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# IMPLICATION OF TQM IN E-COMMERCE (STRATEGIES FOR CYBER MARKETER)

BY

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## ABSTRACT

The purpose of this research is to study the implication of Total Quality Management (TQM) in E-commerce. TQM aspects emphasized in this research are customer's satisfaction, quality specifications, and employee's participations. This is to help cyber marketers to identify the determinants of quality for E-commerce companies. A total of 100 questionnaires were distributed to E-commerce companies but only 26 (26%) were returned. The respondents were required to answer the questionnaire through interviews, correspondences, e-mail or website. Reliability tests were employed to ensure the reliability of the questionnaires. T-test and Pearson Coefficient Correlation Analysis were used to examine the hypotheses. This study found that company involvement in E-commerce could improve its sales. The study revealed that understanding customers' needs, emphasis on quality specifications, superior employees' performances, and emphasis on customer service are essential criteria to enable the company to achieve quality. The study also showed that there are five determinants of quality namely empathy, reliability, responsiveness, assurance, and tangibles. Lastly, the study revealed that quality performance enabled the company to boost its sales performance, and enrich its return on investment. Thus, E-commerce companies should emphasize on these five dimensions of quality on their products and service so as to achieve quality performance. Based on this research, E-commerce companies are strongly encouraged to implement TQM in their companies to ensure quality products and services. This way, these companies are able to gain several marketing opportunities so as to compete effectively in today's intensely competitive global economic environment. Indeed, TQM is essential for this newly developed industry, E-commerce.

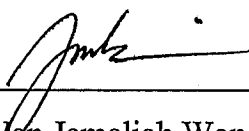
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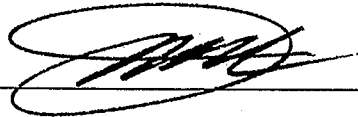
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## DECLARATION

I hereby declare that this project paper is a result of my own study. Other sources are acknowledged by reference note and bibliography is appended.

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## Chapter 1: Introduction

### Introduction

This research mainly investigates the implication of Total Quality Management (TQM) in E-commerce. It attempts to study how E-commerce affects business today. The basic concept of TQM and basic understanding of E-commerce will be cited in literature review. The literature review clarifies how to apply TQM in E-commerce. The opportunities and threats of running E-commerce business are also discussed in literature review.

Towards Vision 2020, Malaysia has promoted MSC projects to encourage more private corporations to invest in Information Technology (IT). Therefore, several IT businesses are developing rapidly in Malaysia including Internet, E-commerce, Smart Card, Telecommunication, and so on. E-commerce is the current hottest topic in the business world. Today, Internet is growing rapidly and this has provided several potential benefits to the firms that promote E-commerce. At the same time, there are several constraints for the firms to move forward such as issues on security system, deficiency of technology factors, and so on. Therefore, most of the E-commerce service providers are enhancing their hardware and software capabilities to improve the reliability and proficiency. Several firms believe that E-commerce is a critical tool to enhance the development of the firms as it can add to their competitive advantages.

Since it is a newly developed business, the organization has a variety of structures to run the business. All of the firms have its strengths, weaknesses, opportunities and threats (SWOT). In order to enhance their strengths and reduce their weaknesses, they have to implement TQM to achieve their goals and objectives. In

weaknesses, they have to implement TQM to achieve their goals and objectives. In this research, TQM mainly focuses on customer satisfaction, employee participation, and management commitment. By satisfying the customers' needs, sales performance and customer loyalty can be improved and enhanced. The implementation of TQM should begin with senior management and most importantly the Chief Executive Officer's (CEO's) commitment. According to Burns, a leader strengthens and inspires the followers to accomplish shared goals (as cited in Besterfield et al., 1995). Business leaders are not to shape the organization's values but also to promote and exemplify the organization's values. The development of core values, a vision statement, a mission statement, and a quality policy statement come first. The involvement of middle managers and front line supervisors is essential to determine the success of TQM effort. They are accountable for achieving many of the organization's performance goals and objectives. They also provide the chain of communication between senior management and the front liners.

