

Certain Aspects of Providing Customer Satisfaction: Research Results from Serbia

Dejan Đorđević
Dragan Čočkaló
Zvonko Sajfert
Milan Nikolić

The paper presents research results obtained during the process of modeling a system (processes) for providing satisfaction of a company's customer needs. The cybernetic model assumes a process approach and appropriate marketing research at the beginning and corresponding evaluation at the end; it is also harmonised with the conditions in which Serbian companies (production and services) work and it is created to enable easier managing of these processes with the aim of achieving business excellence.

Key Words: QMS, TQM, relationship marketing, customer satisfaction, cybernetic model

JEL Classification: M11, M31

Introduction

In modern economies, characterized by global trends, achieving business excellence and creating world class products and services, as basic preconditions of company's growth and development, are not functions of one organizational unit within the company, but they represent the result of synchronized activities of all company's functions, according

Dr Dejan Đorđević is a Professor of Marketing and Quality Management at the Technical Faculty 'Mihajlo Pupin' in Zrenjanin, University of Novi Sad, Serbia.

Dr Dragan Čočkaló is an Assistant Professor of Quality Management and Entrepreneurship at the Technical Faculty 'Mihajlo Pupin' in Zrenjanin, University of Novi Sad, Serbia.

Dr Zvonko Sajfert is a Professor of Management and Human Resource Management at the Technical Faculty 'Mihajlo Pupin' in Zrenjanin, University of Novi Sad, Serbia.

Dr Milan Nikolić is an Assistant Professor of Decision Theory and Strategic Management at the Technical Faculty 'Mihajlo Pupin' in Zrenjanin, University of Novi Sad, Serbia.

to precisely defined objectives of the company (Cockalo and Djordjevic 2006).

The objective of an organisation should be achieving and understanding the optimum level of customer's satisfaction (Sajfert, Dorđević and Bešić 2008). This field represents a base of three concepts: quality management, total quality management and business excellence and relationship marketing.

Quality components, such as solving complaints, cooperation of company's representatives with customers, availability of products and services, cost and price policy and activities related to making contracts, have a great influence on customers' satisfaction (Courage and Baxter 2005; Conca, Llopis and Tari 2004; Saraph, Benson and Schroeder 1989; Hanna, Backhouse, and Burns 2004). On the other hand, customers' satisfaction also influences the company's characteristics, such as spreading positive information about the company and its services and products (Cockalo and Djordjevic 2008; Saad and Siha 2000; Evans and Burns 2007).

The concept of 'total quality' extends well beyond the marketing customer-perceived view of quality (Garvin 1988; Zeithaml, Parasuraman, and Berry 1990) including all key requirements that contribute to customer-perceived quality and customer satisfaction. Total quality broadens prior notions of quality in that it includes consideration of business processes for providing complete customer satisfaction on the full range of product and service needs. Essentially, the total quality concept is a general philosophy of management (Price and Chen 1993; Mohr-Jackson 1998).

Business excellence presents a business strategy which demands complete commitment and acceptance of this concept from the management (Terziovski and Samson 1999; Irani, Baskese and Love 2004; Dale 1997). The EFQM model of business excellence is based on eight principles. The belonging criteria are: leadership, policy and strategy, people – management of employees, partnership and resources, processes, customer results – customer satisfaction, people results – employees' satisfaction, society results – the influence on society and key performance results (EFQM ed. 2002). All of these are the basis for self-evaluation whose purpose is to evaluate the 'maturity phase' of the organization and to focus on the problems of further business improvement (Rusjan 2005; Teo and Dale 2007; Dale and Ritchie 2000; Motwani 2001; Tari 2005).

The term 'relationship marketing' was first introduced by Berry in a services marketing context (Berry 1983). Managing relationships is,

however, nothing new in business. Many entrepreneurs do business by building and managing relationships and always have, but without using the term relationship marketing. Relationship marketing is a process by which a company builds a long lasting relationship with possible and also the existing customers in such a way that both sides (sellers and buyers) are focused on commonly defined objectives (Evans and Laskin 1994; Grönroos 1994). Brookes and Little (1997) give a broader explanation, saying that this concept is based on data base management, interactive market communication and web marketing. The achievement of these objectives is reached through: (1) the understanding of customers' needs, (2) treating customers' as partners, (3) making such conditions that employees satisfy all customers' needs; this can demand initiative and efforts from employees that can exceed the norms of the company, and (4) providing the best possible quality in accordance with customers' individual needs (Evans and Laskin 1994).

Building partnership with suppliers, especially with service companies which make the selling-service network, educating and motivating employees, encouraging and stimulating personnel to express free initiative and creativity in solving problems through communication with customers and the concept of business excellence are, beside the relationship with customers, crucial inputs in the relationship marketing concept.

Positive results of effectively positioned relationship marketing are: (1) high percentage of satisfied customers, (2) greater loyalty of customers, (3) quality of products/services is better perceived by customers, and (4) increasing profit of a seller-company (Evans and Laskin 1994; Grönroos 1994).

The Methodological Setting of the Research

The objective of the research (see Cockalo 2008) was to create and present a theoretic model of a system for providing satisfaction of a company's (firm's) customers' needs. This model assumes a process approach, appropriate marketing research at the beginning and corresponding evaluation at the end. The model is harmonised with the conditions in which Serbian companies (production and services) work and it is created to enable easier managing of these processes with the aim of achieving business excellence.

