

The Quality and Productivity Improvement Project in Tunisia: A Comparison of Japanese and EU Approaches

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1. Introduction

As challenges of development are diverse, aid organizations must properly recognize the need for diversity in methods and approaches in responding to them. Each aid organization has fields, methods and approaches in which it excels. Equally, each aid organization has areas in which it has little knowledge or experience. Ideally, superior methods and approaches of different aid organizations should be brought together to deal with any development problem of low-income countries. Collective aid efforts based on comparative advantages of donors can produce great synergic effects.

This chapter examines the complementary relationship between Japan and the European Union (EU) using an ongoing Japan International Cooperation Agency (JICA) project, “The Study on the Master Plan for Quality and Productivity Improvement in Tunisia”,¹ as an example.

There are three ways by which different aid organizations can work together towards solutions for the same development issues in developing countries:

- (i) *Unified multilateral assistance* conducted jointly by a number of aid

1. This is a two-year project initiated in August 2006, which is in progress at the time of this writing. Some of the information in this chapter is unpublished and quoted here with the permission of JICA.

organizations through explicit consultations, where each aid organization contributes to the project using the method or approach in which it excels.

- (ii) *A combination of assistance programmes* formed through an explicit consultation among aid organizations, with each organization employing the method or approach in which it excels.
- (iii) *Separate assistance programmes* where each organization independently mobilizes a method or approach to offer the kind of assistance other aid organizations are not providing.

The case described in this chapter falls under the third category. The EU has been providing assistance to Tunisia for quality improvement in manufacturing as part of its efforts to strengthen the international competitiveness of Tunisian industries. Subsequently, JICA conducted a preliminary study to determine what kind of cooperation was feasible and what Tunisia expected of Japan for strengthening international competitiveness. It found that the EU was helping Tunisian companies to acquire International Standard Organization (ISO) certification to improve the quality of their business management. Although the acquisition of ISO certification installs a quality management system and strengthens document management in the company, it does not automatically lead to improved quality management or production technology. The acquisition of ISO certification simply means that one advantageous condition for international business is now in place. This fact was taken into consideration when the JICA Project Formulation Mission formulated the new project.

Consultations between JICA and Tunisia led to the agreement that JICA would dispatch a consultant team to improve the quality of production management and products for the purpose of enhancing the international competitiveness of Tunisian companies. As the field study of the JICA consultant team progressed, it became clear that the JICA project would positively affect Tunisian companies preparing to acquire ISO certification. Even more, those that had already acquired ISO certification would also benefit as the project would provide additional conditions for the strengthening of international

competitiveness through the actual improvement of product quality and productivity. Thus, it was reaffirmed that the JICA project and the EU project in progress were mutually complementary, as had been hoped in the preliminary study. Details of this complementarity will be the main focus of the sections to follow.

2. Outline of the JICA project

Background

In 1995, Tunisia signed a partnership agreement with the EU which stipulated that tariff barriers with the EU would be abolished by 2008. In the same year, Tunisia introduced *Programme de Mise à Niveau* (programme for upgrading) in anticipation of a future inflow of high quality and inexpensive products from the EU as a result of this agreement. In 2005, recognizing that the active promotion of broad-based productivity improvement and quality management was essential for the strengthening of international competitiveness, the National Quality Project Management Unit (UGPQ) was established under the Ministry of Industry, Energy and SMEs.

Actually, the UGPQ was established as a temporary organization for implementing the above-mentioned EU aid project. It aimed at providing guidance for Tunisian companies to adopt quality management and productivity improvement approaches with EU guidance. The goals were set to help 600 companies by 2010, and 1,300 companies by the end of the project, to acquire ISO and other internationally recognized standards. However, the UGPQ lacked profound knowledge and experience regarding quality and productivity improvement activities, and its organizational capacity to expand such activities nationwide was not fully developed.

Against this background, the Government of Tunisia requested the Government of Japan to provide assistance for the formulation of a comprehensive master plan containing recommendations for required policies and institutions

as well as action plans that would guide the UGPQ to expand quality and productivity improvement activities.

Objectives

The objectives of the JICA project include survey and analysis, the implementation of a pilot project, and, based on the results of these, the formulation of a master plan prescribing policies, implementation mechanisms and action plans for quality and productivity improvement. The targeted industries are electrical/electronics and food processing, two sectors that are highly important in Tunisia. During the implementation process of the pilot project, various advisory services are to be provided for selected model companies to improve quality and productivity. At the same time, effectiveness of the quality and productivity improvement manuals compiled in advance will also be examined.