Most service businesses are people-oriented, with employee-customer interactions being a significant part of the services delivered (as cited in Berry and Parasuraman, 1991). Virtually every employee in a service company interacts with and serves either external customers or internal customers (i.e. employees). Therefore, employees' participation contributes greatly to the quality achievement. Employees are motivated to ensure that their contributions to the effort are consistent and dependable. Thus, employee participation is important to continuously improve quality and increase productivity.

The research is conducted to identify the potential strategies to help the companies succeed in the E-commerce business. TQM implication in E-commerce

E-commerce organization will be revealed. Thus, we utilize the analysis result to formulate the most effective and efficient strategies to achieve quality performance.

### **Purpose of the Study**

The purpose of this research is to study the implications of TQM in E-commerce. TQM emphasized in this research is on customers' satisfaction, quality specifications, and employees' participation. These three elements of TQM will be investigated, so that we are able to identify if these elements contribute to the success of TQM. Thus, it is hoped that the research will help cyber marketer to attain successful TQM organization for E-commerce.

Five major dimensions of quality will be investigated namely tangibles, reliability, responsiveness, assurance, and empathy. The relationship between these five dimension of quality and quality performance will be explored to help management focus on these five dimensions of the quality.

### **Objective of the Study**

In this research we have three main objectives, namely:

- i. To determine the variables that significantly contribute to quality achievement in E-commerce companies.
- ii. To determine to what extent TQM, specifically customers' satisfaction, quality specification, employees participation and customer service is being implemented and practiced in E-commerce companies.

- iii. To suggest recommendations and strategies for E-commerce companies in the areas of TQM to achieve quality performance.

### Statement of the Problem

In this research, we investigate the implementation of TQM in E-commerce organization. In this rapidly changing business world, the leaders or managers have been forced to seek ways to become more competitive. In order to help an organization to become more competitive, the organization has to accomplish an outstanding corporate success. An outstanding corporate performance takes into account superior sales performance, loyalty reputation of the organization, customer retention and so on. We believe that TQM is able to help the management to achieve these objectives. Therefore, to achieve outstanding corporate performance, the organization should be able to generate quality products and services.

In the process of implementing TQM, we need to identify which elements of the organization are essential to be emphasized. There are several elements that should be focused in an organization including customer focus, leadership, employees, and so on. Therefore, we should first identify the elements of the organization that need to be emphasized in the implementation of TQM.

After identification of the elements, we need to look into the definition of quality i.e. how a company perceives products and services. Thus, we need to investigate the determinants of quality. By identifying the determinants of quality, we are able to determine the essential characteristics of the quality products and services.

Last but not least, we should determine the extent to which the quality achievement significantly lead to excellent corporate performance. By solving the

problems mentioned above, we are able to show that the implementation of TQM in E-commerce leads to quality achievement and excellent corporate performance.

### **Significance of the Study**

From the research, we are supposed to determine which variables significantly contribute to quality achievement. The findings of the study are significant to cyber marketers to determine the variables that contribute to the success of TQM. Besides, it will also accord future researchers a chance to gain more understanding of the variables shown in this study. Further, future researchers would be able to investigate precisely on the variables that contribute to the success of TQM organization in E-commerce.

From the research, the cyber marketers are able to determine the extent to which quality dimensions significantly affect quality. So, they will be able to formulate more precise strategies, which point toward the quality achievement. The findings of the research provide a brief standpoint to the future researchers about the determinants of quality. The future researchers may be able to distinguish the importance of the five dimensions of quality in different nature of business, different region, and so on.

Finally, the study distinctively presents the factors that lead to quality, and also dimensions of quality that lead to superior performance. Based on the findings, the cyber marketers are able to formulate the most effective and efficient strategies to the success of E-commerce. Then, the future researchers can make use of the implications of TQM in E-commerce worldwide as this method of doing business can be easily accessed globally by using technology available on the Internet.

