

Introduction, Adoption, and Adaptation in Quality Management Implementation at Small Medium Enterprise

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ABSTRACT

The purpose of this research was to analyze how the process of quality management implementation at Small Medium Enterprises (SMEs). Starting point of this research based on the paradigm that quality management implementation has been conduct both of large companies and small and medium-sized companies to improve their competitiveness and gain long-term profitability. The process of quality management implementation consist of three phases namely the introduction stage, adoption stage, and adaptation stage. Case Study is used as prime research strategy and took SMEs for Manufacturing Sector as research object. Prime method of collecting data is structured interview with director, managers, supervisor, and employees. The results indicated that in the introduction stage of quality management implementation is marked by receiving project of Education Ministry amounting two billions, large companies order for various product, mass customization as the orientation of the new production system, and SME is pointed as subcontractor of large company. Adoption stage of quality management implementation is characterized by the development of quality systems and evaluation of customer satisfaction. Meanwhile, adaptation stage of quality management implementation is marked by the implementation of developed standard operating procedures. Those result give insight that SME has carried out continuous quality improvement through quality management implementation, in order to enhance customer satisfaction.

Keywords

Quality management implementation, introduction, adoption, adaptation, and customer satisfaction

1. INTRODUCTION

Small and Medium Enterprises (SMEs) are the most relevant topic to be discussed in Indonesia because of their significant contribution to the economic and industrial development of any country [1], [2]. The important role of SMEs in Indonesia is not only limited as job provider for the vast majority of the people, but also very vital in combating poverty, reducing unemployment, distributing income, and increasing non-oil export.

In today's globalize economy, competition is becoming ever more intense. SMEs are trying very hard not only to satisfy their customer's needs but where possible exceed them. This can only be achieved through cost reduction, improvement in product performance, increased customer satisfaction and a constant effort towards world class organizations. In order for SMEs to survive and grow in the future, it is essential that they deliver high quality goods and services according to customer desires. Baykasoglu et. al [3] and Cheng et al. [4] stated that to be competitive, SMEs should restructure and reorganize in order to deliver customer desire of high quality product. One of the approaches should be used not only by large companies, but also SMEs is quality management implementation. Several advantage of quality management implementation are increasing customer satisfaction, increasing employee awareness of quality, improving organizational performance, and achieving organizational effectiveness [5].

These benefits are important for all organizations, especially at developing country, such as Indonesia, where the general quality level is relatively low and need to be increased in the pursuit of effective inter-organisational cooperation [6]. However, the quality management implementation is not always easy as expected. Some cases such as lack of coordination in resources management, uneffectively decision making, failure of implementing quality control indicate how difficult to implement quality management. There are three stages of quality management implementation, namely introduction, adoption, and adaptation. So, the aim of this research to study a stage for implementing quality management in SMEs.

2. QUALITY MANAGEMENT

Quality management can be defined as all activities of the overall management function that determine the quality policy, objective, and responsibilities, and implement them by means such as quality planning, quality control, quality assurance, and quality improvement within quality system [7]. A good quality management always integrate between customer focus, continuous improvement, and total involvement. Based on this consideration, quality management can be used as approach of the organization to increase value of the product or service to customer.

The historical evolution of TQM has taken place in 4 stages, namely: quality inspection, quality control, quality assurance, and total quality management (TQM) [8]. TQM is considered as a systemic approach to explain the concept of quality management, where as quality management is not only consist of a value but also tool and method. In general, the aim of quality management to improve customer satisfaction, increase profitability, and gain continual improvement [9].

Implementation of quality management needs a sequential process. Irianto [6] stated that in the term of sequence, the process of change in quality management implementation includes the development, evolution, and construction of a quality management system, the internalisation of the system into practices, the improvement of the system, and the possibility of its decline as time elapses. Taylor [10] characterises the process of implementation as a cycle of introduction, adoption, and adaptation. Introduction involving the development of understanding of concept and principles, building motivation, and defining the measurable objectives in order to gain commitment for adoption. Adoption involving the preparation and planning for developing the mission and putting it into operation. Adaptation involving the monitoring, adjusting, and improving realignment in response to difficulties or barriers in which understanding is important.

3. RESEARCH METHOD

3.1 Research Model

A model is used in this research based on Irianto model and shown in Figure 1 below. The step in Figure 1 view the implementation through intermediate outcome the status of effectiveness at points in time. The quality management implementation starts on introduction, then adoption, and finally adaptation. The process of implementation can be identified by sequential events, implication, and response that occur in the company.