Content and methodology

This project on the Study on the Master Plan for Quality and Productivity Improvement in Tunisia lasts for two years from August 2006 to July 2008 and has three phases. The main activities and duration of each phase are described below, and the project is in the final stage of Phase II at the time of this writing [October 2007].

- Phase I : A fact-finding survey on private companies focusing on quality and productivity improvement (August to November 2006)
- Phase II : Implementation of a pilot project for quality and productivity improvement (December 2006 to October 2007)
- Phase III : Formulation of a master plan for quality and productivity improvement (October 2007 to July 2008)

In Phase I, the following issues were surveyed from the viewpoint of quality and productivity improvement, and remaining issues were also identified:

- (i) Present conditions and problems of Tunisian industries in general
- (ii) Present conditions and problems of the electrical/electronic and food processing sectors
- (iii) Present conditions and problems of institutions and organizations which assist industries and enterprises
- (iv) Status of policies, measures and the legal framework
- (v) Assistance by other donors

In regard to (v) in particular, possibilities of duplication, complementarity and synergy effects with the JICA project were studied.

In Phase II, a pilot project was implemented. In accordance with the implementation plan which was formulated in advance, criteria for selecting model companies were determined, and 15 producers were selected as model companies from each of the two sectors, electrical/electronic and food processing, with a total of 30 model companies. At the same time, manuals for quality and productivity improvement were drafted for each of the two sectors. These were the preparatory stage for the full-scale implementation of the pilot project.

The actual implementation of the pilot project included guidance on quality and productivity improvement technology for the model companies and the use of the prepared manuals. In addition, guidance was also provided for the Tunisian counterparts, by means of OJT, on how to assist companies (i.e., training the trainers). The most important point was the development of quality and productivity improvement methods and approaches that suited the industrial climate and the social and cultural conditions of Tunisia, as well as the reality of Tunisian companies, through adjustments of Japanese technology and production systems. This also means the fostering of local capacity to modify technology introduced from outside to create appropriate technology. The manuals prepared in advance were also modified.

In Phase III, a master plan, which is the expected final outcome of the project, will be drafted. The Government of Tunisia hopes to improve quality and pro-

ductivity in all industries as well as all regions of the country. For this reason, a master plan for the national dissemination of quality and productivity improvement technology, covering all industrial sectors and regions and including diffusion mechanisms and action plans, will be compiled taking into consideration the results of the pilot project conducted over the electrical/electronic and food processing sectors. In this process, as many stakeholders as possible will be mobilized in exchanging information and opinions. After that, the JICA consultant team and local counterparts will prepare the draft.

This project can be described as a bottom-up approach to aid, as it formulates a master plan by incorporating the results of the fact-finding study and the pilot project conducted at the level of the factory floor.

The project can also be summarized from the viewpoint of the transfer of technology. The transfer of technology consists of three main stages: (i) learning the relevant technology, (ii) modifying the learned technology to suit the reality of a particular region or country; and (iii) spreading the modified technology to the entire region or country. In short, they can be referred to as the “learning stage,” the “modifying stage” and the “dissemination stage,” respectively. Our project involves the “learning stage,” the “modification stage” and a preparatory step for the “dissemination stage” (formulation of a master plan for dissemination). The actual implementation of the “dissemination stage” is left to the Tunisian side.

To repeat, the scope of the JICA project covers the formulation of a master plan and action plans, compilation of manuals, training of human resources and trainers for the implementation of the master plan and dissemination of its impact. The final stage, dissemination, calls for the actual implementation of the master plan, including action plans, as proposed by the JICA project. This requires as pre-conditions the government approval of this master plan and subsequent establishment of necessary systems, organizations and budgetary resources. These preparatory measures must be undertaken by the Tunisian side.

The appendix diagram compares the three stages of technology transfer and the three phases of the JICA project under consideration.

Considerations for the implementation of the JICA project

The following points have been taken into careful consideration for the implementation of the JICA project.