## Limitation of the Study

E-commerce is one of the most popular areas on the Internet. However, as E-commerce is a newly developed field of IT, the information on facts and statistics about the development of E-commerce in Malaysia is lacking. Thus, it is extremely hard to cite the facts of E-commerce in the literature review in Chapter 2.

The number of firms involved in E-commerce in Malaysia is limited. Besides, it is also difficult to recognize which company is involved in E-commerce. Due to time constraint, the questionnaires distributed may not be returned on time. In addition, some companies tend to be secretive and not willing to participate in the survey. However, this research is able to provide some empirical evidence in the area of E-commerce especially TQM.

Since the sample taken is limited to E-commerce companies within Klang Valley, therefore the result of this study cannot be generalized for all Malaysian E-commerce.

## Definition of the Terms

For the purpose of this study, the following terminologies will be used:

**Table 1.1: Definition of Terms**

Term	Definition
Bandwidth	The range of frequencies that a communications channel can carry at a time. The wider the bandwidth, the faster the data can be transmitted. Usually expressed in bits per second (bps). 1kilo-bps (kbps) = 1000bps; 1Mega-bps (Mbps) = $1 \times 10^6$ bps; 1Giga-bps (Gbps) = $1 \times 10^9$ bps.

**Table 1.1: Definition of Terms (continued)**

Broadband	Coaxial cable that can carry multiple signals at one time. It is similar to cable TV where a single cable offers a number of channels. Transmission rate up to 20 Mbps.
Bulletin Board Systems (BBS)	This is an Internet version of the Community/ School/ Club/ Company Bulletin Board, and is meant to accomplish the same thing. It allows individuals are able to view and post messages at their convenience, from home, office, anywhere.
Complex system	Interdependent components to form an organization within equally complex environments.
Customer satisfaction	Satisfaction of customer based on the product and services that actually meet the expectations and the anticipated benefits for the customers.
Cyberspace	Internet, Web site.
Cyber marketer	Internet marketer, who are mainly concerned on strong customer focus and well-conceived marketing strategies for marketplace in the Internet or cyberspace.
Design of the Experiment (DOE)	It is a powerful technique for improving quality and increasing productivity. Through experimentation, changes are intentionally introduced into the process or system in order to observe their effect on the performance characteristic or response of the system or process (as cited in Besterfield et al., 1995).
Dotcom company	A given website that belongs to a registered company.

**Table 1.1: Definition of Terms (continued)**

Hardware	Physical equipment for computer
HTML	<b>HyperText Markup Language</b> ; used to produce platform-independent document containing hypertext links such as WebPages.
E-commerce	Generally, using Internet to buy and sell products or services. See details in Definitions of E-commerce, Chapter 2.
E-commerce service Provider	Software developer that specially develop E-commerce application to its clients.
EDI	Electronic Data Interchange, the computerized exchange of information between organizations in order to avoid paper forms. The classic use of EDI is to eliminate purchase requisitions between firms.
Effective	Achieve the goals perfectly and accurately.
Efficiency	Achieve the goals with minimum resources, and minimum wastage of manpower, material, time, and so on.
Fiber Optic	A technology based on the capability of smooth, hair-thin strands of glass that conduct light waves to rapidly and efficiently transmit data. It can transmit as much information as the 1,500-pair copper-wire cable. Its transmission rate available up to 200Mbps
Information and Communication Technology (ICT)	One of Internet infrastructure that makes the communication flows smoothly.

**Table 1.1: Definition of Terms (continued)**

Information Technology (IT)	Also recognized as Information System (IS);
Infrastructure	The equipment and communication lines that allow data to travel through a network.
Memory Storage	Used to store data, software, and so on. Can be a hard disk memory storage and RAM versatile memory.
Network	There are three types of networking system: a) Local Area Network (LAN); b) Metropolitan Area Network (MAN); c) Wide Area Network (WAN)
NetGen	New generation for Internet
Online	Surfing, browsing or connected to Internet.
PDCA cycle	A systematic approach to problem solving based on Cycle: <b>Plan → Do → Check → Action.</b>
Platform	The working base for a program while connecting to Internet
Portal	It is a web site that offers many different services such as email, search engines, directories and online malls. The concept is you can go to this web site and use it as a jumping off point to many other sites and services. The portal makes profit from advertising (banners), and sometimes directly from sales of products. The best known is Yahoo, which has become huge in the past few years (as cited in <a href="http://www.freeinfosearch.com">http://www.freeinfosearch.com</a> , 2001).

