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A Study of Using BPR and TQM in E-commerce

Farshid Kheirollahi[1], Farhad Shah veysi[1], Aroosha Majidipour*[2], Parastoo Majidipour[3]

[1] Accounting Department, Razi University of Kermanshah

[2*] Kermanshah Province Chamber of Cooperative, & Science and Research Branch, Islamic Azad University, Kermanshah, Iran

[3] Educational Administration, Nosocomial Infection Research Center, Kermanshah University of Medical Sciences, Shiraz University

Email:majidipour61@gmail.com

Abstract

Nowadays using e-commerce by organizations is not optional but it is compulsive. Modern organizations' activities are affected by a set of factors. Identification and assessment of these factors can help to improve activities and realize the goals of organizations. Goals of the organizations are different, but generally reduction of cost, increase of volume and improvement of quality can be considered as the important goals of any organization, and in competitive terms, nowadays the organizations should pay special attention to productivity. Employing appropriate methods of management knowledge is one of the most important elements to create an appropriate condition in organization economy for development of manufacturing. The goal of this research is to study the usage of BPR and TQM in e-commerce to apply the results for making the status of e-commerce better. This research has been prepared by using library studies and internet resources. TQM usage in e-commerce has shown that, by using this management procedure, better quality and better management of information is possible, customer satisfaction is obtained and continuous development happens with minimum cost. Regarding BPR usage, the results has shown that business process re-engineering has a strong and longstanding approach to improve performance and useful innovation in the organization and technologies of e-commerce, Therefore. it is recommended to use these management methods to improve the process of e-commerce.

Keywords: e-commerce, BPR, TQM

Introduction

Problems and issues of management are so complex and interrelated that it is not easy to diagnose the problem, and human nature of organizations and the complex behaviors of employees have caused double complexity. With such descriptions, the organizations should not expect any waves, but also they should be the source of the wave and transformation themselves, and try to improve them and can meet the needs of new modern civilization (Akao, 1998). Nowadays, the management needs several tools to improve the quality, and one of these tools is the establishing system of total quality management (TQM). Total quality management (TQM) was accepted as an effective method in improving the competition ability of an organization between1891 to 1902 in the United States (Coach, 2001).

Total quality management (TQM) is a culture that is converted into a tool. It means, first the idea and thought of total quality management (TQM) must be formed in the mind of every single employee and then after some time its mental concepts will be turned out into an act and are applied as an instrument for enhancing the quality of organization (Bugdol, 2005). In other words, total

quality management (TQM) is a method for operating an organization and it is based on the quality and contribution of all organization members and its goal is achieving long term success through customer satisfaction and employees satisfaction (Ooi, 2007). Although the issue of quality has been discussed during the human civilization history, systematic studies about it was started from the early twentieth century and was classically entered into management texts and engineering topics by the effort of professor Doming (Evans, 2003).

It seems at the end of the twentieth century TQM approach has been accepted well as a management system, while it was not a known word two decades ago (Frances,1994). TQM is in fact a management method based on the general principles of customer satisfaction, employee's involvement, continuous improvement and long-term partnerships with suppliers and customers (Khoon Siavash, 2009).

Re-engineering of Business Process Reengineering (BPR) is a new approach that looks at organizations through a complete new valve. From the late 1990s several organizations in the advanced industrial countries have been successful to make changes inside their organization with the noted approach help, and now they also try for the achievement of ongoing transformation (Hammer, 1995).

Re-engineering in the term "Business Process Reengineering (BPR)" is not an unfamiliar word to the world of business. More than two decades ago it was introduced for the first time as a tool for changing the American business sector. Hammer was the first person who introduced BPR in 1881 and is known as BPR father. BPR is a tool for fundamental change in trading process and it was adopted first in the early 1881 instead of TQM by the private sector (Al-Mashari, 2001).

BPR is an important tool for integrated change and it is proven as important approaches related to its properties and the produced results by effective usage of these approaches over several decades. Al-Mashari, Irani & Zairi Stated in 2000, that all companies want to achieve efficiency and have effect on reducing the cost of production, improving the quality of product and also quick and on time provision of products and services to the customers and these requirements are covered well by BPR (Gunasekaran,2002).

Based on Gunasekaran & Kobu's idea in 2112, BPR important feature is for the information technology and computer because of its ability and capacity. So the major role that it plays in the success of the change process is due to its ability in the combination of the newest technology host (Porter, 2001).

Applying technology innovations have tremendous influences on the field of trading; one of these noted innovations is applying electronics tools and especially Internet in trading system. The innovation and change that is named as e-commerce (electronic commerce) has numerous advantages for organizations, because of this, many companies tend to use it. Applying e-commerce is not an optional choice now, but also is a kind of compulsion and companies are forced to use it (Chaffey, 2002).