(1) Conformity with development policies and development programmes of Tunisia

It is essential for the JICA project to conform to Tunisian development policies, development programme, and industrial policies, and so forth. The JICA project was initiated in August 2006, during the last year of the 10th Five-Year National Socio-economic Development Plan (2002-2006). It has been decided that the project content would conform to the policies indicated by the 10th Five-Year Plan on the grounds that the next Five-Year Plan (2007-2011) had not yet been announced and that a major change of the policies would be unlikely in the near future. The policy goals in the 10th Five-Year Plan included the construction of economic infrastructure, improvement of the financial system, the strengthening of international competitiveness, the improvement of productivity in the private sector, and the narrowing of economic gaps among different regions of the country. Among these, the JICA project would directly contribute to the strengthening of international competitiveness and the improvement of productivity in the private sector. It would also have a positive effect on the narrowing of regional economic gaps as companies located in remote areas were also selected as model companies for the pilot project.

Since 1995, the Government of Tunisia has been implementing the *Mise à Niveau* programme as one of the key industrial policies. This programme aims at strengthening the international competitiveness of Tunisian companies through quality improvement. The objectives of the JICA project are in line with this. There is no doubt that it will further promote international competitiveness, which is one of Tunisia's most important policy issues.

(2) Conformity with Japan's aid policy

Japan's aid policy toward Tunisia is specified in the Country Assistance Programme for Tunisia of the Japanese Ministry of Foreign Affairs. It lists the levelling-up of industry, the development and management of water resources, and environment as three major areas of policy priority. As for assistance toward the levelling up of industry, it is stated that, while overall improvement of international competitiveness is desirable, Japanese support should focus on economic infrastructure with an emphasis on in the transportation sector and the information and communication sector; production and quality management; productivity improvement; fostering of SMEs; development of technological capability; and vocational training, taking into consideration the sectors and areas in which Japan excels.² The JICA project can be classified broadly as assistance to raise the level of industry in general, with specific contributions to production and quality management, productivity improvement, and fostering of SMEs, as stipulated in the Country Assistance Programme.

(3) Respect for country ownership

The success of intended technology transfer depends critically on the capacity and willingness of project partners on the Tunisian side. These are the key determinants of technology absorption during the implementation and the sustainability of the project after its completion. Accordingly, the JICA project has adopted the principle of encouraging the willingness and involvement of the Tunisian partners, respecting their ownership, and reducing the role of JICA consultants as the project proceeds.

(4) Utilisation of Japanese know-how in quality and productivity improvement

The ODA Charter of Japan calls for the "utilisation of Japan's experience and expertise." Japan has developed a number of methods and approaches for improving the quality and productivity of industry. For example, the Five S's (5S), Quality Control (QC) circle, Total Quality Control and Total Quality

2. See the website of the Ministry of Foreign Affairs at www.mofa.go.jp/mofaj/gaiko/oda/index.html.

Management (TQC/TQM), *kaizen*, and Toyota's production system (just-in-time system and *kanban* system) have attracted much attention not only in Western countries but also in developing countries. In Tunisia, knowledge of these production techniques is shared widely by business people and academics of business administration.³ However, their lack of practical guidance means that they are unable of fully applying such knowledge to actual production processes. Japanese cooperation is expected to fill this gap, and such expectation was the background for initiating the present JICA project as explained above.

Methods and approaches developed in Japan have their roots in the culture and industrial climate of Japan, as well as in the way of thinking and the value system of the Japanese people. It is important not to force them blindly on Tunisian government officials and managers of the model companies. In other words, the culture of Tunisia, as well as the way of thinking and sense of values of the Tunisian people, must be respected.

(5) Avoidance of aid duplication and emphasis on complementarity and the synergy effect

Frequent consultation and information exchange should be arranged with other donors operating in the same field (industrial promotion and private sector development) in Tunisia to not only avoid duplication but also generate positive complementarity and synergy effects.

3. Comparison with the EU project

Our survey of industry-related projects of other donors in Tunisia found that the Industrial Modernisation Project (PMI) assisted by the EU had the closest objectives to those of the JICA project. The two projects are compared below. Both projects support the *Mise à Niveau* programme implemented by the Gov-

3. A master's degree program in the Faculty of Business Administration of the University of Tunis offers a course on Total Quality Management.

ernment of Tunisia, with the aim of contributing to the strengthening of international competitiveness of Tunisian industries. The JICA project formulates a master plan for quality and productivity improvement, while the EU project promotes the “industrial modernisation programme.” The main activities of the JICA project are (i) implementation of a pilot project; (ii) compilation of manuals; and (iii) formulation of a master plan. For the EU project, activities include (i) assistance for business creation; (ii) assistance for quality improvement; and (iii) business guidance.