**Table 1.1: Definition of Terms (continued)**

Protocol	It is a set of rules and procedures for exchanging information between computers throughout network.
Quality	Means meeting customers' (agreed) requirements, formal and informal, at lowest cost, first time every time (as cited in Flood, 1993).
Surfer	People who go online or surf in the cyberspace (Internet).
Software	An application which containing a set of instructions to allow end user to perform their work easily
Statistical Process Control (SPC)	Is a powerful tool for the improvement and optimization of process, system, design, and so on (as cited in Besterfield et al., 1995).
Telecommunication	Use of networking allows people communicate without meeting at the same place. Usually allow a person access databases in the company while he is out side of company.
Transmission rate	speed of data can be transferred through a communication channel
TCP/IP	Transmission Control Protocol/ Internet Protocol, the most widely used protocol on the Internet. TCP/IP is a set of rules that each computer follows in order to enable communication.  Only computers using the same protocol are able to communicate.

**Table 1.1: Definition of Terms (continued)**

Total Quality Management (TQM)	Is an art of managing the whole to achieve excellence (as cited in Besterfield et al., 1995). Definitions of TQM will be discussed in greater depth in chapter 2, at page 38)
Extensible Markup Language (XML)	XML is designed to replace the current used Hypertext Markup Language (HTML). XML is the answer to some long-standing problems faced by the EDI that effect the very nerves of networking system.

### Outline of the Chapters

The project paper consists of five chapters. Chapter 1 is made out of the Introduction, which briefly explains the outline of the project, the purpose and the objective of the project, the statement of the problem, the significance of the study, the limitation of the study. Finally, the definitions of terms will be included to explain all the important terms used throughout the project.

Chapter 2 relates to literature review, which discusses the basic concept of Total Quality Management (TQM), E-commerce, the implication of TQM in E-commerce and how E-commerce is adopted as a business tool. Some statistics and researchers' forecast about the future of E-commerce will be included in this literature review. In addition, Model of the project will be illustrated to explain the variables that determine quality performances and then how the quality will lead to good performance.

Chapter 3 is devoted to the discussion on research methodology. This chapter discusses the research method and the procedures that have to be followed in

conducting the research. Research instrument and the development of questionnaire will be presented. Then, the population sampling will be discussed followed by the procedure for data collection. After that, the hypotheses for the study will be presented. Before proceeding to chapter 4, the variables that contribute to quality and major dimensions of quality will also be discussed in this chapter.

In chapter 4, the result of the research procedures are analyzed by using Statistical Package for Social Science (SPSS) version 9.0 software. In this chapter, we present the data analysis by using descriptive statistics, reliability test, factor analysis, and hypothesis test. The demography of the respondent, the performance of the company will be explained by using the descriptive statistics. The reliability test and factor analysis will be included to show the reliability of the questionnaire and how the variables are grouped into smaller number of variables. Then the hypotheses will be tested by the Pearson Correlation test. The test mainly determines the variables that significantly contribute to quality performances. Then the test also examines the relationship between determinants of quality and performance.

In chapter 5, based on the result of the data analysis, the findings of the study will be discussed. Obviously, the limitation of the study will also be added to explain the limitation of the project. Finally, the managerial implication of the study and the future directions of the study will also be included. We wish to suggest the most effective and efficient way for the cyber-marketer to implement TQM in E-commerce.

Finally, the details of the references will be listed in the reference. Additional materials and the results of the analysis that have been performed in the study will be attached in the Appendix.