The problems of implementation of Total Quality Management in Thai manufacturing SMEs

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The Problems of Implementation of Total Quality Management in Thai manufacturing SMEs

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Abstract. Thai manufacturing SMEs have played a major role in developing Thai economy, social and employment. In this situation, they have been confronted by forceful overseas competitors, especially in low-cost producers such as China, India, Vietnam, etc. They need to upgrade organisational performance in order to increasing their international competitiveness. However, most of Thai manufacturing SMEs have been inadequate modern technology when compared to large enterprises. Therefore, management technique i.e. TQM has been introduced to implement in Thai manufacturing SMEs for establishing a good quality management system, developing human resources and increasing business performance. The questionnaire was used as a tool for gathering data in this research. Firstly, it presented the main problems of establishment of TQM in Thai manufacturing SMEs by following the seven criteria of TQA; Leadership, Strategic Planning, Customer and Market Focus, Information and Analysis, Human Resource Focus, Process Management, and Business Results. Secondly, the SWOT analysis was used for examining the Strengths and Weaknesses and evaluating the Opportunities and Threats to Thai manufacturing. Finally, it found that Thai manufacturing SMEs lacked in cooperating with Government units. All these problems may lead Thai manufacturing SMEs to be unsuccessful implementation of TQM in their organisation, therefore they should realise their problems and business environment, and then develop all aspects of management systems in TQM and establish a strong partnership network with government.

Keywords: Problems, TQM, Thai manufacturing SMEs, TQA

1. INTRODUCTION

Thai manufacturing SMEs have played a major role in increasing Thai GDP. However, there have been many problems inside organisations that have created obstacles to improving performance and confronted by fierce overseas competitors. There appears to be a need for Total Quality Management (TQM) that benefits from well-managed organisation. TQM principles have been developed over many years by Quality practitioners, the core concepts of its approach were derived from three core principles; (1) Achieving customer satisfaction, (2) Striving for continuous improvement, and (3) Encouraging the full involvement of the entire workforce.

TQM has been used by many larger Thai enterprises, but there has been a slow up-take in Thai manufacturing SMEs.

This study was based on literatures and the results of questionnaire surveyed from 71 Thai manufacturing SMEs. The paper presents the main problems of establishment of TQM in Thai manufacturing SMEs by following the seven criteria of Thailand Quality Award (TQA):- Leadership; Strategic Planning; Customer and Market focus; Information and Analysis; Human Resource focus; Process Management; and Business Results.

The SWOT analysis was used for examining the Strengths and Weaknesses and evaluating the Opportunities and Threats to Thai manufacturing.

Moreover, it found that Thai manufacturing SMEs lacked in cooperating with Government units.

Therefore, Thai manufacturing SMEs should realise all these problems and business environment, and then develop all aspects of management systems in TQM and establish a strong partnership network with government.
2. THAI MANUFACTURING SMEs

Most manufacturing enterprises throughout the world are Small and Medium Enterprises (SMEs) dependent on their domestic markets to develop their businesses (Day, 2000; Freeman, 2000). In Thailand, the statistics (Leopairote, 1997) showed that most of manufacturing enterprises (over 90%) was SMEs which employed less than 200 (ISMED, 1999). According to Thanee (2004), he concluded that Thai SMEs were increased from 799,033 (1997) to 1,639,427 (2002) enterprises. They have played a major role in developing Thai economy, social and employment (Leenabanchong, 1997). The contribution of SMEs to the overall economy has been growing. It is estimated that they provide more than half of the total employment, more than 75% of industrial jobs and more than half of the nation’s GDP (Simachokdee, 2001b). The ISMED (1999) concluded that the contribution of SMEs to Thai economic development was as follows:

- to create jobs
- to add value to products
- to earn foreign income from exports
- to be producers, replacing imported products
- to generate positive business experience for new entrepreneur
- to be a subcontractor or link with large companies
- to be a source of labour skills development

The nature of Thai manufacturing SMEs was different to that of the large Thai enterprises and may differ from SMEs in other countries, but as a rule, most were seeking local domestic markets not global markets, engaging relatively higher skilled employees, using basic technology, had a top-down management style, and senior/middle management were employed with regard to their tangible/immediate ability rather than their whole personality or potentiality (Umezawa et al., 2000).

