

# Customer Satisfaction Monitoring System in Higher Education

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## Abstract

The Bologna Process has stimulated the considerable reorientation process in educational sector. The current reorganisation of higher education is dictated to a great extent by the marketing management principles. This paper presents the concept of CSMS (Customer Satisfaction Monitoring System) in Higher Education that brings the Educational Institution into the line with current educational policy. The CSMS concept is a part of an integrative theoretical approach to the quantitative analysis of educational services for innovative marketing. The problem of continual analysis of customers' perception of educational services is addressed. The paper presents some components of CSMS (concept, structure, methodology), proves its necessity.

## Keywords

Educational Marketing, Customer satisfaction, Perceived Value

## 1. Introduction

The Higher Education Sector has being reconceptualised along business lines (Love, 2008). Modernisation of education today is built on the application of TQM (Total Quality Management) principles in Higher Education (UK HE European Unit, 2006). It should be noted the increasing importance of the connections between the Higher Education sector and business model, what significantly influence the logic of education sector evolution today (UK HE European Unit, 2006). One of the base principles of TQM that is of crucial importance in the context of research is that the customer defines quality standards (Sallis, 1996). This principle stays in the close connection with the primary goals of service marketers in general, and marketers in Higher Education Sector in particular: namely, to maximize consumers' perceptions of the service encounter and to build the firm-consumer relationships (Hamer, 2006).

The implementation of applied mathematical methods that have been successfully and widely used in applied sciences, should help to increase the efficiency of analysis in the marketing management field in an Educational Institution. The problem of quantitative estimation of the educational service's perceived value is addressed (Shauchenka *et al.*, 2008). This problems area meets the requirements and expectations of the recent ISO 9001:2000 standards introduced in Higher Education

by Bologna Process (UK HE European Unit, 2006), TQM principles and educational marketing's trends (Sallis, 1996; Shauchenka *et al.*, 2008; Kotler, 1995). To be more precise, in this research formal mathematical approaches for educational marketing will be utilized, enabling software tools to be designed and developed to simplify the decision making procedure for marketing departments of higher education institutions. The efforts of the current step of research are focused on a development of parameter structure describing the educational services and further questionnaire design. It is the first step to establish a mathematical connection between the mental structures defining the perceived value of educational services and instrumental tools supporting the decision making process (Shauchenka *et al.*, 2008).

The paper is organized as follows: the next section gives a short overview of recent approaches to quality management systems in educational institutions assumed by the Bologna process. Some important in the context of this research marketing principles are also presented. The second section ends with the conceptual description of CSMS and marketing objectives. The third section is dedicated to terminology and restricts the most essential terms in this paper, and namely, perceived value and satisfaction. It is not just discussing some theoretical points, but also gives the graphical Model of Perceived Value of Educational Institution Services. The conceptual structure of CSMS is presented along with the schematic definition of educational services in section 4. Finally, the results of the paper are summarized and directions of further research are discussed.

## **2. CSMS in a Quality System of Educational Institution**

### **2.1. Requirements of new quality standards**

The bringing in the education sector the principles of ISO 9001-2000, made by Bologna Declaration, have a crucial impact on the educational sector (Azaryeva, 2006). The evoked changes continuous until now and the process of reorientation of educational sector along new standards seem to be quite long and not easy. The quality model in ISO 9001:2000 is quite different compared with 9001-1994. It is now based upon a Process Model that any Higher Educational Institution can use (ISO, 2000). The process approach assumes the implementation of the model of continuous improvement, called PDCA (plan, do, check and act) cycle. The cycle has no end and four stages repeat again and again (ISO, 2000). Continual improvement is not only the core theme of the ISO Standards revision, but also a core value of Deming and TQM approach (Sallis, 1996). The new quality standards also refer to the customer perceptions of performance (ISO, 2000). The establishment of QMS (Quality Management System), where customers' needs, expectation and perception become the explicit drivers, is required. "Customer's Requirements" drives the input and "Customer's Satisfaction" the output of the whole model. Acceptance of this model requires the development of procedures and instruments for the measurement and analysis of customers' perceptions and attitudes. Hence, in the context of the typical quality system model in Higher Education, the logic of development and implementation of quality system could be represented as follows (LETI, 2006; ISO,2000): customer's voice → customers requirements → quality policy of Educational Institution → objectives of quality policy (with the set of indexes)

strategy for the goals achievement → enhancement of indexes with the help of quality system.

