

Total Quality Management: West and East

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Abstract

The article is about Total Quality Management (TQM) which is one of the newest philosophy in management. TQM is an approach that focuses mainly on quality of goods and services and it assumes that each member of an organization participate in quality improvement. Article discusses and compares American, European and Japanese approaches because it is important to study leading countries' experience as it provides opportunity to apply them in practice after they are adapted to the specific work conditions of a company. Companies that practice TQM demonstrate enormous opportunities. Its essence is simple: to find out and satisfy customer needs.

Keywords: Isikava, Juran, Total Quality Management

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Introduction

During the last decades quality became one of the most important concept in management. Quality of products determines priorities in market, it provides stable development of nation, preservation of environment, health and human well-being. Total Quality Management (TQM) is one of the newest theories of management which principles and methods are directed on quality improvement. As competitiveness of an organization depends on quality management administration of organizations observes stability in a debugged quality management corresponding to the international standards. An organization that successfully applies total quality management in its everyday practice gets advantage because by applying TQM an organization differentiate its products from other companies, quality of products increases and consumers give preference to quality products. Thus, consumers get high quality products and producer makes profits. Based on the above-mentioned statement we conclude that organizations which apply TQM principles in their practice are profitable ones. The main idea of TQM is that a consumer and consumer's needs satisfaction is a cornerstone in doing successful business. In order to realize TQM it is necessary to carry out different transformation within an organization as TQM covers an organization in a whole - from input quality to consumer's satisfaction.

Basic concepts of Total Quality Management

During the last decades quality became a number one important idea in the field of management. Variety of consumers, requirements to the products and services, requirements to staff and management methods cause the necessity to fill up the concept of quality with a new content. On the change of traditional ideas about success of the business which con-

sisted in quick and cheap production of goods and services came absolutely new idea. These new ideas proclaim that quality is the most important feature for doing successful business. Quality penetrates the essence of management.

Total Quality Management (TQM) is based on the aspiration toward quality in practice of management which results to the total quality. TQM helps to solve problems connected with an increase of production management efficiency, interest of employees, increase of ready qualitative products output. The main essence of TQM is that the key concept is quality of performance which is directed for consumer's satisfaction. Despite the implementation of TQM system into the practice is a long-term process which requires significant efforts for mastering its subtlety, development of the corresponding system of view and realization, TQM principles results in fruitful system with enormous contribution to success of any organization.

For successful operation system of quality should provide basis for the realization of eight key principles which are a base in the field of quality. These principles are the following:

1. Orientation toward the customer
2. Role of top management
3. Involvement of employees
4. Process and System approaches toward management
5. Constant improvement
6. Decision-making which is based on the facts
7. Mutually advantageous relations with suppliers (Basovskyi & Protasiev, 2001).

There are great varieties of explanations for the concept of quality. Quality is suitability and reliability for use. The product has a high quality only if it can satisfy consumers' needs. We should understand the concept quality in a

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broad way; quality refers not only to the goods and services but also to the process of production of goods and services (Mazur & Shapiro, 2003).

Joseph M. Juran, the guru at quality issues, an American management consultant and engineer, explains that quality has two meanings: 1. "Quality" consist of those features of products which meet customer needs and thereby provide customer satisfaction; 2. "Quality" means freedom from deficiencies—freedom from errors that require doing work over again or that result in field failures, customer dissatisfaction, customer claims, and so on" (Juran & Godfrey, 1999).

Juran developed quality trilogy for managing quality (quality planning, quality control and quality improvement) and Quality Planning Roadmap which consists from 8 steps to be followed in order to achieve continuous quality improvement:

1. Identify who are your customers.
2. Identify customers' needs.
3. Develop a product that satisfy customer's needs.
4. Optimize the product features so that they would meet both customers' and organization's needs.
5. Develop a process to produce this product.
6. Optimize this process.
7. Check if the process is able to produce a product under operating conditions.
8. Transfer the process to operations (PP&S Headquarters, n.d.).

