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## Comparative characteristics of Business Process Reengineering and Total Quality Management Tomsk Polytechnic University

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### Abstract

The purpose of this research is to identify the comparative characteristics of quality systems: Business Process Reengineering and Total Quality Management. Business Process Reengineering involves the radical redesign of core business processes to achieve dramatic improvements in productivity, cycle times and quality. In Business Process Reengineering, companies start with a blank sheet of paper and rethink existing processes to deliver more value to the customer. Total Quality Management (TQM) describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work. Improving business processes is important for businesses to stay ahead of competition in today's marketplace. Comparative analysis has been performed for different characteristics of these systems. This analysis showed positive and negative properties of quality systems.

*Keywords:* Business Process Reengineering, Total Quality Management, the comparative characteristics, business processes, positive and negative properties;

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### 1. Introduction

In constantly changing environmental conditions, the introduction of quality management systems is due to both external and internal causes. Each company strives to create a qualitatively new level of production efficiency, to introduce such quality systems that can adapt to the constantly changing environmental conditions. The necessary systematic, integrated approach to modernizing business processes is not infrequently replaced by the introduction and use of an automated management system without drastic, necessary changes in the structure of the management organization, which are the biggest mistake on the path to the successful development of a company.

The most common quality systems are presented by reengineering and total quality management (TQM), which can help a company remain competitive in the market, as well as ensure the optimization of its operation, by creating high-quality work processes.

However, these systems are quite different from each other, and the question about which of them is more effective is still open.

Thus, the main purpose of this paper is to conduct a comparative analysis of the characteristics of reengineering and total quality management [1-2].

## 2. Discussion

Reengineering of business processes is a fundamental, radical transformation of all the processes of an organization in order to achieve maximum efficiency of the company.

Business process re-engineering (BPR) is a business management strategy, originally pioneered in the early 1990s, focusing on the analysis and design of workflows and business processes within an organization. BPR aimed to help organizations fundamentally rethink how they do their work in order to dramatically improve customer service, cut operational costs, and become world-class competitors.

BPR seeks to help companies radically restructure their organizations by focusing on the ground-up design of their business processes. According to early BPR proponent Thomas Davenport (1990), a business process is a set of logically related tasks performed to achieve a defined business outcome. Re-engineering emphasized a holistic focus on business objectives and how processes related to them, encouraging full-scale recreation of processes rather than iterative optimization of sub-processes.

Reengineering consists of two main stages:

- search for the ideal (optimal) type of business processes;
- determination of the best way for transferring a functioning business process to the best one

[4].

Total Quality Management (TQM) is a method of continuous, gradual quality improvement of all organizational processes.

Total quality management (TQM) consists of organization-wide efforts to "install and make permanent a climate where employees continuously improve their ability to provide on demand products and services that customers will find of particular value. Total emphasizes that departments in addition to production are obligated to improve their operations; "management" emphasizes that executives are obligated to actively manage quality through funding, training, staffing, and goal setting. While there is no widely agreed-upon approach, TQM efforts typically draw heavily on the previously developed tools and techniques of quality control.

This management is aimed at continuous parallel improvements of three main components:

- product quality;
- quality of process organization;
- level of personnel qualification [5].

Thus, having considered a brief description of each system, they can be analyzed in more details:

1. The main goal of universal quality management is the elimination of errors; the existing process is being improved, that is, there is no need for cardinal changeovers and retraining of personnel. The main goal of reengineering is to transform the whole process, which is based on large-scale changes and is suitable for companies that are in the stage of maturity or recession and whose business processes require immediate results from the changes.

2. General quality management is a long-lasting implementation of all changes. However, people are inclined to consider future benefits as unconvincing, since the results from the resources invested now will not be obtained immediately. Reengineering is of a short-term nature, which means that improvements in the company will be obtained in the near future.

3. General quality management is based on the gradual introduction of changes that continuously relate to all processes in the company. Accordingly, such an approach does not

require a large amount of initial costs; however, the conduct of the process itself is considered time-consuming work, since the implementation of changes is stretched over time.

Reengineering is a radical change in the process that requires a large amount of resources for the initial stages of equipment changeovers, as well as retraining of personnel.

4. The improvements that occur with the use of universal quality management are continuous and incremental, reflecting the effectiveness of the quality system.

Improvements to reengineering are intermittent, so it makes it impossible to make predictions, as well as to make strategic decisions.

5. Transformations with total quality management are for all personnel concerned, each employee works as a single unit in one big team, that allows all personnel to see the processes in the same way and also “move in one direction” to achieve a common goal. However, retraining of all personnel requires a lot of efforts and costs, as there is no universal approach to all employees, to each group; an employee needs an individual approach. Reengineering transformations affect individual groups of workers.

6. Under general quality management, team building and problem solving are understood as a normative nature and it makes it possible to maintain their state and improve it, however, such work does not give the employees freedom to reveal their potential.

When reengineering is introduced, innovative teams that are used for reconstruction and critical analysis are created; thus, it allows revealing the potential of employees, but in such teams there is a possibility of increased competition, which will adversely affect the work of the whole team, as well as the company as a whole.

7. Using universal quality management, the initial stage is easy, and it can be an incentive for further work, but the maintenance stage is difficult.

The introduction of reengineering is a difficult process only at the initial stages, the subsequent stages do not require much effort, and that is, after passing the initial stages of implementing improvements, the company management can be confident in the successful use of this system.

8. If we compare the magnitude of the improvements, the result of the introduction of reengineering will manifest itself only in individual processes; on the contrary, in the overall quality management, improvements will continuously affect all processes [2, 3].

### **3. Conclusion**

Thus, it can be said that the use of any quality system depends on the following factors:

- the number of processes that need urgent transformation;
- number of processes that require gradual improvement;
- level of maturity of business processes;
- stage of development in the life cycle of the organization;
- availability of investments (financial and other resources);
- the quality of management of involvement, both individual groups and the whole staff;
- the possibility of granting freedom of action to personnel in the work they perform to achieve the goals;
- state of the economic and political situation in the country.

However, the obvious fact is that each of the systems has its advantages and disadvantages; therefore, an effective innovation is a strategy that can create a combination of a system of total quality management and reengineering.

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