

STATE AND TRENDS OF IMPLEMENTING QUALITY MANAGEMENT IN TRANSITIONAL CONDITIONS

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Rapid technological development, as well as stronger competition have increased the importance of product quality. At the same time, the quality has been prescribed by adequate norms or standards. The implementation of quality systems is extremely important for companies that seek their position on the global market. In the European Union, quality systems of the international ISO standard are being applied, which are based on the principles of the Total Quality Management. On the other hand, Croatia and other transitional countries still need to strive to achieve the culture of quality management in their economies. This paper reviews the state of the ISO standard implementation in the transitional countries, as well as in the world.

1. INITIAL CONSIDERATIONS

The globalisation process is characterised by stronger competition and ever-stricter marketing conditions. Therefore, quality management and quality assurance have become a necessity in the struggle for a market and buyers, resulting in continuous work in this field. The concept, which has to be embodied in a control system of any modern economic subject, is the concept of quality control. Quality control traditionally applies to the control of business results, and it usually follows a production process by establishing the discrepancy between the planned and achieved product quality. Total quality

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management strives for an integral approach, according to which this continuous activity is entrusted to all employees, and to which quality control is ever-more shifted to previous stages of the production process in all activity phases, so that the process itself is more researched, from the input research to the process output.

Many economists believe that product competitiveness can be achieved in many different ways, as e.g., by innovativeness, originality, complementarity and variety, and functional and qualitative advantages. Considering the importance of expenses which have to be constantly monitored, it is very important that a company develops an innovative approach to total quality upgrading, which would, consequently, lead to its survival in ever-stricter conditions of international competition. It is understandable that in such circumstances quality has been transforming from technical to manager category and that a modern approach to Total Quality Management and the application of ISO standards demand for a modified role of all management levels, as well as of all employees.

2. PRINCIPLES OF QUALITY CONTROL

Product quality is undoubtedly one of the most important factors of non-price competition on the market of the more developed economies. It presents the established level of product properties by which practical value and product usefulness are determined. The product quality is a degree which shows us to what extent the product meets the needs, wishes and expectations of customers. A superior quality increases the customers' loyalty, leads to repeated purchases and oral advertising (Budić & Andrić, 2005).

Therefore, quality policy can be applied to the entire business, whereas product quality has to be considered separately. In that sense, the following elements of product quality have to be taken into account (Kelly, 1997):

- effect,
- properties,
- durability,
- price,
- benefit and
- appearance.

In order to establish higher quality levels, a producer has to meet as many buyers' or users' demands as possible, taking into account all the above-mentioned quality elements. This especially applies to satisfying buyers'

demands toward the usage, price, durability, and technical properties of a product. For some products, aesthetic quality is particularly important, as well as their usage range. It means that a product may be cheap, but its purposefulness contributes to an important part of its quality. In that sense, the following two quality aspects may be pointed out (Bennet, 1994):

- the quality of compatibility, which is a degree to which a product meets technical specifications and
- the design quality which comprises all the properties that users or consumers find important for product value.

At first, the term *quality* referred only to a product, an object of exchange, and then it started to apply to services, as well. Later, this term referred to the entire company business and today, a process approach to quality has been accepted all over the world (Injac, 2002). The policy of improving the product quality on the global market is realised through the TQM (Total Quality Management) model whose purpose is to fully manage the quality, which involves the inclusion of all employee functions, as well as suppliers and customers into that system (Ružić, Tomčić & Turkalj, 2002).

TQM can be seen as a system management approach, the goal of which is a permanent increase of value for a buyer, by the shaping and continuous improving of organisational processes and systems. Such a modern approach to the process of quality management requires economic subjects to implement the following:

- defining the quality management principles,
- meeting all the basic requirements for quality management implementation,
- establishing the basic guidelines and methods of standard quality implementation,
- defining of methods for total quality management in the economy and
- permanent upgrading on the basis of acknowledged modern methods of quality management.

Finally, it can be concluded that TQM is a specific management concept oriented toward permanent business upgrading, team work, ever-increasing consumer satisfaction and cutting down of expenses.

3. BASIC ASSUMPTIONS FOR TQM IMPLEMENTATION

Introducing TQM is a complex and highly professional procedure. In order to efficiently introduce and implement TQM in terms of achieving goals, it is necessary to meet the following requirements (Lacković, 2003):

- to perform measuring, analysis and control,
- to perform an analysis of the business environment and human resources,
- to prioritize users' needs,
- to pursue continuous upgrading and
- to define quality levels.