Pre-conditions of the research were:

General. It is possible to create a universal theoretic model for providing satisfaction of customers' requirements that will integrate the re-

quirements of marketing research, quality requirements precisely given by the ISO 9000:2000 series of standards as well as the needs of productive and non-productive organizations, especially when the requirements of the Republic of Serbia economy surroundings are in question.

Specific pre-condition 1. It is possible to carry out a systemic analysis and a synthesis of a model for providing satisfaction of customers' requirements that integrate: criteria of business excellence in modern business conditions, the requirements of research marketing and quality requirements precisely given by the ISO 9000:2000 series of standards, particularly by using the following:

- By analysis, criteria of business excellence in modern business conditions, marketing requirements for satisfying customers' needs, as well as specific requirements given by the ISO 9000:2000 series of standards, relevant for the model, can be postulated;
- By analyses a group of procedures for monitoring, measuring and analysis, of company- customers' satisfaction can be obtained;
- Basic functions, and sub-processes can be analyzed;
- On the base of previous analyses and by synthesis a starting model structure can be approached;

Specific pre-condition 2. The existence of the model is justifiable, but there are requirements, elements and activities that were not considered during preparation of the proposed model although they are specific and important for companies' work (productive and non-productive) in the Republic of Serbia. They are:

- New elements/activities should be integrated in the model.
- Proposed elements/activities that should be integrated in the model will depend on specific needs of a company and the experts' opinion, from the sphere of quality.

Research target groups were:

- companies (productive and/or services), which are, in accordance with the objective, certified according to the system of QM standards (ISO 9000 series of standards) and which are registered and work in Serbia, or managers – working in the quality and/or marketing sector in these companies, as the primary group,
- experts, in the field of quality and/or marketing, as a control group.

Interviewing of available companies and experts was primarily carried out by e-mail survey. The reasons for this type of survey were fast response and costs, which were considerably lower compared to surveying by mail or some other type of interview, paying attention to the main characteristics and problems (Hanic 1997) (the biggest response, from 20 to 30%, but sometimes it does not exceed 5%, therefore the sample is not representative). A part of the questionnaire was personally distributed to some companies and experts. About 600 companies and 100 experts were included in the survey.

For the sake of the survey, a questionnaire was created (taking care of the methodology of the research). The communicative principle was: one questionnaire – one company/expert; 84 companies and 37 experts accepted to participate in the survey. The sample is representative because it includes more than 5% of companies in the Republic of Serbia which have the certificate ISO (JUS ISO) 9001:2000. Reference data on the certificate number were taken from the the ISO Survey (2006), the last available one during the research realization. Here, 1551 certified companies are mentioned.

According to Courage and Baxter (2005) the response in researches of this type is 20-60%, while in other works (Conca, Llopis and Tari 2004; Saraph, Benson and Schroeder 1989; Cockalo and Djordjevic 2008; Terziovski and Samson 1999; Irani, Baskese and Love 2004; Motwani 2001; Tari 2005; Segars, Grover and Kettinger 1994) it is not greater than 30%. In this research work, companies' response is 14%, and the experts' 37%, which indicates uninterest and/or dismotivation of the employees for co-operation.

The part of the problem which influenced a smaller response (especially) of companies in this research includes 'technology factors,' taking into account IT (il)literacy of the employees (Preradovic 2008), as well as the implementation of antispam programs on servers in companies. However, these claims are not confirmed.

The survey was mainly realized in November and December 2007 and in January 2008.

The structure of the surveyed companies was:

- According to ownership structure the companies were mainly private 61 (72.6%), then public 10 (11.9%), socially owned 8 (9.5%) and other 5 (6%);
- According to the field of work: agriculture, hunting, forestry and

water management 3 (3.4%), ore and stone mining 1 (1.1%), manufacturing industry 46 (52.3%), electrical, gas and water generation and supply 5 (5.7%), building construction 9 (10.2%) wholesale and retail trade; motor vehicles, motorcycles and house-ware/personal repair 8 (9.1%), traffic, warehousing and connection 3 (3.4%), administration and defence; compulsory social insurance 2 (2.3%), education 3 (3.4%), health and social care 3 (3.4%), other communal, social and individual services 5 (5.7%);

- According to the size: micro 6 (7.2%), small 8 (9.5%), medium 38 (45.2%), big 32 (38.1%);
- Position of the interviewed: director (general manager) 10 (11.9%), leading manager 49 (58.3%), consultant 3 (3.6%), the rest 22 (26.2%).

The structure of the interviewed experts:

- The majority of the interviewed were male 31 (83.8%) while females were only 6 (16.2%);
- The greatest number of the interviewed were over 50 years of age 13 (41.9%), 11 (35.5%) were between 30 and 40, and the smallest number comprised those between 40 and 50 years of age 7 (22.6%). Six experts did not answer this question;
- Level of education: the majority were PhD 15 (40.6%), experts with Master's degree and Bachelors were 10 (27%) and 2 (5.4%) of the experts had college diplomas;
- Occupation answered by 22 (59.5%) of the interviewed: the majority were university professors/college professors – 11, five experts were employed as consultants, there were 2 assistants and 2 technologists, 1 director (manager), 1 engineer and 1 programmer;
- Position of the interviewed in their organizations answered by 36 (97.3%): directors (managers) 5 (13.2%), leading managers 10 (26.3%), consultants 1 (2.6%), owners 2 (5.3%), others 20 (52.6%).