The EU’s assistance for quality improvement specifically means assisting Tunisian companies to acquire ISO certification. Meanwhile, the JICA project envisages improvement of quality and productivity on the factory floor. The EU project transfers internationally uniform standards applicable for all companies in areas such as business management and document preparation. In contrast, the JICA project adopts different techniques and approaches for different problems encountered by individual companies. A senior manager of the EU project described this difference as “prêt-à-porter” (or ready-made) versus “just-fit” (or order-made). Another difference between the two projects is that the majority of JICA consultants have experience in directing production processes while this was not the case with the consultants of the EU project.⁴ A Tunisian official who is well acquainted with the JICA project notes that such differences between projects are highly welcome as the source of a positive synergy effect.⁵ Table 1 summarizes these differences.

At the time of the commencement of the pilot project, the number of model companies that had already acquired ISO certification was 17 out of 30. Eight companies were in the process of acquiring such certification or hoping to acquire it in the near future. Five companies had no intention of acquiring ISO certification.

4. One of the JICA consultants used to be a general director of a factory in the Asian region with long experience in guiding local staff toward quality and productivity improvement. The presence of such a person allows transmission of experience and knowledge from one developing country to another (South-South cooperation).

5. Observation by an official of the Ministry of Industry, Energy and SMEs at the time of formulation of the JICA project.

Table 1: Comparing the JICA Project with the EU Project

	JICA Project	EU Project
National Programme to be Aligned	<i>Programme de Mise à Niveau (1995-)</i>	<i>Programme de Mise à Niveau (1995-)</i>
Overall Goal	Strengthening international competitiveness of Tunisian industries	Strengthening international competitiveness of Tunisian industries
Immediate Purpose of Project	Formulation of a master plan for quality and productivity improvement	Implementation of Industrial Modernisation Programme (PMI)
Main Activities	<ol style="list-style-type: none"> 1. Implementation of quality and productivity improvement of pilot project (guidance for model companies) 2. Compilation of dissemination manuals 3. Formulation of a master plan (including action plans and dissemination mechanisms) 	<ol style="list-style-type: none"> 1. Assistance for business creation 2. Assistance for quality improvement 3. Business guidance <p>(The text in the boxes below refer to the second activity only)</p>
Nature of Assistance in Quality Improvement	Quality and production improvement on the factory floors of model companies (including training of counterparts)	Assisting acquisition of ISO and other international certifications
Characteristics of Assistance in Quality Improvement	<ol style="list-style-type: none"> 1. Different approach for each company 2. Order-made 3. Instructors have practical experience in production. 4. While ISO certification is not the main purpose, the project can prepare conditions for obtaining ISO and contribute to actual improvement after ISO certification. 5. Bottom-up approach from factory-level results at pilot companies to master plan drafting. 	<ol style="list-style-type: none"> 1. Common approach for all companies (applying international standards) 2. Ready-made 3. Instructors do not need practical experience in production 4. Installation of quality and document management systems may not automatically improve the quality of production management and production technology. 5. Top-down approach based on international standard like ISO.

Even among model companies with ISO certification, many had the problem of disorderly placement of raw materials, intermediate inputs and finished products as well as an extremely inefficient layout of the factory floor. With the implementation of the pilot project, quality and productivity at such factories improved through the introduction of the 5S and *kaizen* for plant layout. Other model companies newly acquired ISO certification as a result of positive assessment of guidance received under the JICA project. Even though the pilot project has not been completed at this point, these experiences at several model companies clearly prove complementarity between assistance for the acquisition of ISO certification under the EU project and assistance for production floor improvement under the JICA project.

4. Feasibility of the transfer of Japanese technology

Even if a number of aid organizations try to formulate projects with the intention of complementarity, it is not certain whether the recipient country will accept the particular sectors which these aid organizations choose or the methods and approaches which they mobilize. While the JICA project in question was not formulated with an explicit consultation with other donors such as the EU, JICA still hoped for complementarity with other donors operating in Tunisia. For Japanese consultants employed by JICA, however, the greatest concern at the initial stages of this project was whether or not the quality and productivity improvement techniques and approaches developed in Japan were suitable for and transferable to Tunisia, a country with culture, industrial climate, way of thinking and sense of values which are very different from those of Japan.

Fortunately, with the progress of the pilot project, it became clear that Japanese techniques and approaches for quality and productivity improvement were acceptable to Tunisian model companies selected for the pilot project to a greater degree than originally anticipated. Let me cite some concrete examples.

