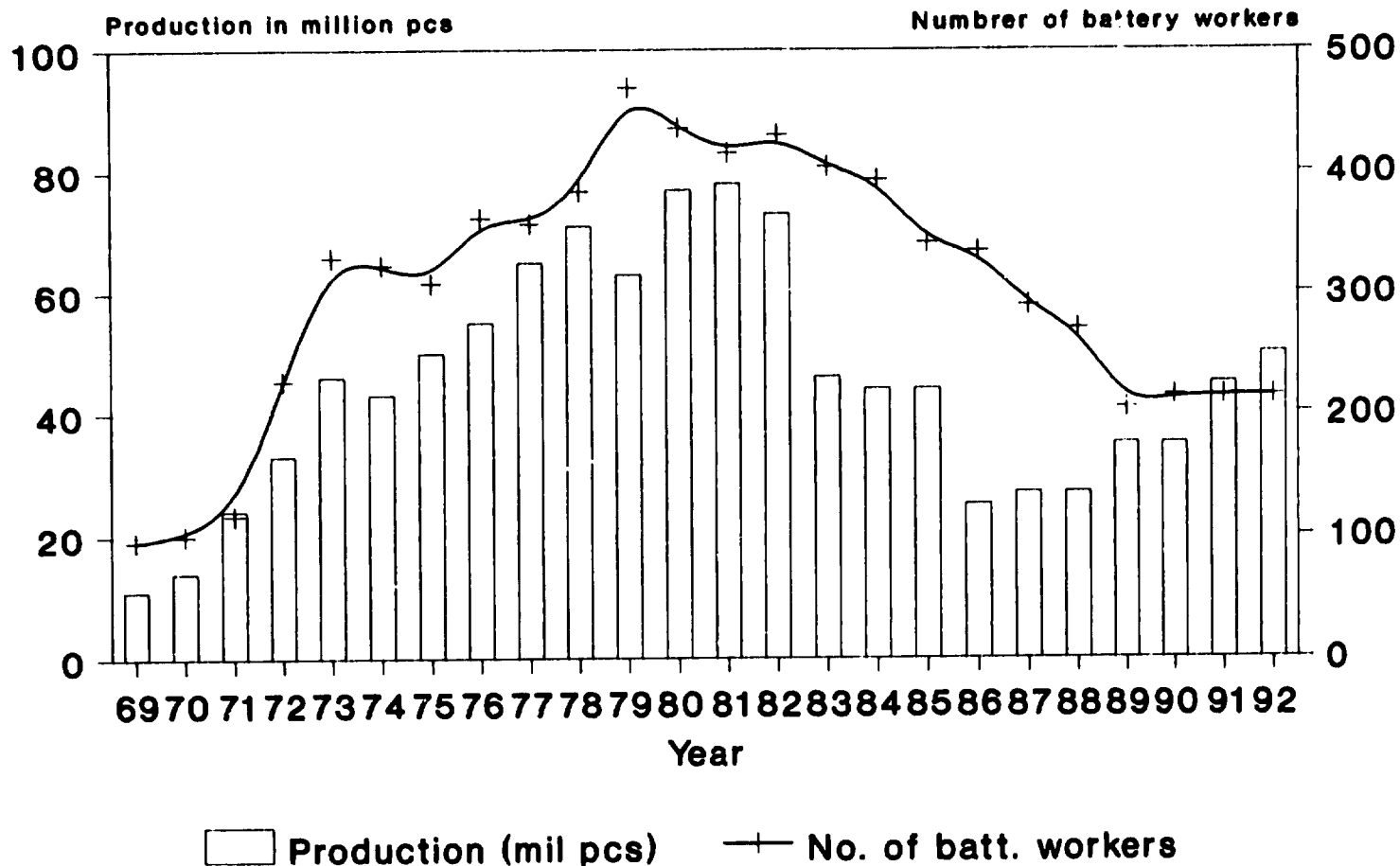
**Annex II**  
**Information on Matsushita**  
**Electric Company (E.A.) Ltd.**

MATSUSHITA ELECTRIC COMPANY (E. A.) LIMITED  
ORGANIZATION CHART AS AT 1ST. OCTOBER 1992.