Chafi knows e-commerce as selling and buying through the internet (OECD, 2002). OECD organization also defines e-commerce as following: e-commerce is an electronic exchange that consists of buying or selling goods and services between companies, individuals, governments and other public and private sectors and is guided through computer networks (Hiramatsu, 2002).

One of researchers keeps stating: e-commerce is technology, process and operations which is performed in commercial exchanges time automatically in networks and by using the information (Sen, 2008).

The use of TQM in e-commerce

TQM can be applied with its important elements in e-commerce that includes:

Leadership

Researches show that the leaders prefer online shopping and then internet sales. This means that, the leaders prefer at first B2B (Business to Business), and then B2C (Business to Consumer) process. The leaders have to start working by innovating a process such as reducing the cost of production (which can be led the reduction of market prices) and improving the quality, which is useful for customers. The adoption of e-commerce in an organization requires a change that requires the development of strategic point of view and the ability to compromise with these changes. The management of these organizations is successful when focuses on leadership that makes the required change possible, and as the result it can settle a current e-commerce environment on the feet. Certain properties that are necessary for the leadership of e-commerce include prudence, comprehensiveness, taking risks, availability, foresight, flexibility, changes, being determined and having the ability to communicate (Kurtus, 2000).

Customer satisfaction

To understand customer satisfaction in e-commerce, online needs and desires should be defined.

The definition of customer satisfaction

According to Saha and Zhao's idea (Saha, 2005), satisfaction is difference between observed performances with expectations. Customer satisfaction is the customers' ideas about a product or service. Jane Ziyang et al define customer satisfaction in 2006 in this form:

Satisfaction is the fulfilled response of customer and therefore the opinion of satisfaction at least consists of two stimulators: outcome and comparison of reference.

Expectations are the anticipation of customers about the possibility of events. The observed performance or superficial outcome is due to meeting the needs (Porter, 2001).

Customer satisfaction in e-commerce

The progresses of information technology allow the organizations to develop the relationship between service providers and consumers. In business to business market (B2B), the interaction between client and service providers are maintained through different channels. Under these conditions, the customer satisfaction is defined as the capacity of the company for operating the effective multiple channels interactions of customer that integrate CRM procedures with the channel management.

In e-commerce B2C as a competitive marketing channel, customer satisfaction plays a major role in the long-term comfort of the online retailer. Customer understanding of the convenience, trading (product supply and adequacy), website design, and financial security are important predictors of customer satisfaction in B2C. In addition, the quality of the client websites, access to the product and the properties of website are in a relation with the customer satisfaction.

Continuous education

In spite of the e-commerce influence on technologic innovations technology and technological learning in developing countries, e-commerce is a luxury technology for most developing countries and includes B2B, B2C, C2B, C2C (Customer to Customer) and even B2G (Business to government) and G2B (Government to Business). Persons and individual organizations can hardly undertake such a large investment. Because it is a great investment, behavioral policy of e-commerce should focus on the training.

Commitment

There's a complex interaction between TQM and e-commerce. Lots of subjects have been written about the way of quality improvement by information systems with re-engineering business

process, but the potential threats of TQM without commitment, in e-commerce organizations are less attended.

The quality is not a stranger concept for specialized information systems producers that require acting based on the production, design and official systems analysis procedures in order to produce the fully documented and healthy product, Which has security needs and clear technical performance. A lot of IT professionals are familiar well with the use of TQM principles or ISO9000 quality standards to preparation process of the software.

Continuous improvement

Large organizations have a lot of experiences in the field of analysis, re-design, and documentation of business processes. Using continuous improvement of activities that will be led to the wasting of time, huge benefit can be achieved. To maintain the overall quality, each process must have a certain performer from beginning to end. On the quality of the organization, the person who has close relationships with customers, like the representative of the client's rights is needed. This individual must monitor the activities that are performed at the commitment time phase and with appropriate quality monitoring. In the e-commerce organizations, the employees should have special competencies.

Learning organizations

Many organizations encourage the social learning as the supplement of more traditional approaches of knowledge transferring. E-commerce is affected by learning communities and also makes it. Most businesses think of e-commerce in terms of effective deals, and new method of accessing customers.

The greatest potential for e-commerce is moving from the market view of spending customer relations towards the approach which interfere the client as members of the comprehensive community that are located around a set of products and services. Working communities are valuable for learning organizations, because these communities are full representatives of the organizational structure new layer that is not represented by the previous working units (Kurtus, 2000).

Statistical process control

Based on Tunca & Sutca's idea in 2006, statistical process control makes the administrators of website to observe and understand factors which affect the effectiveness of web site. As a result of such control, they can improve their services continuously to not only make their web site more attractive and character but also maintain and increase customer's satisfaction. Statistical process control could provide benefits for B2B, B2C, C2B and C2C sites (Tunca, 2006).