Methods of statistical analysis and presentation. During the checking phase of statistically relevant differences in the answers of different-size-companies (types of companies: 1 – micro and small, 2 – medium, and 3 – big), the data types which appeared in the survey led to the application of two different methods of statistical analyses:

1. Kruskal Wallis – one-way analyses of the variants among the ranks for data types of lower level (nominal), as well as with data without

beginner's presumption on the existence of a certain distribution (most frequently normal);

2. One way ANOVA – one-way analyses of the variant, but in this case for more superior data of interval level, such as significance grades;

ANOVA was also used in comparison of companies (total) and experts' data.

It was taken that the evaluation limit of reliability results, i. e., probability which enabled claiming that the data were error consequences or random variations, was $p = 0.05$. This means that for $p \leq 0.05$ there exists a statistically significant difference in results.

It was determined that there was no significant statistic exception in the answers of companies' (total) and experts, therefore there is no discussion on this matter.

Where appropriate, in processing and analysing the research results, Pareto analyses were used in order to sort the answers according to degree of importance both for the companies and experts. The research results presented in this paper, include the answers that belong to the categories 'very important' and 'important.' The category 'other' was neglected.

The Model

This part of the paper presents a model for providing satisfaction of customers' requirements, which is derived from theoretic research, but whose justifiability has been proved by research into attitudes of companies and experts in Republic of Serbia.

Structure presentation and the ties within the model are supported by additional explanations and statistic indicators which justify the model and its elements (modules). The model itself, as well as its function, is supported by additional explanations and statistic indicators which justify the model and its elements (modules).

THE BASIC FUNCTION OF THE MODEL

The basic function of the model is providing satisfaction of customers' requirements. By implementing this model harmonization is provided of the basic function with the principles and criteria of business excellence, as well as with marketing requirements in relation to customers' requirements and their satisfaction and also specific requirements of the ISO 9000:2000 series of standards. However, all requirements and interests of suppliers and other stakeholders have to be respected.

MODEL STRUCTURE

The explanations of sub-process (module) elements which represent the extension of the basis given by ISO 9001:2000 are mentioned below. The structure of the standard is used for better description and explanation of the model which, in fact, relies upon it.

Management responsibility

Apart from responsibilities defined by the standard, the management should:

1. Take care about the principles and the criteria of business excellence while defining policy, objectives and tasks, as well as processes.

The principles are:

- results orientation,
- customer focus,
- leadership,
- management by processes and facts,
- people development and involvement,
- continuous learning, innovation and improvement,
- partnership development,
- corporate social responsibility.

The criteria are:

- leadership,
 - policy and strategy,
 - people,
 - partnership and resources,
 - processes,
 - customer results,
 - people results,
 - society results,
 - key performance results.
2. During the process of management review they should take care about the criteria of business excellence incorporated in business policy.
 3. Provide taking care about input elements of relationship marketing concept while defining policy, objectives and tasks, as well as the planning and realization of processes:

- understanding customers' expectations,
- building service partnerships,
- empowering employees,
- total quality management,

that also includes evaluation of customer satisfaction.

4. Provide monitoring, evaluation and analysis of output elements in relationship marketing concept:
 - quality product,
 - customer satisfaction (effects: complaints, recommendations, re-buying),
 - customer loyalty,
 - increased profitability (also one of the key indicators of business results in the business excellence model).
5. Take care about output elements of the relationship marketing concept during the management review phase.

When asked to evaluate the importance (in the research (survey) the Likert 5-point scale was used) that should be given to the principles of business excellence while defining policy, objectives and tasks in the organization, 66 (85.7%) out of 77 (91.7%) of the interviewed in companies, or 33 (91.7%) out of 36 (97.3%) experts gave the answers which are shown, comparably, in table 1. All the principles were evaluated as significant or particularly significant (the lowest grade was given to corporate social responsibility by the experts 3,39).

Having been asked to evaluate the significance given, or which should be given to criteria of business excellence when defining policy, objectives and tasks in the organization, the interviewed 63 (85.1%) out of 74 (88.1%) in companies, and experts 33 (91,7% out of 36 (97,3%) evaluated the criteria and their application as significant (table 2).

Table 3, including the companies' and experts' grades, shows how important it is to take care about the criteria of business excellence by the leading management in management review. Affirmative answers were given by 65 (83,3%) out of 78 (92,9%) companies, and 33 (91,7%) out of 36 (97,3%) experts. Here, a statistically significant difference was noticed in the answers of the different-type companies ($p = 0.043 < 0.05$) and the grades are shown separately. A high average grade of significance given to the criteria of business excellence was noticed, in other words, they were evaluated as significant and particularly significant – the lowest grade was 3.50.

TABLE 1 Comparative survey of average significance grades that should be given to the principles of business excellence when defining policy, objectives and tasks in the organization

Principles of business excellence	(1)	(2)
Results orientation	4.17	4.39
Customer focus	4.42	4.61
Leadership	3.82	4.18
Management by processes and facts	3.80	4.06
People development and involvement	3.76	3.88
Continuous learning, innovation and improvement	3.68	3.79
Partnership development	3.94	3.94
Corporate social responsibility	3.58	3.39

NOTES Column headings are as follows: (1) average grade of the interviewed in companies, (2) average grade of the experts. ANOVA significance test – group: companies, $F = 2.066$, Sig. = 0.152.