Compared with large enterprises, Thai manufacturing SMEs’ products mostly are the result of labour-intensive production not those based on high technology and automation. They are however, more flexible in their organisation and management than large organisations because of their small vertical organisational structure (Ghobadian and Gallear, 1996). No complex financial, production or specialised management is needed, so they are able to make rapid progress in achieving their goals once they are committed (Sonthithai and Thavornbud, 2003). However, they are largely unaware of the need to develop quality management in their organisation (Simachokdee, 2001b).

Figure 1 below shows the difference of stages of development in two firm sizes.

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Figure 1 below shows the difference of stages of development in two firm sizes.

Thai manufacturing SMEs’ problems are generated from two main sources; the first is the Thai government. The government units designed to assist the SMEs, but its slow response when compared with other governments, in creating appropriate legislation and establishing an Institute for SME Development, affect the SMEs’ competitive chances (Sakulsurarat, 2002); and the second problem for SMEs is their internal management – they have many internal problems (FTI, 2001; DIP, 2003). From previous research, the following figure was developed showing internal and external problems of Thai manufacturing SMEs. Uncertainty about external factors also contributed to the overall difficulties. This interplay between these factors (Buranajarukorn et al., 2003) is illustrated in Figure 2 below.

FIGURE 1: STAGES OF DEVELOPMENT OF THAI MANUFACTURERS

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Figure 1 below shows the difference of stages of development in two firm sizes.

<table>
<thead>
<tr>
<th>Stages of Development</th>
<th>Manufacturing Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>R &amp; D</td>
<td>SMEs</td>
</tr>
<tr>
<td>Design/Engineering</td>
<td>Large Enterprises</td>
</tr>
<tr>
<td>Modification/Adaptation</td>
<td></td>
</tr>
<tr>
<td>Copy/Basic Manufacturing</td>
<td></td>
</tr>
</tbody>
</table>

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Figure 1: Stages of development of Thai manufacturers

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FIGURE 2: INTERNAL AND EXTERNAL PROBLEMS OF THAI MANUFACTURING SMEs

In addition, Milintasoot (2000) looked critically at the problems of personnel management in Thai manufacturing SMEs which seem to have been caused by the Eastern management style. This was one in which there is a close relationship between employer and employees. Employees
are treated as family members with the employer regards as head of the family and in charge of all management decisions. This has led to major problems whenever the scope of management was expanded. It is especially noticeable in the Human Resource Management area.

3. BUSINESS ENVIRONMENT CHANGES

The worldwide industry has been affected by the increasing global competitiveness from international corporations (Porter, 1990; Gadenin, 2000) and cheap labour source countries (Dollar and Driemeier, 2000). Businesses today cannot ignore the need to increase their performance level if they are to succeed in global markets and to advance to a World Class Manufacturing performance (Jarnchai et al., 1997; Oakland, 2001). The two-side effects of global competition on Thai manufacturing SMEs shows in Figure 3 below.

![Global competition diagram]

Figure 3: The two-side effects of global competition

The Thai government was committed by the agreements to increase exports (APEC Secretariat, 1998) and abandon protective tariffs by negotiating FTAs with other governments i.e. U.S., Australia, China, India and Japan. It was believed that the FTA principle was an effective catalyst for improving competitiveness, promoting sustainable economic growth and alleviating poverty (Secretariat of WTO, 2003). The importance of FTAs to Thai industries was the recognition that:-(1) FTAs will increase the number of competitors from abroad into the Thai domestic market which was previously largely occupied by Thai manufacturers; (2) FTAs will generate an opportunity for Thai manufacturers to export products to international markets; and (3) FTAs will force Thai manufacturers to upgrade their organisational performance if they want to protect their share of domestic and penetrate into international markets.

From a study of market positioning of exports in 1996 and 2000, Dhanani and Scholtes (2002) discovered that Thai industries had decreased their share of world markets. Figure 4 below shows the current competitive situation which was confronted by 71 Thai manufacturing SMEs. Most percentages were in aggressive (54.93%) and moderate (35.21%) competitive situation, respectively. They were poor performance in administrative and technology when compared with their competitors.