TQM should primarily be oriented toward the consequent satisfying of consumers' needs and wishes in order to keep them permanently since quality begins and ends with a consumer. Therefore, it is necessary that both management and employees focus on the achievement of a high quality level and consumers', taking into account all their needs and, especially, competitors' activities. It means that management has to make a concept of an economic subject based on short- and long-term goals based on strategy plans since permanence of aims is a key principle of the TQM concept.

Quality improvement is a continuous process. In other words, reaching a quality maximum is only a hypothetic possibility. A conceptual basis of permanent quality upgrading is best described by Demingo's cycle for which an acronym PDCA (Plan-Do-Check-Act cycle) is used. This cycle is divided into the following stages (Meler, 2002):

- *plan stage*, which implies development of a plan, based on the analysis of consumers' needs for a certain quality level,
- *do stage*, which implies carrying out a smaller and experimental plan,
- *check stage*, implying observation of the effects of the experimental plan implementation, particularly in relation to discrepancies between consumers' needs and specific characteristics of the business process and
- *act stage*, implying the upgrading of quality, based on the results from the third stage.

By performing these activities continuously, higher product quality will be assured. This is considered to be crucial for TQM implementation, and this implies that quality improves with the careful monitoring of employees and

their permanent education for their specific jobs, whereas management provides for a positive atmosphere of open communication regarding quality problems.

4. ISO 9000 QUALITY STANDARDS

In recent years, the aspiration for internationalisation of the standardisation processes has been increasing, as well as developing internationally satisfying standards. ISO (International Organisation for Standardisation) is a world union of national standardising bodies (ISO members). International norms are usually prepared by ISO technical boards. Every member interested in the field for which a technical board has been founded has the right to be represented in this body. International organisations, governmental and non-governmental, connected with ISO take part in its work, too. At present, international standards of the series ISO 9000 are the most recognized and they have resulted in international standards of ISO 9000 quality management. The series ISO 9000 comprises the following definitions and concepts (Kelly, 1997):

- ISO 9001 is the most comprehensive standard which provides for all quality aspects, from designing to production and servicing,
- ISO 9002 leaves out the design stage and concentrates on production and delivery,
- ISO 9003 is less detailed than the previous two and stresses examining and inspection,
- ISO 9004 is not a standard, and is only oriented toward internal methods for meeting quality measures of other standards.

The worth of ISO 9000 series has received world-wide recognition and acknowledgement from various institutions, companies, and quality researchers. Some of the most significant benefits of implementing these standards are the following (Douglas, Coleman & Oddy, 2003):

- increased market opportunities, as customers will see you as more effective and better organised,
- reduced costs,
- stronger reputation in the eye of stakeholders,
- reduced waste (time and materials),
- more business through complying with an internationally recognised and respected standard,
- complete more effectively through increased customer satisfaction,
- improved management control and
- higher profit margins, sale per employee and a higher profit per employee than the industry average.

The decision on registration of an ISO standard should be made on the basis of user and competitor analysis, and after the internal situation in an enterprise has been researched. At this point, present quality and long-term plans should be considered. What will be applied and to what degree depends on the entrepreneur's decisions; that is, on the quality level they want to establish. An entrepreneur makes this decision on his own. Implementation of norms or ISO 9000 standards requires a great deal of responsibility and it has, as a rule, the following stages (Lacković, 2003):

- project design,
- elaboration,
- implementation,
- internal control,
- verification.

The difference between TQM and ISO standard lies in the fact that TQM is a process of quality management, whereas standards represent a particular quality level or degree. The primary value of ISO 9000 standards is that they synchronize a general approach for quality assurance in all phases of a production or business process. That means that an enterprise has to satisfy users' needs continuously. Besides, it has to give evidence for an achieved quality level. Therefore, the primary objective of ISO 9000 norms is to help all organisations, regardless of their size and kind, in applying and efficient implementation of quality management systems. Its goal is to define a unique system which will assure distributors that their products and services meet the market demands and users' needs.

5. QUALITY ASSURANCE

Introducing a particular level of the ISO standard is not a completed process, primarily because that level must be maintained and continuous improvement i.e. quality assurance must be pursued. This calls for the responsibility of every single employee in the production chain, from the design to the distribution, i.e. servicing. Therefore, perpetual importance must be given to the requirement for the quality implementation, not only in the product or service, but also in the overall company business. In addition, market competition places constant demands on the improvement of the pre-established quality level. Quality assurance is implemented in all management stages, especially in quality management. For this reason, quality assurance involves planning, evaluation and management. Figure 1. illustrates the quality management procedures i.e. each phase of the process.