TABLE 2 Comparative survey of average significance grades which should be given to the criteria of business excellence when defining policy, objectives and tasks in the organization

Criteria of business excellence	(1)	(2)
Leadership	3.73	4.00
Policy and strategy	3.87	4.24
People	3.68	4.21
Partnership and resources	3.65	3.97
Processes	3.90	4.15
Customer results	4.47	4.48
People results	3.58	4.15
Society results	3.52	3.70
Key performance results	4.23	4.27

NOTES Column headings are as follows: (1) average grade of the interviewed in companies, (2) average grade of the experts. ANOVA significance test – group: companies, $F = 3.350$; Sig. = 0.052.

It is interesting that particular significance is given to the principles and criteria which are directly oriented towards customers (the lowest average grade is 4.23); this shows the readiness of the organizations to devote themselves to their customers, as well as the importance which the experts give to this question.

Both companies and experts consider significant or satisfying (in the research (survey) the Likert 5-point scale was used) input elements of

TABLE 3 Comparative survey of the average significance given to the grade, and which should be paid to the criteria of business excellence at management review by the leading management

Criteria of business excellence	(1a)	(1b)	(1c)	(2)
Leadership	3.67	3.54	3.73	4.00
Policy and strategy	4.08	4.04	3.88	4.24
People	4.33	3.69	3.50	4.21
Partnership and resources	4.17	3.69	3.62	3.97
Processes	4.17	3.73	4.04	4.15
Customer results	4.67	4.42	4.23	4.48
People results	3.92	3.81	3.50	4.15
Society results	3.92	3.46	3.62	3.70
Key performance results	4.67	4.35	4.12	4.27

NOTES Column headings are as follows: (1a–1c) average grade of the interviewed in companies, (2) average grade of the experts. ANOVA significance test – group: companies, $F = 3.584$. Sig.= 0,043.

TABLE 4 Comparative survey of the average significance grade of input elements in the relationship marketing concept

Input elements of relationship marketing concept	(1)	(2)
Understanding customers' expectations	4.31	3.88
Building service partnerships	3.92	3.42
Empowering employees	3.66	3.71
Total quality management	3.76	3.26

NOTES Column headings are as follows: (1) average grade of the interviewed in companies, (2) average grade of the experts. ANOVA significance test – group: companies, $F = 2.892$; Sig.= 0.107.

the relationship marketing concept, especially in the sphere of planning (table 4).

A comparative survey of the average grades which the interviewed used to evaluate the significance of output elements of relationship marketing, especially in the sphere of planning is given in table 5. It should be emphasized that all the elements were evaluated as significant both by companies, 81 (96.4% answered the question, and by experts 35 (94.6%) of the interviewed.

Resource management

Resource management includes:

1. Human resources: HRM should include requirements which de-

TABLE 5 Comparative survey of average the significance grade of output elements in the relationship marketing concept

Output elements in the relationship marketing concept	(1)	(2)
Quality product	4.64	4.06
Customer satisfaction (complaints, recommendations, re-buying)	4.44	4.26
Customer loyalty	4.04	4.09
Increased profitability	4.19	3.91

NOTES Column headings are as follows: (1) average grade of the interviewed in companies, (2) average grade of the experts. ANOVA significance test – group: companies, $F = 1.431$, Sig. = 0.289.

mand taking care about the requirements of important elements of the relationship marketing concept and a business excellence model during the process of selecting, involving, training and motivating employees, especially those in direct contact with customers.

2. Infrastructure.
3. Work environment.

Training and motivation of employees, as input elements of relationship marketing, take for a starting base an appropriate selection of staff, especially those who need to be in direct contact with customers. The offered criteria are presented in figure 1, according to the degree of significance. Totally 82 (97.6%) of the interviewed in companies and 36 (97.3%) experts answered the question. The most significant criteria are: communicative abilities and experience and the least significant is appearance.

Appropriate training, encouraging and rewarding of employees, together with free initiative and imagination, from the standpoint of relationship marketing means that the employees, properly guided, can fulfil expectations and answer the requirements of customers better than any procedure and, in that way, reduce frustration and dissatisfaction of customers. In order to apply such an approach it is important to fulfill four conditions. Figure 2 shows that 79 (94.1%) companies and 35 (94.6%) experts gave their statements on this.

Product realization

Customer-related processes. Effective relationship with customers demands from organizations to:

1. Perform acceptable evaluation of customer satisfaction, when pos-

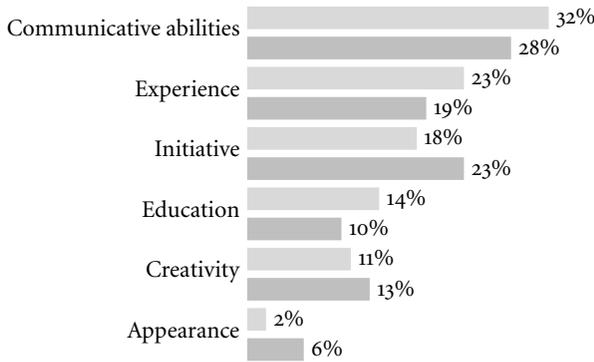


FIGURE 1 Key criteria for selecting staff that should be in direct contact with customers (light gray – firms, dark gray – experts)

