

# Total quality management (tqm): barriers to implementation



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## **PREFACE**

This Dissertation Proposal submitted in partial fulfillment of the requirements forms part of a Dissertation study for the Award of Master of Science MSc in International Construction Management by the University of Bath through its distance learning programme. The programme operates in Hong Kong in conjunction with Hong Kong University's School of Professional and Continuing Education (SPACE). This study examines the barriers faced by introducing to Vietnamese construction organisations the implementation of Total Quality Management (TQM).

## **RATIONALE**

Total quality management (TQM) is still a new issue for organisations in the Vietnamese construction industry. Many construction organisations outside Vietnam have embraced the philosophy and techniques of TQM with enthusiasm and success, while Vietnam has been reluctant because of issues and problems in introducing TQM systems and programs. These organisations need to establish a new strategy towards quality management if they wish to be more effective and successful to give these construction organisations better competitive advantages. Although various studies have been undertaken into the factors affecting delays, cost overruns, quality, safety, and productivity, etc. and other problems in specific types of construction projects, these studies seldom discuss common and general problems of construction projects. Thus, comprehensive studies on these problems are essential. Since the problems are rather contextual, the research will focus on a framework for the implementation of TQM in Vietnamese construction organisations.

The turnover of the construction industry represents about 10 per cent of the GDP of most countries. The construction industry is therefore a vital element of the economy and has a significant effect on the efficiency and productivity of other industry sectors. The Construction industry, though it is a major contributor to the economy of any country, is facing the problems of high fragmentation, low productivity, poor quality and lack of standards. It has not followed the lead of the manufacturing industry.

Within the construction industry, architects, quantity surveyors, engineers, contractors and various other specialists all have, in addition to their special technical skills, their own trade or professional customs and practices. These have an effect on the construction process either individually or collectively. These participants have differing traditions and often conflicting objectives. A key determinant that has inhibited industry's performance has been found to be its fragmented and loosely coupled supply chains. All these made the management of quality a difficult and complex task for all.

As a result, projects in the industry are plagued by time and cost overruns. Frequently one reads in the newspaper about construction projects that take too long to construct, go over budget, or include disputes that may need to be resolved by legal means or arbitration. The construction industry therefore has been accused of being, at its worst, wasteful, inefficient and ineffective. Thus the reputation of the Vietnamese construction industry is ill suited for meeting competitive challenges of today's fast changing world where competitive edge is with those who manage their resources most effectively and offer a timely response to the demands of the market. The

construction industry in Vietnam still has some way to go in terms of  
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developing and implementing appropriate quality initiatives across the board.

## INTRODUCTION

Total Quality Management is a management approach that originated in the 1950's and has steadily become more popular since the early 1980's. Total Quality is a description of the culture, attitude and organisation of a company that strives to provide customers with products and services that satisfy their needs. TQM is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

One aspect of TQM that has frustrated the construction industry the most has been the measurement of quality. Although 'Total Quality Management' has been a magic word, methods and techniques to implement the Quality Management program in the Vietnamese construction industry are still to be systematically and technically developed. The Vietnam construction industry is being viewed as one with poor quality emphasis compared to other sectors like the manufacturing and service sectors (Kubal, 1994; Kanji and Wong, 1998; Wong and Fung, 1999).

Many criticisms have been directed to the construction industry for generally shoddy workmanship. It not only the final product that is subject to criticisms

but the processes, the people, the materials etc are under tremendous pressure for better quality in construction.

Total quality management (TQM) is increasingly being adopted by construction companies overseas as an initiative to solve quality problems in the construction industry and to meet the needs of the customer continuously (Fung and Wong, 1995; Wong and Fung, 1999; Kanji and Wong, 1998; Jido, 1996; Sommerville, 1994). TQM has the potential to improve business results, greater customer orientation and satisfaction, worker involvement and fulfillment, team working and better management of workers within companies.

However, Vietnamese construction firms have been continually struggling with its implementation (Haupt and Whiteman, 2004). The implementation of a TQM philosophy within the organisations requires a cultural change (Sommerville et al, 1999) and its being recognised as an important aspect of total quality development (Adebanjo and Kohoe, 1998).

The primary purpose of TQM is to provide excellence in customer satisfaction through continuous improvements of products and processes by the total involvement and dedication of each individual who is in any way a part of that product/process. It is a structured approach to improvement. If correctly applied, it will assist a construction company in improving its performance.

Quality management is a critical component to the successful management of construction projects. Quality on construction projects can be regarded as the fulfillment of expectations (i. e. the satisfaction) of those participants involved. The quality is a critical factor in determining project acceptance  
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and resultant contractual payment levels. Unfortunately the Vietnamese Construction industry, and generally, has lagged behind other industries in implementing TQM.