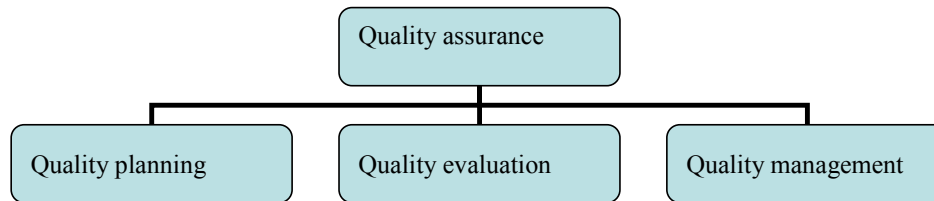


Figure 1. Quality assurance

Source: Dulčić, M.; Pavić, I.; Rovani, M.; Veža, I.; Proizvodni management, Faculty of Economics and Faculty of electrical engineering, mechanical engineering and shipbuilding, Split, 1996, p. 210.

Quality planning begins as early as the market research and is incorporated into all production phases including servicing. In order to prevent mistakes, special attention needs to be given to the following (Kelly, 1997):

- accurate setting and compliance with customer or market requirements,
- ensuring the possibilities of production and control beyond the necessary requirements for the quality of the outgoing product through design and production planning,
- compliance with all regular requirements and
- production process planning, which ensures the required level of quality at the lowest production costs.

If quality assurance is being conducted within a company, the following steps or procedures are to be taken into account:

- product or service planning, as well as the planning of every single management procedure,
- planning the quality level of a company and its important functions,
- function analysis,
- problem avoidance,
- error analysis,
- test planning, since all procedures can be organised by the owners themselves,
- control and management plan.

Quality control includes all the relevant actions required to check the validity of each value i.e. parameter. In addition to control planning, specific measurements must be taken, and accordingly, a protocol must be designed. The chain of quality control starts upon the entry of raw material, packaging and all other production materials, and involves the production as well as the

output of an end product (Buble, 2006). Quality management is an important and continuous activity incorporated in the overall company management. The key element of quality management is process management and its control.

6. THE GLOBAL ISO 9001 PRACTICES

ISO 9001 is an international standard which sets requirements for the establishment and maintenance of a quality management system and makes the basis for the implementation of any other management system in a company business. Being the most widespread insurance model, it has been taken as the subject of the analysis. Toward the end of 2005, ISO issued an overview of certificates according to ISO 9001 standards. Conducted by the consulting company A. C. Nielsen, this has been the fourteenth such report. The results illustrate the situation at the end of 2004. The total number of certificates according to the ISO 9001:2000 standard is 670 399 which indicates a 35% increase compared with the last year's results and as much as a 64% increase in comparison with the situation in 2000, prior to the beginning of the transition process. The certificates were issued in 154 countries around the world.

Table 1. Number of issued ISO 9001 certificates in the world

World results	Dec. 2001	Dec. 2002	Dec. 2003.	Dec. 2004.
World total	44 388	167 210	497 919	670 399
World growth		122 822	330 709	172 480
Number of countries (economies)	98	134	149	154

Source: ISO Survey 2005, p. 3.

Table 2. Number of issued ISO 9001 certificates in the world

Country	No. of certificates	Country	No. of certificates
China	132 926	USA	37 285
Italy	84 485	France	27 101
UK	50 884	Germany	26 654
Japan	48 989	Australia	17 365
Spain	40 972	India	12 558

Adapted from: ISO Survey 2005, p. 3.

Results of the conducted survey reveal that China is by far the world's leading country in the number of the issued ISO 9001 certificates, followed by Italy, Great Britain, Japan, etc. With the aim of comparing the Republic of Croatia with the world countries as well as with the countries in the region, an overview of the number of issued ISO 9001 certificates is given in the text below.