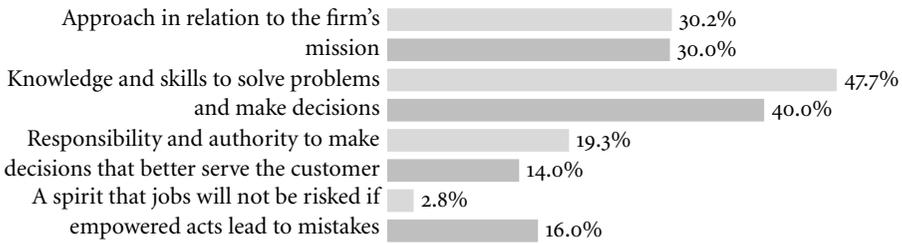


FIGURE 2 Conditions for active involvement of employees in the relation marketing concept (light gray – firms, dark gray – experts)

sible, and to refer to the results of the sub-process, related to data analysis and improvement.

2. Establish requirements that are not specified or expected, but which a customer can evaluate positively after use (if possible).

Identification of customers' requirements and expectations is a separate sub-process which can be part of another process, and because of that its definition and providing evidence (document) can be performed in the following ways:

- included in the procedure for identification of customer requirements and expectations,
- given in more detail in the Reference book of quality,
- forming part of another procedure, for example: making contracts, selling, communication with customers etc.
- methodology, presented as a separate document, that is being referred to in the evidence.

The appropriate methods and techniques for establishing customer requirements and expectations are (Hanic 1997):

- a) observation;
- b) interviewing customers:
 - personal interview,
 - postal interview,
 - e-mail interview,
 - anonymous interview on a larger sample with the presence of interviewers,
 - interview by telephone.
3. Reconsidering of requirements should include (when it is possible for the organization and customers) some kind of needs and expectation research, or evaluation of customer satisfaction, or it should refer to the sub-process results of data analysis and improvement.
4. Establishing and implementing effective solutions in communication with customers in relation to feedback information from customers, including their complaints. If it is harmonized with the organization's commitment and possibilities or external requirements, the process of making complaints should be defined and documented.

Design and development. Validation of results within a phase or the project should include acceptable research of needs and expectations or it should refer to the results of processes related to customers, as well as evaluation of customer requirements (when possible) or sub-processes of data analysis and improvement.

Purchasing. The relationship towards suppliers should be in harmony with the principles and criteria of business excellence, as well as with relevant input elements of the relationship marketing concept. In general, this partnership with suppliers means necessary cooperation, harmonized with mutual interests.

Production and service provision. It is necessary to provide:

- during performing activities (products and services realization),
- after realization or products delivery, and
- through post-delivery and servicing activities,

an acceptable research of needs and expectations, both for the organization and customers. If this is not possible then it should be referred to

the results related to customers. When possible, evaluation of customer satisfaction should be performed and, when not possible, it should be referred to the sub-process results of data analysis and improvement.

Comparable additional explanations and accompanying statistical indicators for the parts of the paper related to researching needs, product realization and measuring analyses and improvement data are given at the end of the next paragraph.

Measurement, analysis and improvement

Monitoring and measurement includes methods, techniques and activities which an organization should introduce in order to monitor and measure:

1. Customer satisfaction – information on customers' opinion about the degree to which their requirements have been fulfilled. Methods, techniques and activities appropriate for getting this information are (Hanic 1997):
 - a) observing;
 - b) interviewing customers by:
 - personal interview,
 - postal interview,
 - e-mail interview,
 - anonymous interview on a larger sample when the interviewer is present,
 - telephone interview,
 - c) solving complaints;
 - d) monitoring of proposals for improvement (products/services) suggested by customers;
 - e) solving complaints on products;
 - f) monitoring of products 'behavior' during usage (defects).

Improvement. The analysis of customer satisfaction should have the following consequences:

- corrective and/or preventive actions;
- planning the quality for the future;
- (re)definition of quality policy, objectives and tasks;
- training personnel;

TABLE 6 Comparative survey of acceptable ways of making documentation of processes: identification of expectations and monitoring, measuring and analyses

Offered answers	(1)	(2)	(3)	(4)
Given in more detail in the reference book (handbook) of quality	27 (29.7%)	16 (27.1%)	22 (23.2%)	13 (22%)
The procedure	46 (50.5%)	27 (45.8%)	54 (56.8%)	33 (55.9%)
The part of another procedure	12 (13.2%)	5 (8.5%)	12 (12.6%)	4 (6.8%)
Methodology as a separate document that is being referred to in the evidence	4 (4.4%)	11 (18.6%)	7 (7.7%)	9 (15.3%)

NOTES Process of identification of expectations: (1) firms, (2) experts; process of monitoring, measuring and analyses: (3) firms, (4) experts. Process of identification of expectations; Kruskal Wallis test – grouping variable: firms (companies), Chi-Square = 2.258, Asymp. Sig. = 0.323. Process of monitoring, measuring and analyses; Kruskal Wallis test – grouping variable: firms (companies), Chi-Square = 1.714, Asymp. Sig. = 0.424.

- ‘good practice’ – collective experience (it is equally related to all modules of the model).