There are various methods, which have been used by organisations in the construction industry to improve quality, employing mainly two major techniques: management techniques such as quality control, quality assurance, total quality management; and statistical techniques such as cost of quality and customer satisfaction. However, this does not mean that construction organisations have achieved the required quality standard. On the other hand, the quality performance found in the construction industry is worse than before, as more serious problems continue to happen in the industry.

The primary objective of this study is to develop and implement an effective TQM framework model that would help Vietnamese construction organisations to establish a foundation for TQM programs and ensure continuous improvements and be more competitive- with tools and methodologies for the identification of construction processes for continuous organisational improvement and customer satisfaction within the Vietnamese Construction Industry.

## **AIMS AND OBJECTIVES:**

### **Research Questions and Objectives**

A statement of the specific aims and objectives of the study is considered necessary to help frame the issue sufficiently to enable it to be studied effectively and to measure the extent of its achievement.

**AIM:**

Main aim is to investigate and identify the barriers of introducing Total Quality Management (TQM) in Vietnamese construction organisations and make preliminary proposals and considerations of TQM implementation outlining the basic steps in managing a transition to a new quality system such as TQM.

**OBJECTIVES:**

- To examine the TQM practices in Vietnamese construction organisations
- To investigate the affects of TQM on organisational performance
- To examine the relationship between TQM and organisational performance (commitment, resistance to change, culture)
- To develop a mindset of the organisation's effectiveness of quality management initiatives
- To determine if there is organisational or individual resistance to change by using TQM techniques
- To develop and formulate how to implement a TQM program

**HYPOTHESIS:**

The authors' research technique will be a problem-solving approach, hence formulating a hypothesis will not deem applicable in this study.

INITIAL CORE QUESTIONS: The research questions and stated objectives are translated into the following operational statements:

1. Position of the affects of TQM on organisational current performance

2. Position of barriers to introducing TQM in Vietnam construction organisations
3. Position of the relationship between TQM and organisational performance or QMS (quality management systems)
4. Position of organisations and individuals resisting to change
5. Position to provide evidence to suggest that western management practices such as total quality management (TQM) can be implemented successfully in Vietnam despite high cultural and organisational barriers.
6. Position of implementing TQM systems within the Vietnamese construction industry to be an effective continuous improvement

## **RESEARCH METHODOLOGY:**

### **LITERATURE RESEARCH**

The objective of the research is to assess TQM barriers of introducing and implementing initiatives in a number of Vietnamese contracting organisations to explain and identify similarities and differences in the implementation approach, benefits achieved, difficulties experienced and critical success factors. The field study will be based on the guidelines suggested by Yin (1989) and thus focus on contractor selection, focus on inquiry, which sort richness in data and data gathering procedures. Below are the proposed research stages:

1. A comprehensive review of the relevant literature including a computer-assisted search will be undertaken in order to develop an understanding of previous work in the field of TQM.



2. The exploration will be achieved through unstructured interviews and questionnaires with approximately 15-20 companies/organisations that have stated they have a TQM system. Further examination will decipher if these organisations have evidence of a systematic TQM system in place. Interviews with the aid of the authors' questionnaire will take place to evaluate the level of quality effectiveness.
3. The author will use these organisations once examined to study the possible implementation of a systematic TQM.
4. This stage will bring together and review the information collected in the previous stages in which the present TQM system has been studied.
5. This stage will involve writing up the content of the dissertation and should cover the chapters proposed in the following content:

### **Proposed Contents of Dissertation**

1. Introduction
2. Total Quality Management (TQM)- The Concept
3. Implementation of TQM
4. Designing the case study and research methodology
5. Analysing and evaluating the case study evidence
6. Conclusions and further studies
7. References and Appendices

### **FIELD STUDY DESIGN AND CONTRACTOR SELECTION**

The study research and report for this paper will be carried out in Vietnam, where an estimate of fifteen- twenty contracting organisations will be approached about the nature of the research. The contractors considered for

the study are considered to be well-established contractors who are capable of procuring a wide range of construction facilities (building and civil engineering). Each contractor has several offices throughout Vietnam. Table 1 (sample at present) will provide characteristics about the contractors used for this study. For reasons of confidentiality the author cannot provide any more detail than that presented in Table 1. The information that will be provided by senior management will only be estimates so as to provide the reader with an idea about the size the organisations involved with the research.