![Current competitive situation chart]

Figure 4: The current competitive situation of Thai manufacturing SMEs

The competitive situation has led to Thai manufacturing SMEs being concerned about their problems and they need to consider changing their ways of operating to attain a high business performance. They need to realign manufacturing strategies and integrate them with their capabilities, technology, human factors, management approaches, organisational factors, and performance measurement.

4. QUALITY AS A BUSINESS STRATEGY

Quality is as important as low-cost and innovation strategies (Hay, 1996), as a business strategy to win in an aggressive market situation against a number of global competitors. This also proved by a number of famous quality
gurus (Deming, 1986; Juran, 1986; Crosby, 1979) that successful manufacturers consider the implementation of Quality Management (QM) as the essential part of their business strategy.

However, the study found that most Thai SMEs’ manufacturing strategies were focused on Cost rather than Quality, Flexibility and Delivery (see Figure 5 below). The results show that the Thai manufacturing SMEs preferred, generally, to use an improved cost strategy to overcome market resistance and refused to use Quality or some other strategy.

![Figure 5: Thai SMEs’ manufacturing strategies](image)

Thai manufacturing SMEs need to become aware of the advantages to be gained from initiating the development of a QMS as their strategy. It can show the typical of development of QMS in Figure 6 below.

![Figure 6: Typical stages of development of QMS in Thai manufacturing SMEs](image)

The implementation of QM in Thai manufacturing SMEs has not made much progress because of internal obstacles such as poor basic infrastructure, shortage of resources, human resource issues etc. This study found that most Thai manufacturing SMEs preferred to implement a Continuous Improvement (CI) programme and Best Practice (GMP/HACCP). Half of the surveyed enterprises had implemented SQC and QA (ISO9000), but most had not implemented TQM. This result is given in Figure 7 below.

![Figure 7: Percentage of companies implementing QM](image)

5. APPLICATION OF TQM

Many QM approaches have been introduced in many countries. In Thailand, there appears to be three main reasons for their implementation;

1. to use as a tool and techniques for improvement e.g. QCs, SQC, 5S
2. to obtain a Quality Certificate e.g. ISO 9000: 1994, ISO 9000: 2000
3. to achieve a Business Excellence approval e.g. TQM, Six Sigma

Buranajarukorn et al. (2003) concluded the current situation of quality management system (QMS) in Thai manufacturing enterprises in Table 1 below.

<table>
<thead>
<tr>
<th>QMS</th>
<th>Number of enterprises</th>
<th>Large</th>
<th>SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>No system</td>
<td>A great number</td>
<td>-</td>
<td>○</td>
</tr>
<tr>
<td>ISO9000</td>
<td>Some</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>TQM</td>
<td>A few number</td>
<td>○</td>
<td>-</td>
</tr>
</tbody>
</table>

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This study found that most Thai manufacturing SMEs preferred to implement a Continuous Improvement (CI) programme and Best Practice (GMP/HACCP). Half of the surveyed enterprises had implemented SQC and QA (ISO9000), but most had not implemented TQM. This result is given in Figure 7 below.
Most Thai manufacturing SMEs are interested in implementing a QM programme (SQC, CI, QA, TQM and Best Practices), but the percentage of Thai manufacturing SMEs which have fully implemented any QM is still less than 50%, especially TQM (5.63%). This may because only a few employees understood the theory and practical application of TQM (67.61%). The progressive status of implementation of TQM in Thai manufacturing SMEs is given in Figure 8 below.

The results in Figure 8 above show that the successful implementation of TQM was only 5.63%. There are three stages of problems whenever implementing TQM in organisation. These can conclude as follows:

- Problem 1 (P1) = Management/Employees are not interested in implementing TQM.
- Problem 2 (P2) = Management/Employees are interested in implementing TQM, but they don’t know how to do it.
- Problem 3 (P3) = Management/Employees do not have someone/basic infrastructure to help/support them to succeed in implementing TQM.

The author suggests three strategies to deal with these problems (see Figure 9 below).

6. ACHIEVEMENT OF TQA

Thailand as same as many countries, has established its own Quality Awards named Thailand Quality Award (TQA). It provides for self-assessment of the degree of the performance excellence in the use of TQM. There are seven criteria at the centre, these are: (1) Leadership; (2) Strategic Planning; (3) Customer and Market Focus; (4) Information and Analysis; (5) Human Resource Focus; (6) Process Management and (7) Business Results

In this study, it can classify the achievement of Quality Awards in Thai manufacturing SMEs into three levels. These are shown in Table 2 below.