## **2.2 Marketing Context**

The research occurs in the marketing management context. In this paper educational marketing is understood as a process of definition of stakeholders' expectations and requirements to the services provided by Educational Institution and further demand creation. Under the stakeholders from outside are understood: state and society in general; school graduates and theirs' families; firms (partners of University and employers). Under stakeholders' from inside: students; all categories of staff and representatives of all functional departments. The main tasks of marketing department in Educational Institution includes following activities: investigation and classification of requirements of different stakeholders' and customers' groups; interaction and communication with the stakeholders and customers; estimation and analysis of satisfaction of all interested parties (loyalty, perceived value, future intention); demand creation, providence of public information; image creation; positioning in the market; development of requirements to the educational services based on customer's needs and expectations. It should be noted that the needs and requirements of educational marketing influence all further research and restrict the implementation area of offered solution.

## **2.3. The Concept of CSMS**

Taking in to account all previously mentioned reasons and the logic of educational sector's evolution, the shape of the offered solution can be defined as the constant tracking of factors defining customers perceived value of educational services in a form of customer satisfaction monitoring system (CSMS). CSMS is understood not only as a constant factor tracking, but also results in a comparison with requirements and expectations. CSMS deals with revealing of tendencies, unknown dependencies and customer's moods and finally constituted the base for decision making process. This system is intended to support activities of the Marketing Manager, but also can be useful for teaching and administrative staff of all levels. It provides an essential, logical complete part of Quality Management System of Educational Institution and meets the requirements of Process Approach introduced by new ISO standards. The CSMS is constituted by following elements: the concept, the structure and the methodology. The concept of CSMS includes five elements. The first one is functions: the concept of monitoring is considered as wider category including in addition to control also the functions of analytics, diagnostics, prognosis, educational service's correction. The second element of CSMS is the objects: the main from the mentioned above stakeholders groups from the area of the interests of educational marketing (different categories of students, employers, staff members); the third element is the subject: marketer/marketing department of Educational Institution. The next elements, namely: requirements and procedure need more detailed explanation. Thus, requirements to the system are understood as the set of conditions that enable the system's effectiveness. The most important are:

- system openness: the results of monitoring should be open for all staff members, who can use this results for their activities;
- availability – the results should be presented in a form that is easy to understand and to use for all interested parties;
- system efficiency: the system should include the methods and technologies that can minimize the time, labour and costs expenses;
- system approach: by the monitoring the customer's satisfaction it should be analysed the possible maximum of factors;
- operative character: both technical and managerial, not only the information analysis should be made operative, but also the managerial decisions.

As emphasized in the introduction, the structure of the complex approach to the estimation of customer's perceived value of the educational services should have both quantitative and qualitative dimensions. Only in this case can the balance between grounded theoretical base and opportunities given by empirical investigation be achieved. This dualism is also reflected in the system's procedure that includes following steps:

- systematisation of the main factors influencing on the quality of educational service (McDougall and Levesque, 2000);
- coordination of the factors with the particular customer's groups; the development of methods and techniques that enables the estimation of customer's satisfaction (Shauchenka *et. al.*, 2008);
- analysis of customer's satisfaction; the input data for the analysis is the customer's feedback, the output – the enhancement of educational quality.

The last element of the CSMS, the methodology, is not the focus of this paper.

### **3. Customer satisfaction vs. Perceived Value**

Before the further discussion about the problems of quantitative estimation of perceived value of educational services in the context of the customer satisfaction monitoring system, the conceptual basis of the terms customers' satisfaction and customers' perceived value should be highlighted. In fact, there are a lot of relative terms and theories regarding customer's attitude. It's a customer's attitude itself, affective/kanzei value, perceived value, perceived quality, customer's perception, customer's loyalty, future intention, customer satisfaction and some others (Kotler, 1995; Athiyaman, 1997; Russel, 2005; Zhang and Wang, 2006). In spite of many publications on these themes little work has been done to clarify the interdependencies, causal ordering and conceptual basis of these related constructs. Literature shows conflicting theories, different interpretations and definitions can even exclude each other. For instance, according Athiyaman, the attitude (or perceived value) and consumer satisfaction has a following functional relationship (Athiyaman, 1997): Consumer Satisfaction = f1 (attribution, emotion, disconfirmation); Attitude = f2 (Consumer Satisfaction). McDougall and Levesque, in opposite, cemented the conclusion that consumer satisfaction = f(perceived value) when they propose the scheme of three drivers of customer satisfaction, and namely, the perceived value, the relational quality and the core quality (McDougall and