First, the 5S technique,⁶ which is supposed to be uniquely Japanese, was accepted by a large number of model companies and produced positive outcomes. One model company has gone so far as to produce a 5S manual in Arabic for its employees after hearing about the 5S from JICA consultants.

Second, another model company has installed suggestion boxes in different locations in the plant, encouraging employees to submit comments and opinions. By so doing the management hoped to receive more ideas from them. This is one example of the bottom-up approach for business management stimulated by the pilot project.

Third, one model company had a training program of multi-skilled workers even before the initiation of the JICA project. The intention of this training, however, was to ensure that one worker could quickly replace another if the latter was absent or went into retirement, rather than improving quality and productivity. Nevertheless, the existence of such practice points to the possibility of workers who can operate more than one machine and supervise multiple processes in the future. Emphasis on multi-skilled workers is a distinct feature of the Toyota production system in particular and the production method of Japanese manufacturing companies in general.⁷

Fourth, at many of the model companies, application of *kaizen* to the plant layout quickly yielded positive results. The reshuffling of existing equipment

6. The 5S technique, consisting of *Seiri, Seiton, Seiso, Seiketsu and Shitsuke*, is a very Japanese method for improving quality and productivity on the factory floor. [These five slogans can be variously translated. One example is *Sort, Set in Order, Shine, Standardize, and Sustain*, which maintains the initial letter of S but deviates from the Japanese meaning. A more literal translation would be *remove unnecessary things, arrange tools and parts for easy view, keep the work place clean, maintain personal hygiene, and behave with discipline*. Also see footnote 6 of Chapter 1.]

7. Professor Fujimoto of the University of Tokyo proposes ODA projects for training multi-skilled workers (Fujimoto, 2007). This is an important proposal in light of the fact that Japanese ODA programmes for technology transfer have produced mainly single-skill workers in the past. Workers trained only in one skill by vocational or technical schools in developing countries are often unable to find suitable jobs. The training of multi-skilled workers will not only expand the scope of job search but also increase the possibility of such workers establishing new companies of their own.

can improve quality and productivity without spending much money. This is another example of how Japan can teach good practice. Among 15 model companies in the electrical/electronic sector, more than half introduced this approach without difficulty, achieving both quality and productivity improvement. One company reduced the defect rate from 20% to 3% even before completing the kaizen process. Two companies raised productivity by more than 50%.

Fifth, one model company producing electrical parts organized QC circles with a high hope of improving product quality. The QC circle is a mechanism where factory or shop workers form small groups to continuously improve and manage quality, whether it is the quality of a product, service or a task (Japan Industrial Management Association, 2005). Since such bottom-up activities are originally developed by Japanese companies, it was not certain at the beginning of the JICA project whether they would be accepted by Tunisian companies, which were more used to a top-down approach to business management. Although this model company has not shown tangible results by the end of the pilot project period, the company management is now fully aware of the importance of QC circles and the entire company is making effort to improve quality.

While it is too early to conclude, from a limited number of observations, that Japanese techniques and approaches are generally acceptable to people with a different culture and sense of values, it can at least be said that there is a possibility of such transfer under certain conditions.

This supposition is supported by the facts that overseas plants of Japanese companies often use Japanese production systems and that there have been cases of JICA projects that aimed to transfer the basic components of Japanese production systems to developing countries. Below, two cases are examined more closely, the one regarding a private company, Toyota, and the other involving an ODA project implemented in Singapore.

The Toyota production system can be described as the most representative

Japanese production system. Let Taiichi Ohno (1912-1990), the founder of this system, explain it in his own words:

The technique we call the Toyota production system is the result of our endeavours to catch up with the automobile industry in advanced Western countries in post-war Japan when there was no fund or equipment. The most important goals for us were productivity improvement and cost reduction. To achieve these goals, we emphasised the idea of eliminating all kinds of wasteful movements in the plant. Our approach was to discover all causes of various types of *muda* (waste) in production activities one by one and to establish solutions through the trial and error process. Such techniques and ideas as *kanban* (index cards), *heijunka* (production smoothing) and *jidoka* (automation with human intelligence) were developed as a means of just-in-time manufacturing through trial and error on the factory floor. In short, the Toyota production system originates from practical work at Toyota's plants and is strongly characterised by its emphasis on practical effects, practical work and practice rather than theoretical analysis (Ohno, 2000).