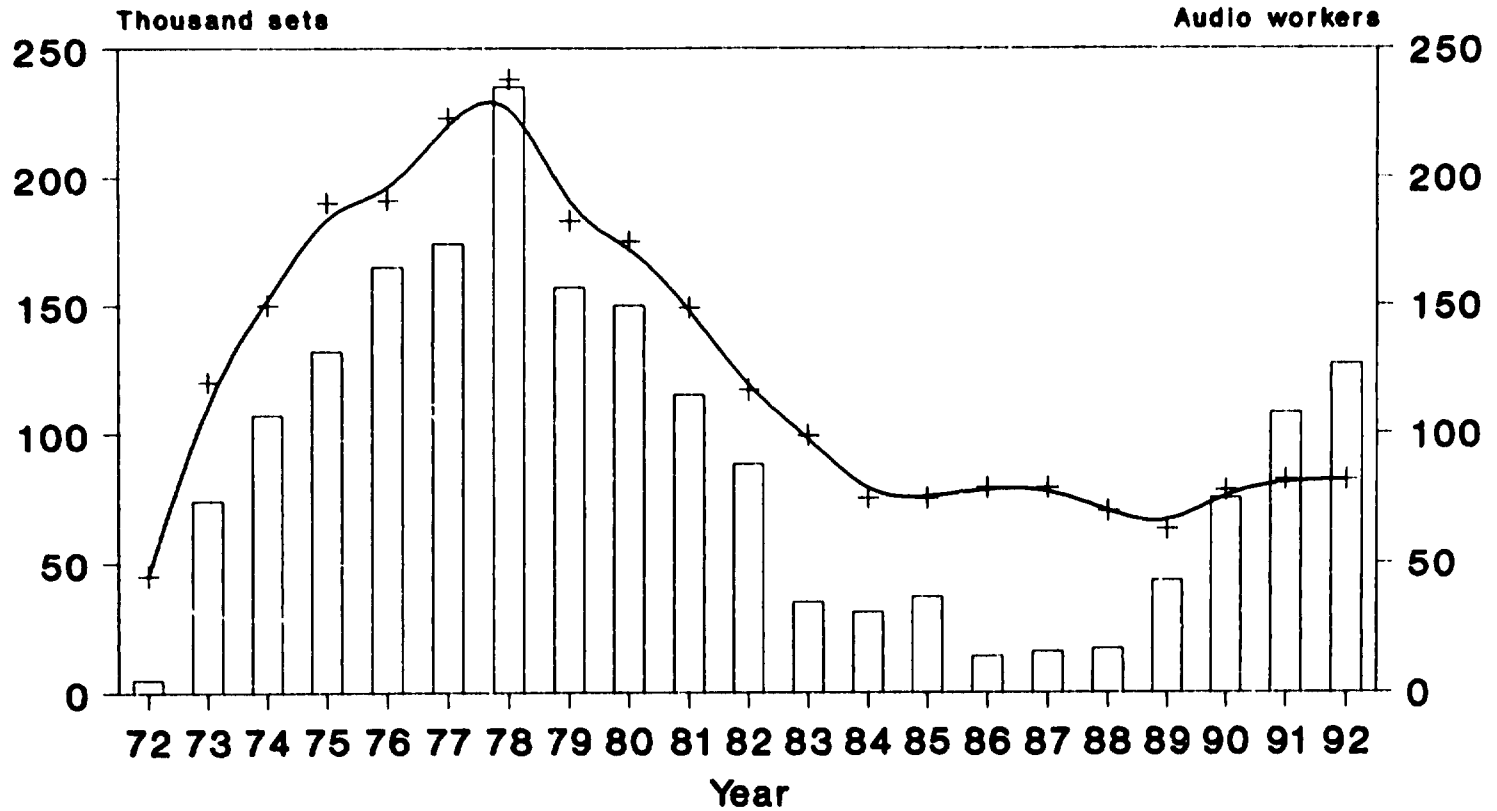
Annex II-1. Matsushita EA, Organization Chart

## Annex II-2 Production and Workers of Dry Batteries, 1969 - 1992



Note: Production data for 1992, estimate

## Annex II-3 Production and Workers of Audio Products, 1972 - 1992



Prod. of audio sets
  + No. of audio workers

Note: Production data for 1992, estimate

**Annex II-4. The Basic Attitudes and Seven Principles for Daily Work at Matsushita EA**

- 1. National service through industry.**  
(Tujibidisha tuinue taifa letu.)

Our purpose shall be not solely to gain wealth nor to display industrial strength, but to contribute to the progress and welfare of the community and nation.