Benefits of TQM for e-commerce

According to Chou's idea in 2111, TQM has important benefits for different parts of e-commerce. The benefits are classified into B2C, C2B, C2C, B2B, and B2G (Chou, 2001).

Benefits of TQM for B2C: There are various kinds of e-commerce B2C like; "E-broker, auction & factory model". In e-broker model, there is a mediator between the suppliers and consumers. In factory model, the owner of the factory values the products through internal processes. In auction model, purchasers are allowed to determine the price of the product through bid request and specifying the suppliers' desire for sale with the bid price. Integrating TQM with B2C e-commerce, vendor companies can lead a full cycle of Full plan -Do-check-act.

This TQM approach is customer-centric and provides product with high quality for the customer, in the correct time and location.

Benefits of TQM includes high-quality content of web sites attract customers, high-quality technology can perform deals beyond time and space to do, high-quality supplemental services help

online sale and deals, high- quality functional methods can supply the security of e-commerce activities, and high-quality environment maintain e-commerce community.

Benefits of TQM for C2B: C2B includes people that sell their products and services to organizations. Key members of C2B e-commerce are buyer organizations, individual sellers, and suppliers of electronic intermediary services, providers and governments.

Because in C2B e-commerce the vendors are people, because of not having sufficient capital on keeping track of the overall quality process, they are hesitant. On the other hand individual retailers can achieve quality benefits from web sites content and with the approach of overall quality.

Benefits of TQM for C2C: In this type of e-commerce, the vendors sell their products and services directly to the customers. Auction sites are examples of this kind of business. The key elements of this type of business are individual buyers and sellers, suppliers of electronic intermediary services, providers and governments. In this type of business people are not able to apply the overall quality process, but as C2B, the vendors can achieve quality of the benefits through the content of the web site.

Benefits of TQM for B2B: This type of business includes both vendors and buyers. This type of business has wide usages that allow companies to have electronic relations with distributors, dealers, suppliers and partners. TQM in this type of business will cause the reduction of costs, reduction of warehouse and inventory costs, increase of provision adequacy, low marketing cost and improving the sale in the market (Kurtus, 2000)

The use of BPR in e-commerce

Using best re-engineering procedures of business process reengineering can make a distinction between the process that makes e-commerce possible and the process which support e-commerce, for using re-engineering of business process in support of e-commerce, there are three following scenarios:

Business process is initially applied for e-commerce, then it is used for a while and finally it is re-engineered.

Business process is initially re-engineered, then it is used for a while and finally it is applied for e-commerce.

Reengineering and applying in e-commerce can be done together.

The concept of BPR and e-commerce has symbolic communication together. Without the concept of BPR, e-commerce has little value, and without e-commerce, the concept of BPR is less applicable. In e-commerce, the concept of BPR enables modern companies to reconsider and redesign more process of business (Dejan, 2011). The results of research in 2013 showed that, however; there is little agreement between researchers and BPR users, but this procedure is a global approach (Muhammad Nauman, 2013).

Materials and methods

This article is retrospective type and has been prepared by using library studies and internet resources. The purpose of this research is studying the usage of TQM and BPR management procedures in e-commerce in order to introduce a proper managing procedure to improve this method of business by using achieved results.

Discussion

Based on the results of research by Sen in 2008, when the criteria of e-commerce systems quality are checked, you will realize they are based on the competition. Specially, quality criteria

such as credibility, usability, functionality and quality that their implementation is difficult, and the role TQM in achieving the benefits of these criteria shall be understood well by administrators, and there should be lots of attention to the implementation of TQM. In contrast to other sectors, in e-commerce section, the product is single and central. Beside the central structure, information and the quality of information are the original inventories that form the basis of TQM in e-commerce systems. Better quality and better management of information is possible, customer satisfaction is obtained and continuous development is with minimum cost. The ability to improve internal processes communicates directly with the quality and availability of information in system. Integrating such information with a central system will be resulted in infinite well results (Kurtus, 2000).

Business process re-engineering has a strong and longstanding approach to improve performance and useful innovation in organization and technologies of e-commerce, which is applied to redesign the processes within the organization such as supply and marketing ((Kurtus,2000). In fact, success in e-commerce is affected by BPR.

Using TQM and BPR as the management procedures of quality improvement with the effect on improving the quality in e-commerce, have caused increase of quality in e-commerce systems, therefore using these procedures as appropriate in these systems are recommended.

Recommendation

Regarding that TQM focuses on products and services process as well as product itself, it is recommended to perform the study of information quality in e-commerce systems.

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