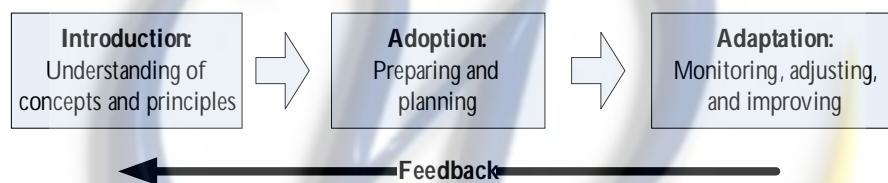


Figure 1. Research Model

3.2 Construct Operationalisation

The variables and attributes for operationalisation of the quality management implementation are explained in Tabel 1 below.

Tabel 1. Variables dan Atributes

Variables	Atributes
Introduction	Motivation of quality management development, historical ownership, market influence, requirement to meet standards and specifications, and develop awareness of quality.
Adoption	Action, decesion and impact on the organisational structure, procedure operating system, development of human resource competency, standardisation and certification.
Adaptation	Monitoring, adjusting programme, continuing education and training, improving.

3.3 Research Strategy

This study uses case study as a research strategy. In the case study research, Yin [11] characterises three principles for data collection, such as using multiple source of evidence, creating data base, and maintaning the chain of evidence. Evidence used in case studies may come from six sources: documents, archival records, direct observations, participants observation, and physical artefacts. In this research, evidence is collected from documents, interviews, and direct observations.

CV CSM was selected as case company. The selection of the case companies was based on two criteria. Firstly, the firm had to be subcontractor for large companies. Secondly, the firm had implemented the principle of quality in the production to meet customer spesification. The collection of data was carried out on January until June 2009. Interviews use as prime data resources to get insight the process of quality management implementation.

4. PROCESS OF QUALITY MANAGEMENT IMPLEMENTATION

Some orders for product from several companies, change of production orientation, establishment of cooperation with large companies as subcontractor were significant events that influenced progress in developing quality management at CSM. Those events have critical implications for management to take action and decision.

4.1 Introduction Stage

The foundation of CSM began in the early 1996s, where at that time Bandung Institute of Technology (ITB) was carried out training programme for new entrepreneurs for 3 months. Training materials consist of entrepreneurship, production management, financial management, manufacturing system, quality management, and organization. At the closing of training program in the Sabuga Building ITB, the new entrepreneurs were met with several stakeholders i.e. banks and large companies to discuss an opportunities in collaborating of business.

Mr. Nandjar was a pioneer of CSM. He and one of the authorities of Industrial Production System Laboratory - ITB started forming business by using ITB's facilities i.e. CNC machine, telephone, and fax machine. In 1998 obtained an order from PT. Astra for making sand grinding machines and die casting. A crucial moment appeared in 1999 when obtained a project from Ministry of National Education for making mass product – practical tool for Junior High School Students – that it worth was around 2 (two) billions. Implication of this, it was needed to take 3 (three) hours working shift with 10 (ten) operators for each shift. For this project, Mr. Nandjar bought some manual machines i.e. milling machine, drilling machine, and lathe machine. To overcome lack of operators for this project, CV CSM hired several operators through outsourcing program.

After the project of Ministry of National Education finished, in the early 2000 Mr. Nandjar and his friends not only could purchase land and some manual machines, but also build an office at Cimahi. Since CV CSM operated at Cimahi, it got some orders from large industries, i.e. Indolacto, Indomilk, and Omedata. Variation of product that should be made, was one of implications of these orders. Limited production facilities and labour caused difficulties in managing the orders. Based on this consideration, the CSM founder decided to make core competence for their business. Making precision product was core competence of CSM. Formally, core competence had been proposed in the vision of CSM namely “to become precision machining industry based on CNC-CAD-CAM technology and design engineering ability in producing mould, dies, precision product, jig and fixtures”. Finally, core competence lead to the founder of CSM to change orientation of production system, from mass production to mass customization.