Is the Toyota production system acceptable to countries other than Japan? Ohno continues:

We do have reservations regarding whether or not just-in-time manufacturing can be applied to foreign countries where the business climate, labour-management relations and other social systems differ from those in Japan. However, it is our firm belief that the ultimate goals of companies and their employees differ little from country to country (Ohno, 2000).

Thus his position was mixed as to the universal applicability of the Toyota production system. It has been 17 years since Ohno passed away, and the reality today is that this system is employed at Toyota plants worldwide, even though some modifications have been necessary in some countries.

Toyota's manufacturing plants around the world aim at the production of auto-

mobiles of globally uniform quality.⁸ For this reason, the company invites the employees of plants abroad to Japan for training while dispatching an elite team to each overseas plant to ensure the application of the Toyota production system through intensive education and training. With the expansion of production, training teams in overseas plants where the Toyota production system has been firmly established are now dispatched to other countries in view of the limited availability of elite teams at the headquarters.⁹

The following incident, narrated by Takahiro Fujimoto of Tokyo University, shows how foreign workers were prepared for the Toyota production system. In 1983, Toyota founded New United Motor Manufacturing Inc. (NUMMI) in Fremont, California as a joint venture with General Motors.

Toyota sent newly recruited employees at NUMMI to Takaoka Plant in Japan for training to facilitate their understanding of not only Toyota's history and corporate management principles but also the basic ideas of production, QC activities and teamwork concepts, prior to the introduction of the Toyota production system on the factory floor. Instead of North America, this training took place at a site where the Toyota production system was practiced on a daily basis. The employees of Takaoka Plant warmly welcomed their American colleagues from NUMMI and taught them the basics of the Toyota production system through practice. This training took place from June 1984 to February 1985, and as many as 257 NUMMI employees went through it. NUMMI subsequently became a model company for Japan-US joint ventures and Toyota gained confidence that its own production system had *universal applicability*. Toyota has extended this experience to many other countries to sustain its prosperous business. (Fujimoto, 2007. Italics mine)

Needless to say, Toyota does not intend to introduce its unique production sys-

8. Toyota's overseas manufacturing locations include the US, Canada, France, the UK, Turkey, Thailand, India, Australia and South Africa.

9. *Toyo Keizai Weekly*. Sep. 22, 2007.

tem without alteration to its overseas plants at any cost, nor does it believe that such unchanged replication is possible. Toyota's Guiding Principles clearly indicate this. One principle says that the company shall "respect the culture and customs of every nation and contribute to economic and social development through corporate activities in the communities." This pledge was originally made in January 1992 and revised in July 1997. Toyota has consistently practiced it (Mito, 2003).

Let us now look at another case involving an ODA project, "Productivity Improvement Project in Singapore", which transferred Japanese productivity improvement technologies and approaches. From 1983, JICA provided assistance to Singapore under a similar theme to that of the current JICA project in Tunisia. While the project was implemented for a period of as long as seven years, the first two years were spent to iron out the two countries' different approaches to aid, and finalise its direction, in view of the fact that this was the first JICA project of this type.¹⁰ Adjustments were necessary because (i) the Japanese team had at first attempted to transfer Japanese productivity improvement technology and approaches without modification, despite the fact that Singapore, although a fellow Asian country, was different from Japan in terms of culture, beliefs, and the way of thinking, and (ii) there was a communication gap between Japanese experts and their counterparts. Both sides subsequently regretted what had happened and held a series of meetings to mend broken relationship and restore mutual trust.

In the end, the project was successfully implemented. The original Japanese techniques and approaches were modified to respect the social background and the way of thinking of the Singaporean counterparts so they would be accepted by the latter. Through this experience, it was also verified that the basic components of Japanese techniques and approaches were transferable to a foreign country. Table 2 below compares business approaches in Japan and

10. Prior to this, JICA had conducted a development study, "Factory Modernization Program in the People's Republic of China", in 1981, two years before the Singapore Project began. The purpose of this study was to prepare a proposal for improvement of production technology in state-owned factories.