<table>
<thead>
<tr>
<th>Level</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No achievement (any Q award)</td>
<td>32.39%</td>
</tr>
<tr>
<td>Low achievement (only Local/National)</td>
<td>29.58%</td>
</tr>
<tr>
<td>High achievement (at least International)</td>
<td>38.03%</td>
</tr>
</tbody>
</table>
From Table 2, it conclude that most Thai manufacturing SMEs (61.97%) had never achieved any award or only achieved a Local or National Quality Award. Only 38.03% of enterprises had achieved International Quality Awards. The achievement of an International Quality Award should be promoted as necessary as well as the realization that they need to develop their organisational performance to achieve this award standard.

There are confusion between percentages of market targets and level of achievement of Quality Award in Thai manufacturing SMEs. The study found that most Thai manufacturing SMEs sought a Quality Award for Domestic rather than International markets, even if they focused more on International markets (see Figure 10 below).

Followed by seven criteria of TQA, the study shows that approximately 50% of Thai manufacturing SMEs do not achieve all the criteria and only 22.54% achieved the criteria of Leadership, 19.72% achieved Strategic Planning, but only 4.23% achieved the criteria of Information and an analysis. These results are given in Figure 11 below.

6. PROBLEMS OF SME ORGANISATION

The problems in this study were grouped into two areas; (1) by Resources and (2) by Operational tasks. Resource problems are related to operational task problems and both problems effect on implementation of TQM. These effects are shown in Figure 12 below.

<table>
<thead>
<tr>
<th>Resource Problems</th>
<th>Operational Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>Production</td>
</tr>
<tr>
<td>People</td>
<td>Administration</td>
</tr>
<tr>
<td>Machine</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Money</td>
<td>Quality control</td>
</tr>
</tbody>
</table>

This study shows the significant effects of two problem areas on implementing TQM (see Figure 13 below). Most Thai manufacturing SMEs (more than 70%) have occurred all problems. These obstacles are needed to be eliminated in order to optimise their use of resources in organisation and work efficiently.
7. THE SWOT ANALYSIS

The SWOT analysis is the method used for identifying the Strengths (S), Weaknesses (W), and examining the Opportunities (O) and Threats (T) to Thai manufacturing SMEs. There are two-side effects on organisational performance; positive (+) and negative (-). They are illustrated in Figure 14 below.

![SWOT Analysis Diagram](image)

Where;
- Internal factors: S = Strength (+)
- W = Weakness (-)
- External factors: O = Opportunity (+)
- T = Threat (-)

Figure 14: Strengths (S), Weaknesses (W), Opportunities (O), and Threats (T) on Organisational performance in Thai manufacturing SMEs

In this study, the many issues under these categories uncovered by the SWOT analysis are summarised as follows;

**Strengths**
- Characteristics of selected companies
- Market focus
- Organisational Structure
- Interest in QM Implementation
- Awareness of benefits of QM implementation
- Level of readiness of organisation for development of Business performance to achieve competitiveness
- Some organisational aspects e.g. Work satisfaction, Gender equity and opportunity, Autonomous Work (Self-directing)/Work freedom, Trust, Leadership, Employment relation, Quality awareness, Work commitment/participation, Morale, Quality of working conditions/Job security/Well-being
- Methods for solving quality problems
- Interest in government assistance
- Requirement of improving skills for front-line operators

**Weaknesses**
- Management styles
- Focus of manufacturing strategy
- Quality awards entries and its achievement
- Implementation of any QM
- Number of person who were knowledgeable about TQM
- Achievement of criteria of TQA
- Internal problems (Resources & Operational tasks)
- Some organisational aspects e.g. Continuous learning, Work cooperation/Teamwork, Long term goals, Continuous improvement mindset, Scientific decision making methods, Linkage between employees and organisation goals
- Strategic human resource planning
- Training in QM courses
- Policy deployment
- Document management systems
- Performance management and Leadership systems
- Improvement programmes and utilisation of the improvement tools and techniques
- Involving in government assistance programmes