According to Armand V. Feigenbaum, the second American guru at quality issues, an author of total quality control which became a new philosophy in the field of management in 1960s, the main idea of total quality control is that quality should encompass every stage of a product development and every organizational hierarchical level, and he stressed the importance of relationship between people. He defines quality as the following:

"Quality is not determined by an engineer nor by a general management. Quality is a customer determination. It is based on upon the customer's experience, measured against his or her requirements – stated or unstated, conscious or merely sensed, technically operational or entirely subjective – and always undergoes changes.

Product and service quality can be defined as the total composite product and service characteristics of marketing, engineering, manufacture and maintenance though with the product and service in use will meet the expectations of the customer" (Feigenbaum, 1986).

Feigenbaum developed 10 features of quality:

1. Quality is the process that encompasses a whole company.
2. Quality is what customer says it is.
3. Quality and expenses is a sum, not a difference.
4. Quality requires both individual and team fanaticism.
5. Quality is a style of management.
6. Quality and innovations are mutually dependent.
7. Quality is ethics.
8. Quality requires continuous improvement.
9. Quality is the most cost-effective method.
10. Quality is the system of total quality control which encompasses both customers and suppliers (Rampersand, 2005).

Walter Edwards Deming, another guru at quality issues, an American statistician, professor, lecturer, author of "Japanese miracle", states the following: "A consumer is the most important unit in production line. Quality has to be directed on satisfaction of present and future needs of consumer. Quality starts from intention stated by managing director.

Engineers and other employees should transform these intentions into plans, specifications, control and production... Quality is the result of production process optimization not of the control" (Deming, 1982).

Deming developed well-known 14 principles that organizations should apply like a road map. These 14 principles are the following:

1. Make goods and services improvement as your constant goal.
2. Adopt a new philosophy corresponding to a new economic epoch.
3. Exclude the necessity of mass control by building quality in a product.
4. Exclude with rewards for purchases at the smallest prices; instead minimize aggregate expenses.
5. Constantly improve the system of production and service in order to improve quality and production, and to decrease expenses.
6. Apply on the job training.
7. Found the management. The process of management should help employees to perform their tasks by the best method.
8. Expel fear so that everybody could work effectively for the benefit of an organization.
9. Break down the barriers between departments.
10. Refuse from slogans, appeals to personnel and target indicators such as faultlessness or new performance standards.
11. Get rid of performance standards; replace them with a support from the management.
12. Eliminate the barriers which deprive personnel an opportunity to be proud of their efforts.
13. Introduce the programs of intensive training and self-improvement.
14. Connect every employee to the work of organization's transformation (Rampersad, 2005).

Western approach to the Total Quality Management

Great contribution into development of quality management in the US and Europe was made by Henry Ford I and Bill Gates - the "two captains of management well-known for innovative ideas in quality management. Also a great contribution into development of quality management was made by scientists such as Frederic W. Taylor, Max Weber, Henry Fayol, Harrington Emerson (Kvitko, 2005).

Development of the modern western approach of TQM belongs mostly to Philipp Crosby, Claus Meller and Tom Peters.

Philip B. Crosby, an expert in the field of quality, defines the concept of quality as "conformance to requirements" if we are to manage it. Consequently, the nonconformance detected is the absence of quality, quality problems become nonconformance problems, and quality becomes definable" (Crosbi,1980).

In his book B. Crosby states that "quality is free. It is not a gift but it is free. What is worth of money is low-quality goods – all the activities connected with failure to perform a job from the first trial. Quality is not only free but also it is a creator of a fair profit. Each penny which one do not spend on the production of wrong products becomes a half of penny at the end of the process. If one is able to convince in the quality necessity then he or she will be able to increase

profits for 5-10 percents. It is a big amount of money for free" (Crosbi, 1980). Thus, Crosby is an initiator of the spreading of the concept of zero defects which means that quality is free. Money should be paid not for quality but for its presence and quality should be controlled.

Claus Meller, Danish economist and "European guru of quality" states that the base of quality is personal quality. In his book "Personal quality" Moller states that products are created by people and people in turn should feel enthusiastic while performing their job which only is possible if employees are working over themselves. He formulated twelve "golden" rules and two methods (continuous quality control of the personal work and system of quality cards) for improvement of personal quality (Rampersand, 2005).