Table 2: Differences between Japanese and Singaporean Business Management

	Japan	Singapore
Result- vs. Process-oriented	<p>Process-oriented:</p> <ul style="list-style-type: none"> – Results are obtained from processes and efforts – Try first, results come later – Appreciation of efforts made 	<p>Result-oriented:</p> <ul style="list-style-type: none"> – Results are the first priority – Seeking a system which appears to lead to good results – Processes and efforts are not appreciated unless results are achieved
Decision-making	<p>Bottom-up:</p> <ul style="list-style-type: none"> – Decisions come from middle level – Everyone wants to participate in decision-making to a certain extent 	<p>Top-down:</p> <ul style="list-style-type: none"> – Decisions come from the top – Leader-follower relationship – Commitment is important
Work Assignment	<p>Flexible:</p> <ul style="list-style-type: none"> – Broad and unclear job description – Group responsibility – Assignment adjusted to ability – Multi-functional assignment 	<p>Fixed:</p> <ul style="list-style-type: none"> – Duties and responsibilities are clearly defined in job description – Individual responsibility – Fulfilment of job requirements – Single job assignment
Planning Function	<p>Planning and operational functions shared even at the operational level</p>	<p>Clear distinction between the planning function and the operational function</p>

Source: A training text for Tunisian counterparts of the JICA project, prepared by Yasushi Fukuda, a former team leader of the JICA project Singapore (2007).

Singapore as conceived by a former team leader of the JICA project in Singapore. His observations are also applicable, with little changes, to the present case of Tunisia. Tunisians and Singaporeans share many common characteristics. For example, they are both result-oriented and seek quick results. They also prefer the top-down approach to decision-making and fixed work assignments with little flexibility.

5. Conclusion

Japan has rich experience in industrial promotion. On the factory floor, there are many production management techniques and approaches that have been developed in Japan and attract much attention from the rest of the world. Particularly prominent are quality improvement and productivity improvement techniques and approaches as described in this chapter. Although most of them have emerged from Japan's culture and industrial climate, as well as the way of thinking and sense of values of the Japanese people, it has been shown in many cases that a large part of them, or at least their basic components, can be applied and transferred to foreign soil with a different culture and sense of values. Toyota even has confidence that its production system is universally applicable.

In terms of experience in industrial promotion and technology that supports it, Japan has the upper hand over other donor countries. At the same time, there are sectors and technologies where Japan is less experienced. The combination of comparative advantages of individual aid organizations, in terms of sectors, techniques and approaches, is desirable and should produce complementarity and the synergy effect in solving specific development problems of developing countries. In this way, available resources of the donor community can be effectively utilised and shared.

While Japan boasts many techniques and approaches that can be used on the factory floor, former suzerain countries have rich experience and information that are relevant to the creation of good environment for industrial promotion such as the development of legal, taxation and accounting systems. This is because such systems which were installed during the colonial rule often remain in former colonies. In view of this reality, complementary cooperation is conceivable where former suzerain countries are in charge of developing the soft infrastructure such as legal, taxation and accounting systems, while Japan is responsible for production management and guidance on the factory floor.