The change of production system orientation from mass production to mass customization caused CSM trapped in high competitiveness business, because there are a lot of competitors have focused on the same field. Because of his consistency on making precision product, in 2002 CSM was trusted producing some orders from some large industries, i.e. PT. Pervetti Van Melle Indonesia dan PT. Dexashapindo Rubber Indonesia. This led to a CSM to make continuous quality improvement by improving process quality, integrating quality improvement in production department, and collaborating between marketing, engineering, and production department.

In 2003 collaboration between large companies and CSM have been formed, whereas CSM was a subcontractor for large companies. This collaboration had implication for increasing of CSM sales significantly. In 2002 CSM sale was around 300 million rupiahs and increased to 400 million rupiahs in 2003. This led to management to buy CNC machine, so CSM was needn't to hire CNC machine service to the other.

4.2 Adoption Stage

To produce precision product, CSM was not only using CNC machine but also developing quality system in 2006. Developed quality system had the implication that CSM should focus on customer. This led to management to compose programs in developing quality system i.e. improving human resources capability, developing quality circle, inspection in process, and improving customer service.

Development of Human resources capability was aim at improving knowledge and skill at work. This program was carried out through training. The training had been given not only by internal trainer but also by external trainer. The training was given by internal trainer consist of the following subject, engineering drawing, CAD, CAM, and CNC. The training was given by external trainer, by USAID consultant, with the following subject namely operational quality improvement, and business plan. The training by external trainer was programmed for all employee and management.

Initiated by USAID consultant, in 2006 CSM was carried out quality circle program. The aim at quality circle was reducing nonconformity product. Unfortunately, this program was run for only a half year. This was due to lack of employee

knowledge in quality circle implementation and lack of management and employee commitment in quality circle implementation. Actually, to support quality circle program director of CSM has formed quality teams to develop quality system in CSM. The team worked effectively for only a half year. The team had to work for different task in the same time, it was not only to support quality circle program but also to produce orders. Finally, director of CSM instructed them to prioritize in producing orders.

To improve quality service for customers, CSM gave an extra service, in the form of 24 hours service, if there was a problem that caused by product didn't work well. Beside that, extra service didn't consider to be cost. CSM was not only conduct a transaction with large company for delivering spare parts of machine, but also provided technical assistance for large company in improving the ability of machine.

In 2007, CSM conducted the evaluation of customer satisfaction. Questionnaire was one tool in measuring customer satisfaction about following matters quality of product delivery time, price, and performance. The result indicated that customer was very satisfied for CSM services. Nevertheless, there was customer demand for CSM namely CSM should get quality assurance certification as soon as possible. The first step for this matter develop standard operating procedure (SOP). In the end 2007, some standard operating procedures had been composed i.e. The handling of pre-orders, scheduling outsourcing, price determination, making routing, process engineering, and master production scheduling.

4.3 Adaptation Stage

Since 2008 CSM have tried to implement SOP. Beside the implication for SOP implemtation, the adjustment of the working system also had another implication was documentation for each business process. The problem appeared in SOP implementation, when employee had different perception about it. Overall, SOP didn't work as their expected. To overcome this problem, CSM conducted workshop about SOP. Meanwhile, audit internal would be carried out by CSM to check all documentation.

Based on Rahmana et. al. [12], the chronological approach in the process of quality management implementation is shown in Figure 2. The figure illustrates how present quality management system was developed.

4.3 Significant Event and Management Response

The process of quality management implementation action was initiated by significant event that motivated the decision matter. Some significant events, which are seen as intial reactions and management decisions, are summarized in Table 2.

Tabel 2. The Significant Events and Responses.

	Non-technical Issues	Technical Issues
Significant Events	<ul style="list-style-type: none"> ▪ Project of Ministry of National Education ▪ Orders from some large companies ▪ Subcontractor for some large companies ▪ Standard operating procedure implementation 	<ul style="list-style-type: none"> ▪ Quality system development ▪ Customer satisfaction evaluation
Responses (decisions)	<p>Strategic Decisions</p> <ul style="list-style-type: none"> ▪ Outsourcing for operators ▪ Improvement of production facilities ▪ Improving human resources capability ▪ Developing procedures ▪ Internal audit 	<ul style="list-style-type: none"> ▪ Focused on core competence ▪ Improving of product and process quality ▪ Developing quality circle ▪ Inspection in process ▪ Developing quality management system

All the significant events are considered to be external pressures, which in many cases originated from uncontrollable and uncoordinated events. The companies considered these pressures to critically affect both non-technical issues, and motivated the company to react. In response to significant events from the external environment, encourage management to make strategic decisions.