- 2. Fairness.**  
(Tuwe wahaki na usawa katika matendo yetu.)

We shall be fair and just in all our business and individual dealings. Without this spirit, no man can win respect nor can he respect himself, no matter how wise or capable he may be.

- 3. Harmony and cooperation.**  
(Tufanye kazi pamoja kwa kushirikiana.)

Alone we are weak, together we are strong. We shall work together as a family in mutual trust and responsibility. An association of talented men is but an unruly mob unless each member is imbued with this spirit.

- 4. Struggle for betterment.**  
(Tujitahidi ili tupate elimu na maisha bora.)

It shall be our policy to encourage trust and self-reliance, that each may gain self-respect through his own endeavor and to struggle hard for betterment. Without this spirit, true peace and progress cannot be achieved.

- 5. Courtesy and humility.**  
(Tuwe wapole na kuheshimiana wote.)

We shall respect the rights of others. We shall be cordial and modest. We shall praise and encourage freely. Without this spirit there is no social order.

- 6. Adjustment and assimilation.**  
(Tuzingatia maendeleo na ustawi wa kisasa.)

Progress cannot be achieved unless we adjust to the ever changing conditions around us. As the world moves forward, we must keep in step.

- 7. Gratitude.**  
(Tushukuru kwa tupatacho.)

We shall repay the kindness of our associates, our community, our nation, and our friends in other countries, with gratitude. This spirit of gratitude will give us peace, joy and unlimited strength to overcome all difficulties.

**Annex II-5. Making People Before Making Products**

"Of all the resources that are necessary to run a corporation, I believe that the human factor is the most important. It is no exaggeration to say that the quality of a company is determined by the people who staff it. No matter how well organized it may look on paper or no matter how advanced its management techniques are, a corporation will not prosper unless its managers and employees can effectively use the organization or techniques. The same is true of capital, plant and equipment, or materials.

More than sixty years ago, when Matsushita Electric was still a small firm, I used to tell my employees: "If a customer ever asks you what we are making, you should reply, 'We manufacture electric fixtures, but people are our most important products.'" Any company has a mission to perform in society. In the case of Matsushita Electric, it is its mission to produce excellent appliances in large quantities at reasonable costs. Before anything else, however, we need excellent people who can help fulfill our social mission. But such people are seldom available ready-made. All our schools provide are the raw materials, so to speak. It is up to the employer to polish, process, and assemble young people to make them into high-caliber workers. That is precisely what I meant when I told my staff the Matsushita Electric makes people before it makes home appliances.

Management must make a conscious effort to create a corporate environment conducive to the personal growth of each employee. The first thing necessary is to articulate the philosophy of management based on clear recognition of the corporate mission in society. Mere rote memorization of abstract principles is not enough, however. The company philosophy must be installed in the mind of each worker until it becomes part and parcel of his blood. Then managers must apply those principles in the daily conduct of business. This is much easier said than done, but everything they say and do must reflect the ethos of the organization that they represent. Employees will naturally follow their example."

Konosuke Matsushita

**Annex II-6. The 5-S Movement, and its Application in Matsushita EA**

The 5-S Movement takes its name from the initials of five Japanese words that start with s: seiri, seiton, seiso, seiketsu and shitsuke. As part of the visual management of an overall programme, signs that repeat the steps are often posted in the workshop.

**Step 1. seiri (straighten up)**

Differentiate between the necessary and the unnecessary and discard the unnecessary.

**Step 2. seiton (put things in order)**

Things must be kept in order so that they are ready for use when needed.

**Step 3. seiso (clean up)**

Keep the workplace clean.

**Step 4. seiketsu (personal cleanliness)**

Make it a habit to be clean and tidy, starting with your own person.

**Step 5. shitsuke (discipline)**

Follow procedures in the workshop.

(Source: Masaaki Imai - Kaizen, the Key to Japan's Competitive Success, New York etc., 1986, Appendix B)

**Example:**

On the factory bulletin board of Matsushita EA, a pair of photos was displayed showing an office before and after the application of the principles of organization and neatness. Before action was taken the office made a disorderly impression - the furniture positioned anyhow, papers piled up and spread all over the desk. After action was taken, the office furniture was well organized and the papers were filed properly, leaving the desk largely empty.