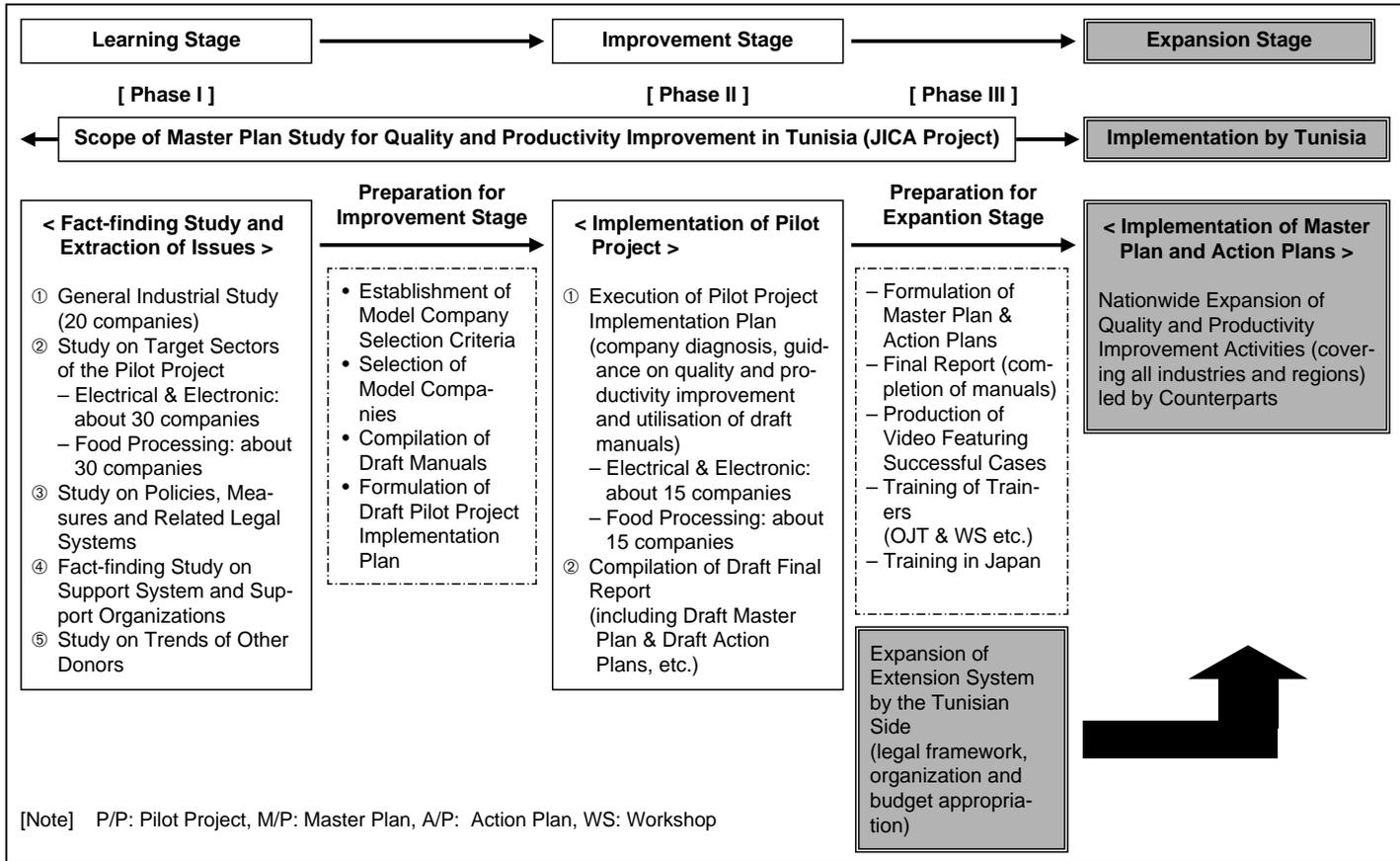
There are no doubt ways for donor organization from different countries to

contribute their specific strengths to develop approaches towards finding solutions. In Japan, business management is primarily bottom-up, while that in Europe and the US is top-down. As far as in-house *kaizen* activities are concerned, the Japanese approach is that of steady implementation on a daily basis even if the progress is small, while European and American companies excel in the break-through approach. Liker (2004) remarks that “because Western firms tend to focus on break-through innovation and are weak in terms of continual small improvements, this has been the focus of the teaching of *kaizen* to Western firms.” Also, Dertouzos and others (1989) note that “from the long-term perspective, technological progress is based on the two engines of gradual improvement and sudden breakthroughs. To strike an appropriate balance between the two poses a constant challenge. Lewis Branscomb points out that Japanese companies have been combining the two approaches fairly efficiently.” Both approaches have their own strengths and weaknesses, and the establishment of a team consisting of people who excel in different fields will achieve the sought-after complementary relationship.

In this chapter, a Tunisian case was discussed to show the possibility of complementarity in development effort involving multiple aid organizations. Such complementarity should be further considered in future studies. To produce complementarity and synergy effects, key points that must be identified include: (i) the forms of aid provided by donor countries and organizations, (ii) sectors and approaches where aid organizations enjoy comparative advantages, (iii) existing systems and structures of aid recipients (governments or counterpart organizations) which can accept and adjust foreign aid, and (iv) the mechanism for involving local consultants who are active recipients of technology and skills and potent instruments for their dissemination.

As stated at the outset, problems faced by developing countries are becoming increasingly diverse and complicated. Research into the issues mentioned above is essential not only for improving aid quality and outcomes but also for the optimal distribution of aid resources. The rapid progress of globalisation and market liberalisation, which have a great impact on developing countries, makes it even more urgent to undertake such studies.

Appendix: Three Stages, Content and Method of Transfer of Technology in the JICA Project



< Implementation of Master Plan and Action Plans >

Nationwide Expansion of Quality and Productivity Improvement Activities (covering all industries and regions) led by Counterparts

Note: Works in white boxes are carried out under the JICA project, while works in grey boxes are to be carried out under the Tunisian initiative.

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