**Opportunities**
- Increase of International markets
- Establishment of TQA
- Government assistance programmes
- Many QM practices and Improvement tools and techniques were introduced in Thailand
- Government policy and provision of government assistance programmes

**Threats**
- Increase of the competitive situation in both domestic and international markets
- FTAs
- Higher customer expectation of quality of products
- Requirement of QA and QM programmes
- Need to achieve Quality Awards
- Lack of investment in modern technology and need to focus on human capability

8. GOVERNMENT ASSISTANCE
Government recognised that SMEs are the main source of the Thai economic growth and their success is needed to sustain Thai competitiveness, quality growth, and lasting prosperity (Phoonsuphanusorn and Treerapongpichit, 2002). The strategy used to increase the quality and productivity of products is the utilisation of technological and managerial innovation, especially human resource development. This strategy aimed to encourage entrepreneurs, both existing and new, to develop their skills and the capabilities of their employees (ISMED, 1999).

The Thai government provided two master plans for helping SMEs, one short, the other long term. The short-plan focused on solving financial problems in SMEs such as liquidity which appeared after the Asian economic crisis (1997) by providing investment capital for increasing the SMEs’ competitiveness. The long-term plan was to improve SME performances in order to obtain sustainable growth in the global market. This included legislation to assist SMEs, the establishment of an Institute for SME Development and government support for SME development programmes generally. The support programmes included consulting, training and providing seminars, market promotion, funding, and information services (Soontorncharernnon, 1997).

Although the government has provided many assistance programmes for developing Thai manufacturing SMEs’ organisational performance, these programmes seemed to be unproductive. Simachokdee (2001a) criticised the problems of Thai manufacturing SMEs into two issues; the internal problems of Thai manufacturing SMEs and the accessibility of government services. Figure 15 below shows that there was a gap between government support and SME needs for assistance. Most SMEs cannot access to government information and some deny their involvement in a programme. The government needs to broadly promote an assistance programme, develops a new programme which relates to the SME needs (S1) and encourages SMEs entrepreneur to participate in government assistance programmes (S2).

From the results of this study, it found that approximately 67.61% of Thai manufacturing SMEs had experienced some government assistance. It should be noted that less than 40% of the services on government offer were taken up. The most used of the government assistance programmes are training of entrepreneurs (39.44%) and attendance at courses on the Quality Certificate requirements (30.99%). However, there are some other services used by less than 10% of companies. These included Testing and Evaluating of Products, Infrastructure, Marketing, Financial Loan, Training in Financial Analysis, Taxation, and information Technology (see Figure 16 below).

The government needed to be clearly aware of the needs of Thai manufacturing SME and provide strategies, vision and mission statements for implementing its assistance policies. Alone, Thai manufacturing SMEs, cannot develop their organisational performance, they need to develop linkages between their business partner in order to gain business information and assistance programmes from as many sources as possible.

9. MODEL DEVELOPMENT

This study developed three sub-models; (1) Model of Problems in Thai manufacturing SMEs, (2) the Model of Government Assistance and (3) the Model of Developing TQM. The model is illustrated in Figure 17.
Model of Problems in Thai manufacturing SMEs

Quality Practices

Human Resources

Management Functions and Operational Tasks

Ineffective QMS

Basic Infrastructure and Organisational Aspects

Related problems

The government clearly understands Thai manufacturing SME needs to develop QMS in order to increase Organisational performance and competitiveness

Model of Government Assistance

Strategy 1: Communication, Information, and Education

Strategy 2: Provision of Effective SME Development programmes

Strategy 3: Improvement of Work Systems

Strategy 4: Establishment of Basic Infrastructure

Strategy 5: Development of Quality Management Systems - TQM

Thai manufacturing SMEs realise their internal problems and have an effort for developing the Human Aspects in implementing QMS

Model of Developing a Quality Management System

Level 0: No QMS
Level 1: QMS, No Q Cer.
Level 2: QMS, No Q Cer., Partial TQM
Level 3: QMS, Q Cer.
Level 4: QMS, Q Cer., Partial TQM
Level 5: QMS, Q Certification, Full implementation of TQM

Self-assessment from TQA

To Establish Organisational Infrastructure
To Develop Organisational Culture
To Develop Human Resources

Feedback

The government implements its policies and strategies effectively and develops programmes continuously for assisting Thai manufacturing SMEs

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