The procedure of evaluating customer satisfaction is a separate process, but it can be part of another process too, so its definition and making evidence can be performed in the following ways by:

- introducing the procedure for monitoring, measurement and analysis of customer satisfaction,
- processing in more details in the Reference book (Handbook) of quality,
- forming part of another procedure, for example corrective or preventive actions, selling, solving complaints etc.,
- providing methodology, as a separate document that is being referred to in the document.

Having been asked to say if they had particularly defined the process for identification of the expectations and requirements of customers, the majority of the interviewed, 66 (79.5%) out of 83 (98.8%) from the companies gave positive answers. One part 14 (16.9%) of them connected this process to some process in the organization and only in 3 (3.6%) companies was this process not defined at all. A similar structure of answers given by the experts: 31 (83.8%) thought it was important to define this process, and 6 (16.2%) thought that this process could be joined to some

TABLE 7 Survey of phases in which research on needs and customers' satisfaction is/should be performed

Offered answers	(1)	(2)	(3)	(4)
Defining quality policy, objectives and tasks	5 (20.8%)	23 (18.7%)	18 (16.5%)	13 (11.7%)
Research on requirements and expectations	6 (25%)	17 (13.8%)	17 (15.6%)	30 (27%)
Defining resources for realisation of a product or service	1 (4.2%)	9 (7.3%)	15 (13.8%)	7 (6.3%)
During review of requirements related to the product	5 (20.8%)	18 (14.6%)	15 (13.8%)	12 (10.8%)
Through validation of results (within a phase or the project)	6 (25%)	14 (11.4%)	13 (11.9%)	11 (9.9%)
During performing activities (products and services realization)	—	20 (16.3%)	10 (9.2%)	10 (9%)
After realization or products delivery	—	17 (13.8%)	8 (7.3%)	6 (5.4%)
Through post-delivery and servicing activities	1 (4.2%)	5 (4.1%)	13 (11.9%)	18 (16.2%)

NOTES Research on needs and expectations: (1–3) firms, (4) experts. Kruskal Wallis test; grouping variable: firms (companies), Chi-Square = 14.645; Asymp. Sig. = 0.001.

other process, with a note that they insisted on the existence of this process.

The process of monitoring, measuring and analysis of customers' satisfaction is similar to the previous one: 69 (82.1%) of the interviewed in companies stated that this process already existed as specifically defined, 14 (16.7%) said that it was a part of some other process, and only 1 (1.2%) said that it didn't exist. The experts were, this time, specifically unique in thinking that this process had to be particularly defined, only 3 (8.1%) of the interviewed stated that it could be a part of some other process.

When the problem of making documentation of both processes is in question, we can see that the opinion of companies and experts was almost the same (table 6). For making documentation of the process – identification of expectations – we got answers from 81 (96.4%), and for making documentation of the process – monitoring, measuring and analysis – we got answers from 83 (98.8%) of the companies.

It is obvious that, in both processes, the experts gave advantage to methodology over integration – which is opposite to that of companies. This does not diminish the significance of the part (which is the biggest) in

TABLE 8 Survey of phases in which measuring of customers' satisfaction is/should be performed

Offered answers	(1)	(2)	(3)	(4)
Defining quality policy, objectives and tasks	2 (6.5%)	10 (10.8%)	11 (11.6%)	14 (11.9%)
Research on requirements and expectations	6 (19.4%)	9 (9.7%)	18 (18.9%)	20 (16.9%)
Defining resources for realisation of a product or service	—	8 (8.6%)	5 (5.3%)	7 (5.9%)
During review of requirements related to the product	5 (16.1%)	11 (11.8%)	10 (10.5%)	10 (8.5%)
Through validation of results (within a phase or the project)	9 (29%)	10 (10.8%)	6 (6.3%)	14 (11.9%)
During performing activities (products and services realization)	—	8 (8.6%)	14 (14.8%)	9 (7.6%)
After realization or product delivery	6 (19.4%)	27 (29%)	18 (18.9%)	21 (17.8%)
Through post-delivery and servicing activities	3 (9.7%)	10 (10.8%)	13 (13.7%)	23 (19.5%)

NOTES Measuring of satisfaction: (1–3) firms, (4) experts. Kruskal Wallis test; grouping variable: firms (companies), Chi-Square = 12.205, Asymp. Sig. = 0.002.

which there is an agreement in statements. The survey of the answers related to phases in which research of needs, expectations and measuring of customers' satisfaction is performed, or should be performed, is given in tables 7 and 8 respectively. A statistically significant difference in answers of different-type companies was noticed concerning the questions about the phases in which research on needs and expectations ($p = 0.001 < 0.05$) and measuring of satisfaction ($p = 0.002 < 0.05$) is performed, therefore the answers are given separately. The question concerning the process – identification of expectations – was answered by 83 (98.8%) of the interviewed, and the question concerning the process – monitoring, measuring and analysis – was answered by 80 (95.2%) of the companies.

Generally, it is the best to implement both the research of needs and expectations and measuring of satisfaction in all the mentioned phases, having in mind that the focus of the activities is moved from research on the needs and expectations towards measuring of satisfaction during the process, which goes from defining policy and objectives of quality to post-selling and service activities.

Methods and activities for research on attitudes are acceptable, in the opinion of companies and experts, and they should be applied in research on the needs and expectations and in measuring of satisfaction, as shown in the comparative survey (table 9).

Methods and activities that are of particular importance are those used in surveying customers, especially the personal interview and postal interview. The least attention is paid to monitoring of a product's life in usage.