The following descriptions are drawn from Gay and Diehl (1992) and relate to the two main methodologies used in the research:

### **CORRELATIONAL RESEARCH**

“ Correlational research attempts to determine whether, and to what degree, a relationship exists between two or more quantifiable variables ... The purpose of a correlational study may be to establish a relationship, or the lack of it or to use relationships in making predictions. Correlational studies typically assess a number of variables believed to be related to a major complex variable, such as leadership. Variables found not to be highly related are eliminated from further consideration; variables that are highly related may suggest causal-comparative or experimental studies to determine if the relationships are causal”.

### **DESCRIPTIVE RESEARCH**

Once again from Gay and Diehl (1992), “ Descriptive research involves collecting data in order to test hypodissertation or answer questions

concerning the current status of the subject of the study. A descriptive study determines and reports the way things are. One common type of descriptive research involves assessing attitudes or opinions towards individuals, organisations, events, or procedures; pre-election political polls and market research surveys are examples of this type of descriptive research.

Descriptive data are usually collected through a questionnaire survey, interviews, or observations.

### **COMPETING OR LINKED RESEARCH PARADIGM?**

Whilst undertaking the Dissertation which will precede this Proposal; and whilst preparing the Dissertation itself: it became evident that the debate concerning the merits of quantitative vis-a-vis qualitative methodologies were relevant to considering how the research was to be conducted. As pointed out by Sekaran (1992), “ In the management and behavioral areas it is not always possible to conduct investigations that are 100% scientific ... Still, to the extent that we can design our research to ensure purposiveness, rigor, and the maximum possible testability, replicability, generalizability, objectivity, parsimony, and precision and confidence, we will have endeavoured to engage in scientific investigation”. There exists a ‘ multi-methodological’ approach where, “...it is quite usual for a single study to combine quantitative and qualitative methods and to use primary and secondary data”, (Saunders, Lewis and Thornhill, 2000). They continue, “ There are two major advantages to employing multi-methods in the same study. First, different methods can be used for different purposes in a study ... The second advantage of using multi-methods is that it enables

triangulation<sup>1</sup> to take place”. Based on this pretext, the multi-methodological approach has been used for this research study.

<sup>1</sup> Triangulation refers to the use of different data collection methods within one study in order to ensure that the data are telling you what you think they are telling you. For example, semi-structured group interviews may be – valuable way of triangulating data collected by other means, such as a questionnaire.

## **RESEARCH AND DATA COLLECTION**

Interviews with questionnaires will be used as the primary source of data collection to focus the investigation and to ensure that a consistent line of inquiry is followed (Yin, 1989).

The research will be carried out on as many competent construction organisations as possible (approximately 15-20) and are prepared to participate. In order to attempt to maximize the participation, the study will be introduced to the industry’s senior executives, middle managers and contract managers who are direct employees of their organisations. This will help to eliminate ‘noise’ factors that would result, if the study reached down to indirectly engaged multi-layers of domestic sub and sub-subcontractors. The research will be carried based on the following general methodologies:

- Examination of existing TQM practices of these organisations (if they exist)
- Survey based on questionnaire submitted by this author (refer to Appendix 1 for sample questionnaire)

- Statistical analysis to test for correlation in matched data from (a) and (b)

(Interviews and examination of secondary data (reports, instructions, procedural documents) to test the suitability of the organisation's ability to ascertain if TQM could be implemented as an evaluation tool for use in the Vietnamese construction industry).

### **DATA STORAGE**

The data storage provisions for all data pertinent to this study will be in accordance with Bath University policy and the guidelines contained in Dissertation Notes Booklet. These provisions include that the original research documents (such as verified interview transcriptions, returned pilot and final questionnaires) will be retained by Bath University and a copy by the researcher, for a minimum period of five years.

### **ETHICAL ISSUES:**

All research for this dissertation will be conducted in accordance with the guidelines of Bath University. The research trail will be transparent and written consent will be sought from the construction organisations comprising the 'study' group. Anonymity and confidentiality will be maintained at all times and all participation (including, individual/group interviews and questionnaire response, will be voluntary. Any private individual names (except those in public office) referred to on the interview tapes/Mini Discs, will not be transcribed. The tapes/Mini Discs will be erased once the transcripts have been verified as a true account of the interviews conducted. Transcripts, returned questionnaire forms, subsequent coded

information and data analysis will be archived securely by the researcher, for the appropriate time required.

### **FACILITIES AND RESOURCES:**

The researcher for this dissertation proposal will be responsible for meeting all expenses, including (but not restricted to) travel, translation, transcription, printing, postage, stationary, computer software and consumables required to complete the research programme.

### **LIMITATIONS:**

The limitations of this study are perceived to be as follows:

- Only competent construction companies in Vietnam will be considered as the survey population;
- To date there is no evidence or records (but will require further research) of previous studies or data analysis as a comparison to other industries in Vietnam or abroad at this stage.

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