There is a clear upward trend in the number of issued certificates in most transitional countries, including Croatia and Bosnia and Herzegovina, with a more rapid increase being recorded in Croatia in the time given. The situation in Croatia was compared with countries such as Albania where the process of ISO standards implementation is yet at an early stage. The upward trend is considerably related to the fact that unlike its neighbouring countries, Croatia is more rapidly transforming into a modern competitive economy. As a result, Croatian enterprises are technically better prepared for the entry into the EU and play by its rules. Such research reveals that the highest proportion of the certified organisations is to be found among the biggest Croatian businesses, particularly in the competition-driven sectors, striving to win the best possible position on the global market, to name just a few: production of electric machines and appliances, production of non-metal products, shipbuilding, food and beverage production, maritime transportation, etc.

Exposure to global competition as well as the search for permanent customers force companies to turn quality into their business strategy. Given the fact that Croatia has opted for the entry into the EU, the number of ISO certificates is expected to be on the increase in the next few years.

Table 3. The number of issued ISO 9001 certificates in the Republic of Croatia and some other European countries

Europe	Dec. 2001	Dec. 2002	Dec. 2003.	Dec. 2004
Albania		1	2	6
Bosnia and Herzegovina	1	8	47	209
Bulgaria	38	246	842	1 685
Croatia	30	194	580	966

Adapted from: ISO Survey 2005, p. 4.

7. CONCLUSION

The analysis of the practice related to TQM and ISO standards in the world indicates an increasing tendency for their implementation in modern businesses. The TQM concept was designed with the objective of permanent performance improvement with respect to the needs of all interested parties on the market. Such a system helps ensure the credibility of the organisation as well as the customers' confidence in its capability of distributing goods that consistently meet the requirements. By examining the corporate success and the quality system, certain causality between business efficiency and quality has been determined. With respect to the current situation in Croatia, it is evident that ISO standardisation and quality are making a considerable impact on the process of Croatia's admission and entry into the European and global economic as well as other integration. A similar logic may be of use to other transitional countries. Namely, it is the formally-based quality that on the one hand, gives a guarantee of a feasible cooperation with Europe and on the other hand, provides a basis for further integration in the economic and political sense. In conclusion, quality, in terms of the business system, is slowly but steadily finding its place in the economies of the transitional countries.

REFERENCES

1. Bennet, R. (1994): *Management*, Informator, Zagreb
2. Buble, M. (2006): *Management*, Ekonomski fakultet Split, Split
3. Budić, H., Andrić, B. (2005): The significance of the marketing strategy in the product development on the global market, *Proceedings of the 4th DAAAM International Conference on Advanced Technologies for Developing Countries on the occasion of 30th Anniversary of University of Osijek*, September 21-24, Slavonski Brod, Croatia.
4. Douglas, A., Coleman, S., Oddy, R. (2003): The case for ISO 9000, *The TQM Magazine*, Vol. 15, No. 5, pp. 316-324
5. Dulčić, M., Pavić, I., Rovani, M., Veža, I. (1996): *Proizvodni management*, Ekonomski fakultete Split/FESB, Split
6. Injac, N. (2002): *Mala enciklopedija kvalitete - I. dio: Upoznajmo normu ISO 9000*, Oskar, Zagreb
7. ISO Central Secretariat (2005): *The ISO Survey of Certifications 2005*, Geneve
8. Kelly, J. M. (1997): *Upravljanje ukupnom kvalitetom*, Potecon, Zagreb
9. Lacković, Z. (2003): *Menadžment malog poduzeća*, Grafika, Osijek
10. Meler, M. (2002): *Marketing*, Ekonomski fakultet Osijek, Osijek

11. Ružić, D., Tomčić, Z., Turkalj, Ž. (2002): *Razmjenski odnosi u marketingu*, Faculty of Economics Osijek, Osijek

STANJE I TRENDOVI U IMPLEMENTACIJI CJELOVITOG UPRAVLJANJA KVALITETOM U TRANZICIJSKIM UVJETIMA

Sažetak

Brz tehnološki razvoj i sve snažnija konkurencija naglašavaju značaj kvalitete proizvoda. Istovremeno se kvaliteta preskriptivno iskazuje odgovarajućim normama/standardima, a implementacija sustava upravljanja kvalitetom je od iznimnog značaja za poduzeća koja traže svoje mjesto na globalnom tržištu. U Europskoj uniji koristi se međunarodni ISO sustav, zasnovan na principima cjelovitog upravljanja kvalitetom. S druge strane, Hrvatska i druge tranzicijske zemlje i dalje trebaju težiti kulturi upravljanja kvalitetom. U ovom se radu pregledno iskazuje stanje implementacije ISO sustava u tranzicijskim zemljama i u svijetu.