The analysis of customers' satisfaction should influence the improvement of QMS and making business of a whole organization in general. This is a requirement of the standard, but also the practice of Serbian companies, as shown by is the research. The ways through which this is performed, or should be performed, were shown by 81 (96.4%) companies and 36 (97.3%) of the experts in their answers to the questions presented. It is encouraging that the 'system of award and punishment' has almost completely excluded in companies 5 (2.5%), while the experts have not considered this problem at all. Table 10 shows a comparative survey of companies and experts' opinions on this question.

With a certain difference, the companies and experts give advantage to corrective and/or preventive measures in planning quality in the future period, while they give the least attention to shared values. The purpose of the research (survey) was not so much to establish the reason for its application but to identify the ways – how 'the circle closes,' in other words, to establish the elements of feedback in the model, so we did not go into details.

Discussion

The basic function, as well as the elements and sub-processes of the cybernetic model, define the processes of needs and requirements identification and measuring customers' satisfaction in implementation of the model for providing satisfaction of customers' requirements and through realization of the sub-processes.

The structure of a theoretic model follows the bases of the ISO 9001:2000 standard, as well as recommendations concerning managing quality, costs and the process of solving customers' complaints. The elements, including criteria of business excellence (the EFQM as a reference model) and marketing requirements (the base for defining this was the effective relationship marketing concept) which are also integrated in the model, broaden and fulfil the model thus performing its basic function.

TABLE 9 Comparative survey of methods and activities for research on needs and expectations and measuring of customers' satisfaction

Offered methods and activities	(1)	(2)	(3)	(4)	(5)	(6)
Observing	25 (9,7%)	12 (13,2%)	13	2	13	5
Interviewing customers	75 (29,1%)	32 (35,2%)				
Personal interview	33 (24,8%)	18 (30%)	15	11	17	11
Postal interview	33 (24,8%)	8 (13,3%)	13	6	16	3
E-mail interview	31 (23,3%)	12 (20%)	11	8	16	6
Anonymous interview on a larger sample when interviewer is present	10 (7,5%)	11 (18,3%)	4	9	7	6
Telephone interview	16 (12%)	4 (6,7%)	7	2	7	2
Solving complaints					45 (17,4%)	10 (11%)
Monitoring of proposals for improvement (products/services) suggested by customers					32 (12,4%)	11 (12,1%)
Solving complaints on products					47 (18,2%)	11 (12,1%)
Monitoring of products' 'behavior' during usage (defects)					25 (9,7%)	8 (8,8%)

NOTES (1) firms, (2) experts; research on needs: (3) firms, (4) experts; measuring of satisfaction: (5) firms, (6) experts.

TABLE 10 Comparative survey of the ways in which the results of analysis should influence the improvement of QMS

Offered answers	Firms	Experts
Corrective and/or preventive actions	64 (31,8%)	20 (21,3%)
(Re)definition of quality policy, objectives and tasks	35 (17,4%)	19 (20,2%)
Planning quality for the future	48 (23,9%)	24 (25,5%)
Training personnel	33 (16,4%)	20 (21,3%)
'Good practice' – collective experience	16 (8%)	11 (11,7%)

NOTES Kruskal Wallis test; grouping variable: firms (companies), Chi-Square = 3,253, Asymp. Sig. = 0,197.

The theoretic model served as a base for further research on companies (productivity and services), which work and have their seats on the territory of Republic of Serbia – first of all their leaders, owners or employees who are in charge for the implementation of QMS, as a primary group, and experts from this sphere, as a control group in the research.

Generally, this research did not show directly that the model should be fulfilled by the integration of new elements and/or activities, but it noted that it should be reduced.

There is not a statistically significant difference in the answers obtained from the companies and the experts concerning the relevant modules, elements, sub-processes and functions of the model, although the opinions are to a great deal different when some indirect questions are analysed. There are, according to some questions, statistically significant differences in opinion of the different types of companies (concerning the size: micro, small, medium and big), but this was expected, taking into account the size of the research.

The research in companies, and among the experts directly showed the justifiability of the model, which is confirmed by the model's structure.

The work on the model showed certain imperfections:

- relatively weak response of experts and companies which could jeopardize the model and its significance concerning representative quality,
- limitation in the geographic sense – only the Republic of Serbia was included in the survey,
- apart from the statistical check, there was an absence of mathematic modeling, as had been previously anticipated.

Conclusions

The bases of successful management aimed at building a relationship with customers mean:

- involvement of executives and their commitment to the objectives of such organization management,
- successful measurement which is, in short term, based on quality management of services and, in long term, at obtaining a high degree of customers' satisfaction,
- guidelines for individual initiative which provide realization coordinated with the general objective and strategy aimed at building a relationship with customers.

The company's objective should be achieving and understanding the optimum level of customer satisfaction. The important step in achieving customer satisfaction is to conduct research on customers' requirements in order to make good business decisions.

The model for providing customer satisfaction, presented in this work, is harmonized according to its basic function and primary structure, with the requirements of the ISO 9001:2000 series of standards, as well as with relevant proposals and criteria of business excellence, marketing requirements and specific characteristics and requirements of Republic of Serbia economy.

Further work on the model would go in, at least, two directions:

- towards spreading the research to the countries in the region,
- towards factor analysis and creation of a mathematical model in order to check the elements and ties within the model.