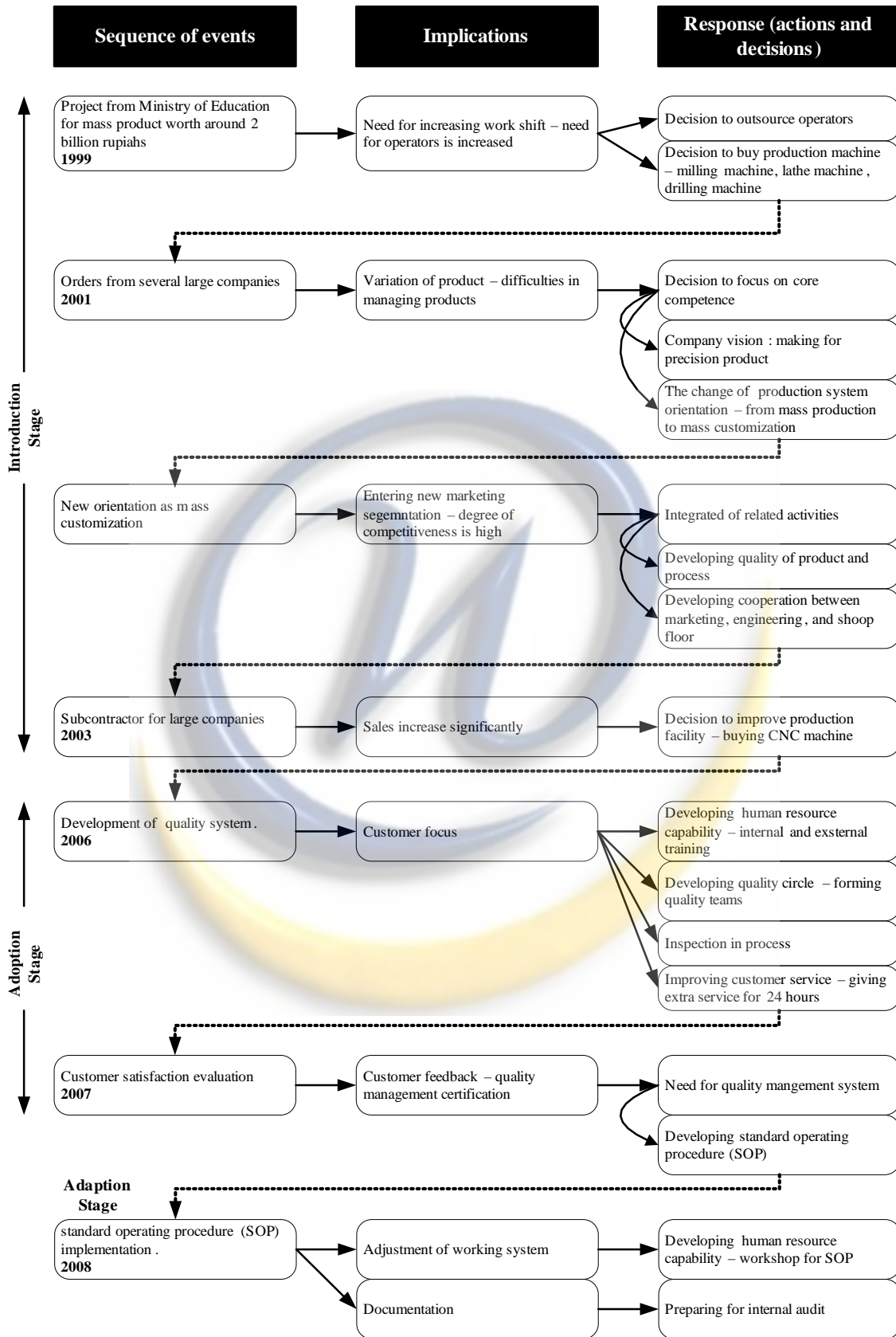


Figure 2. The Process of Quality Management Implementation at CSM

5. CONCLUSION

Some the conclusion from the research of quality management implementation at CSM are presented as following:

- a. The process of quality management implementation at CSM gave knowledge that quality management implementation couldn't be conducted in short time but relatively it needed a long time with sequential steps.
- b. The aim of quality management implementation at CSM is improving customer satisfaction, it is proved by focusing on customer, improving quality, and involving all employee.

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