Another specialist of quality is Tom Peters known as an American business guru. He states that the most important feature in the process of quality improvement is leadership. Leader should be responsible for customer satisfaction, employees and innovations. Peters "believes that, as the effective leader walks, at least three major activities are happening: 1. Listening – suggest caring, 2. Teaching – values are transmitted, and 3. Facilitating – able to give on-the-spot help (Rampersand, 2005).

According to research handled among well-known American companies with a goal to identify the "receipt of success" of the successful companies, Peters stated that successful companies use 7 variables which should be considered as independent variables and they are: 1. Strategy, 2. Structure, 3. Systems, 4. Skills; 5. Style, 6. Staff and 7. Shared values, which is the most important principle and it is located in the centre. This model is known as McKinsey 7-S Framework (Figure 1) (Department of Trade and Industry, n.d.).

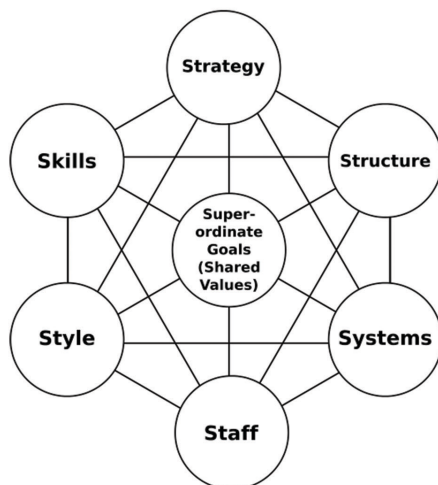


Figure 1. McKinsey 7-S Framework

Japanese approach to the Total Quality Management

Principles, ideas and methods used in Japanese management system were introduced by American quality gurus which were transformed over time and adapted to the Japanese traditional environment. Japanese culture, mentality and psychology are reflected in Japanese quality management system which is different in root from American style.

Application of Japanese model of management not only allowed Japan to restore its productivity after the World War II but also to become a leader in production of technological products. Well-known Japanese contributors in development of TQM are Kaoru Ishikawa, Genichi Taguchi and Shigeo Shingo.

Kaoru Ishikawa is a well-known Japanese scientist in the field of quality management who successfully adopted the basics of American management for the Japanese application. He stressed implications of statistical methods in industry. The basics of his studies are expressed in Ishikawa's "seven basic tools of quality" like quality circles, achieving consensus in decision-making process, continuous employees training to name some and fishbone diagram which is a graphical method of cause and effect analysis. Ishikawa was the first who identified the importance of "internal customer" and total company quality control ("Total Quality Management", n.d.). He states that quality is not just product's quality but also quality of aftersales service, management and company's itself.

Genichi Taguchi is a well-known Japanese statistician and telecom engineer. He stressed the importance of quality maintenance on the stage of a product design. Taguchi is an author of the robust design of a product; he introduced orthogonal arrays and linear graphs which are used to isolate noise factors from the other factors in a cost effective way. Also Taguchi connected economic costs and quality through mathematic dependence by introducing the loss function. According to Taguchi loss function "costs of quality increases as quadratic function as conformance values move away from the target". The main aspect in Taguchi's methods is quality improvement with simultaneous costs decrease (Total Quality Management, n.d.; Rampersand, 2005; Genichi Taguchi and Taguchi Methods – Practical, Rapid Quality, n.d.).

Shigeo Shingo is one of the developer of a well-known Japanese planning and production system Just in Time. Also he is known for SMED (Single Minute Exchange of Die) and system "poka-yoke", which excludes opportunity of mistake emergence. Shingo's methods focus attention on production rather than on management. Shingo's idea is to stop the process as defect is found, to determine the reason of defect emergence and its repeated emergence. The main part of the procedure is to detect mistakes in production before they become defects. He states that faultlessness in practices may be achieved through a qualitative design and detailed process research (Rampersand, 2005).