References

- Berry, L. L. 1983. 'Relationship Marketing.' In *Emerging Perspectives of Services Marketing*, edited by L. L. Berry, G. L. Shostack, and G. D. Upham, 25–8. Chicago, IL: American Marketing Association.
- Brookes, R., and V. Little. 1997. 'The New Marketing Paradigma: What Does Customer Focus Now Mean?' *Marketing and Reserch Today* 25 (2): 96–105.
- Cockalo, D. 2008. A Model for Assuring Satisfaction of Customer's Requirements According to the ISO 9000 Series of Standards and the Needs of Serbian Republic Economy. PhD. diss, University of Novi Sad, Technical faculty 'Mihajlo Pupin.'
- Cockalo, D., and D. Djordjevic. 2006. 'Managing Key Flows in Company in Function of Achieving Business Excellence.' *Total Quality Management and Excellence* 34 (1–2): 97–101.
- . 2008. 'Business Strategy for Providing Satisfaction of Customer Requirements.' *International Journal Communications in Dependability and Quality Management* 11 (3): 59–67.
- Conca, F. J., J. Llopis, and J. J. Tari. 2004. 'Development of a Measure to Assess Quality Management in Certified Firms.' *European Journal of Operational Research* 156 (3): 683–97.
- Courage, C., K. and Baxter. 2005. *Understanding Your Users: A Practical Guide to User Requirements Methods, Tools and Techniques*. San Francisco, CA: Morgan Kaufmann.
- Dale, B. G. 1997. 'Characteristics of Organizations not Committed to Total Quality Management.' *Journal of Engineering Manufacture* 211 (5): 377–84.

- Dale, B. G., and L. Ritchie. 2000. 'An Analysis of Self-Assessment Practices Using the Business Excellence Model.' *Proceedings of the Institute of Mechanical Engineers* 214 (7): 593–602.
- EFQM. 2002. *EFQM – the Fundamental Concepts of Excellence*. Brussels: European Foundation of Quality.
- Evans, J., and R. Laskin. 1994. 'The Relationship Marketing Process: A Conceptualization and Application.' *Industrial Marketing Management* 23 (5): 439–52.
- Evans, S., and A. D. Burns. 2007. 'An Investigation of Customer Delight During Product Evaluation: Implications for the Development of Desirable Products.' *Journal of Engineering Manufacture* 221 (11): 1625–40.
- Garvin, D. A. 1988. *Managing Quality*. New York: The Free Press.
- Grönroos, C. 1994. 'From Marketing Mix to Relationship Marketing.' *Management Decision* 32 (2): 4–20
- Hanic, H. 1997. *Marketing Research*. Belgrade: Faculty of Economics.
- Hanna, V., C. J. Backhouse, and N. D. Burns. 2004. 'Linking Employee Behavior to External Customer Satisfaction Using Quality Function Deployment.' *Journal of Engineering Manufacture* 218 (9): 1167–77.
- Irani, Z., A. Baskese, and P. E. D. Love. 2004. 'Total Quality Management and Corporate Culture.' *Technovation* 24 (8): 643–50.
- ISO Central Secretariat. 2006. *The ISO Survey 2006*. Geneva: ISO Central Secretariat.
- Mohr-Jackson, I. 1998. 'Managing a Total Quality Orientation.' *Industrial Marketing Management* 27 (2): 109–25.
- Motwani, J. 2001. 'Critical Factors and Performance Measures of TQM.' *The TQM Magazine* 13 (4): 292–300.
- Preradovic, K. 2008. 'Instead of Education, We Will Import IT Experts.' *Novac*, December 6.
- Price, M., and E. E. Chen. 1993. 'TQM in a Small High-Technology Company.' *California Management Review* 35 (3): 96–117.
- Rusjan, B. 2005. 'Usefulness of the EFQM Excellence Model: Theoretical Explanation of Some Conceptual and Methodological Issues.' *Total Quality Management* 16 (3): 363–80.
- Saad, G., and S. Siha. 2000. 'Managing Quality: Critical Links and Contingency Model.' *International Journal of Operations and Production Management* 20 (10): 1146–63.
- Sajfert, Z., D. Đorđević, and C. Bešić. 2008. 'Quality Management-Prerequisite for Accomplishing Competitiveness of National Companies.' *Tehnika* 1:19–26.
- Saraph, J., G. Benson, and R. Schroeder. 1989. 'An Instrument for Measuring the Critical Factors of Quality Management.' *Decision Sciences* 20 (4): 810–29.

- Segars, A., V. Grover, and W. Kettinger. 1994. 'Strategic Users of Information Technology: A Longitudinal Analysis of Organizational Strategy and Performance.' *Journal of Strategic information Systems* 3 (4): 261–88.
- Tari, J. J. 2005. 'Components of Successful Total Quality Management.' *The TQM magazine* 17 (2): 182–94.
- Teo, W. F., and B. G. Dale. 2007. 'Self-Assessment: Methods, Management and Process.' *Journal of Engineering Manufacture* 211 (5): 365–75.
- Terziovski, M., and D. Samson. 1999. 'The Link Between Total Quality Management Practice and Organizational Performance.' *International Journal of Quality and Reliability Management* 16 (3): 226–37.
- Zeithaml, V. A., A. Parasuraman, and L. L. Berry. 1990. *Delivering Quality Service*. New York: The Free Press.