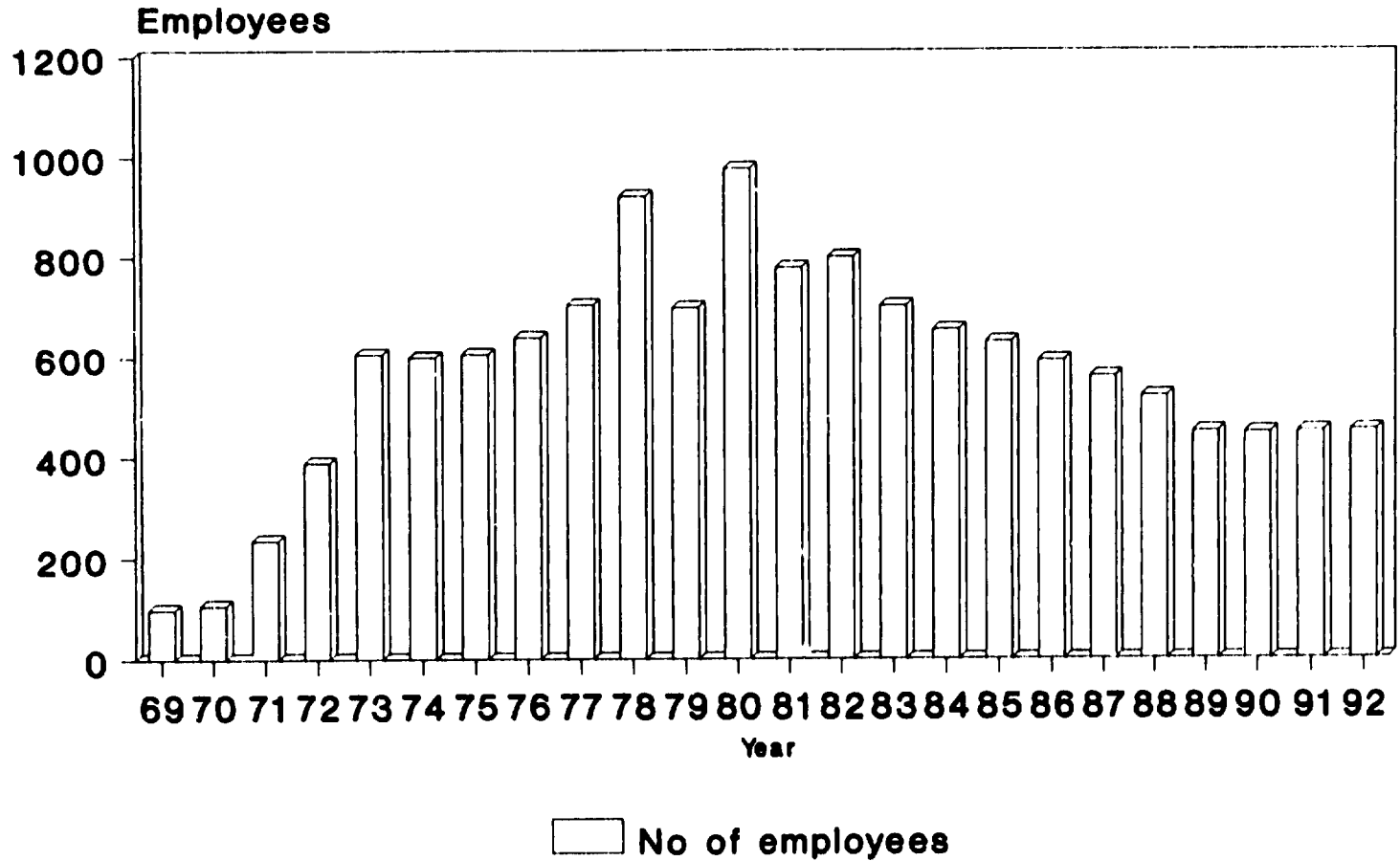
Another pair of photos shows the corner of a warehouse. Before action was taken, the place was dirty, and cracked stones and broken wood were piled up in a corner. After action was taken, the place was clean, and the corner was used for proper storage, with a new shelf installed.

Other examples of improvements in the offices and workshops may be found on the bulletin board. The management points out



that it is not difficult to explain the principles to employees; but their continuous application calls for persistence and determination. The application of the 5-S's does not directly affect profitability or production costs, but in the longer run, safer and more convenient and comfortable working conditions are seen to have a positive influence on worker morale, and raise overall productivity and efficiency.

# Annex II-7 Total Number of Employees, 1969 - 1992



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