Comparison of different approaches to Total Quality Management

We have analyzed Western and Japanese approaches in TQM. Definitely there are many distinctions between quality management activities in the USA and Western Europe and Japan which can be explained by social and cultural features of these countries.

Quality is the goal and profit is its consequence for Japanese companies, however for Western companies the goal is a profit and quality is just in itself. Features of Japanese management system are the following: 1) Quality management is implemented through participation of a whole organization; 2) Personnel training for methods of quality management; 3) Function of quality circles; 4) Inspection of management quality activities; 5) Use of statistical methods;

6) National programs on quality control (Isikava, 1988).

Let us put Western and Japanese approaches into three tables which we divided according to three categories: gurus of TQM (Table 1), western modern approach (Table 2) and Japanese approach (Table3) so that we can now have a closer look at each author's view and see what common and different features are (for the construction of the table the following information was used: From Excellence to Quality (n.d.); Total Quality Management (n.d.); Mandru, Patrascu,

Carstea, Popescu, & Birsan (n.d.); hrm.ru (n.d.); Greenback Competence and Management Consulting (n.d.)).

Thus, from the tables below we can see authors of TQM consider that the goal of quality is to meet customer need and the role of training is very important. But every author have different point of view about quantity definition, basic orientation towards quality, responsiveness for quality, methods to achieve quality and key elements of implementation.

Table 1. Gurus of Total Quality Management

	W. E. Deming	J. M. Juran	A.V.Feigenbaum
Goal of quality	meet customer needs	please customer	meet customer needs
Quality definition	a predictable degree of uniformity and dependability at low cost and suited to the market	fitness for use	best for the customer use and selling price
Basic orientation towards quality	technical	process	total
Responsiveness for quality	management	management	everyone
Methods to achieve quality	statistical; minimize total cost; continuous improvement	statistical; quality trilogy; continuous improvement	statistical and engineering methods, TQC; continuous improvement
Key element of implementation	14 points program	10 steps for continuous quality improvement	10 benchmarks of TQC
Role of training	very important	very important	very important

Table 2. Western Modern Approach

	P. Crosby	T. Peters	C. Moller
Goal of quality	Zero defects	Meet customer needs	Meet customer needs
Quality definition	Conformance to requirements	Differ from others	Personal quality is the base of quality
Basic orientation towards quality	motivational	individual	personal
Responsiveness for quality	management	leadership	everyone
Methods to achieve quality	Translate requirements into measurable characteristics; continuous improvement	MBWA (Managing by Wandering About); Mc Kinse 7-S	2 methods if personal quality improvement; 12 golden rules for personal quality improvement
Key element of implementation	14 steps to quality improvement; quality is free	12 indications of quality revolution	Leadership; productivity; relationship; quality
Role of training	Very important	Very important	Very important

Table 3. Japanese Approach

	K. Isikava	G. Taguchi	S. Singo
Goal of quality	Meet customer needs	Meet customer needs	Meet customer needs
Quality definition	Product and aftersales service quality	Costs of non-quality	No defects in production
Basic orientation towards quality	technical	Technical, proactive	Technical
Responsiveness for quality	everyone	engineers	Management
Methods to achieve quality	Statistical; quality circles	Statistical design of experiments; loss function; continuous improvement	Poka-yoke; system of cause detection
Key element of implementation	Learn customers' needs; learn what customers will buy; impossible to define quality without knowledge of expenses; necessity to prevent defects and complains	Minimize variance; three phases/stages of quality design and development	JIT (Just-In-Time); SMED (Single Minute Exchange of Die); Zero Quality Control
Role of training	Very important	Important but not defined	important

Conclusion

There is a tendency in economics at present where quality plays one of the leading roles in production management. Quality is an important tool to be competitive, to win and keep advantageous position in the market. That is why organizations pay a great deal of attention towards providing high quality to its products and services. The goal of each member of an organization should be quality improvement and each should contribute to quality, everybody should participate in the process of building quality. There are different approaches in TQM developed by gurus of management, by European and Japanese quality managers. An author decided to examine an American, European and Japanese approaches in TQM because the companies of above mentioned countries are holding the leading position in the world, and US and Japan are symbols of prosperity and success.

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