Levesque, 2000). Zhang and Wang deal with the alternative approach that offers the contextual variable when discussing the relationship between the affect, perceived service quality and satisfaction (Zhang and Wang, 2006). But the distinction of hedonic versus utilitarian services does not work in a case of higher education. Educational Services itself is a unique phenomenon, that can evoke both cognitive and affective response in customers (Liljander and Strandvick, 1996). It's impossible to consider it as a pure hedonic or utilitarian service. The combined approach that includes the elements of both variables should be developed to reflex the complexity of the phenomenon of educational services perceived value. Together with the classical factors set that reflect customers' satisfaction (what relates to utilitarian nature of education), the CSMS should include methods that allow analysis of the affective element of perceived value. The latter should help to better understand the hedonic nature of education. The dualism of this approach incorporates in a structure of CSMS and its content. It may be also assumed from the literature, that the concept of customers' satisfaction is often understood as a transaction-specific, short-term customers' attitude (Athiyaman, 1997). Talking about perceived value it should be admitted, that it is understood in this research as not the actual, real value or quality, but the mental structure which locates in a customer's mind and causes the purchase decision-making process concerning educational service (Shauchenka *et.al*, 2008). Perceived value is the consequence of satisfaction. But it seems to be wrong to restrict the attitude to the Education Institution only by satisfaction. In a case of higher education, customers experience emotions towards the services not only when consuming the service. Services of the Higher Educational Institution can be experienced both before the enrolment and long after the studying period. Based on the scheme offered by Athiyaman, the logical chain describing the of Perceived Value Model consist of the following parts: customers needs, expectations and moods, Perceived Value of Educational Institution Services, enrolment, disconfirmation, (dis)satisfaction, revised Perceived Value, post-enrolment/employment, disconfirmation, revised Perceived Value, behavioural intentions. This logical scheme offers the causal connection between perceived value and satisfaction, assumed in this research. But the perceived value of educational services is a variable that also depends on marketing activity of Educational Institution. To illustrate this dependency and to show the critical importance of perceived value, the model illustrated in Figure 1, built according to the expectancy-disconfirmation paradigm, could be presented.

Three dimensions of perceived value (PV1, PV2, PV3) constitutes general customers' attitude to the Educational Institution. Exactly this general attitude is, in fact, the main object of educational marketing activities, because exactly this attitude affects all decisions making by customers concerning the relationships with Educational Institution. For the marketing purposes all dimensions of perceived value have a great importance and should be included in the analysis. Hence, perceived value results not only from core quality, but also from factors that are not direct related with core quality of educational services. The wider range of criteria, influencing the perceived value of educational services, is included in the structure of CSMS, presented in the next paragraph. The factors, defining the core quality of Educational Services presented more detailed in the separate table (table 2).

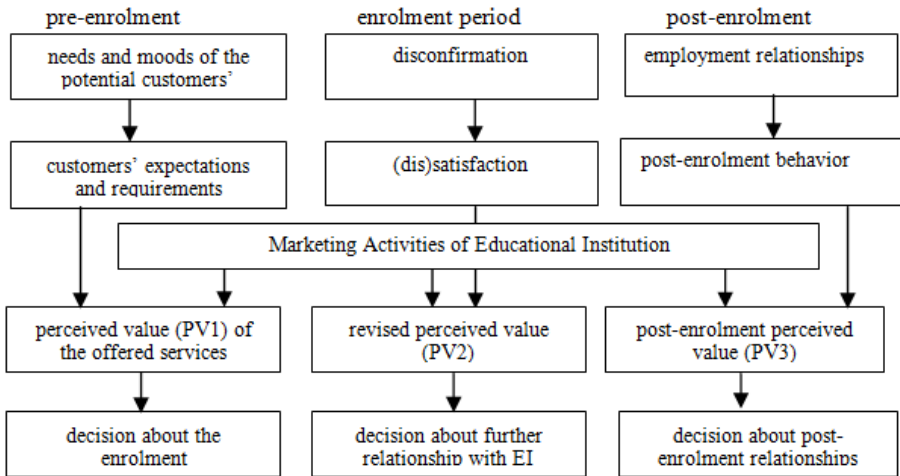


Figure 1: The Model of Perceived Value of Educational Institution Services

#### 4. Structure and Content of CSMS

According to Athiyaman, perceived quality is explained in terms of satisfaction with a manageable set of universities characteristics. Both services and service characteristics are (Athiyaman, 1997): emphasis on teaching students well; availability of staff for students consultations; library services; computing facilities; recreational facilities; class sizes; level and difficulty of subject content; student workload. These characteristics are used to obtain the measurement of pre-consumption attitude and disconfirmation. This measurement exactly reflects the perceived quality of educational services. Athiyaman notes, however, that it is an easy approach and deals for stimulating further research in educational services quality dimensions.

Basic ideas of the Athiyamans approach are implemented in this research, but the approach, presented in this paper, offers wider explanation of student's attitudes towards the educational services. Instead of eight characteristics, the structured set of criteria and indicators is offered. Perceived value experienced in service (pre/post)consumption can also have a non-quality dimension. As mentioned above, the phenomenon of educational services have a dual nature: it is both utilitarian and hedonic services. To analyze the perceived value, not only directly related with core quality characteristics should be taken into account. Some intangible characteristics; for example, an emotional spirit, created by the teacher, or the successful image offered by marketer, can hugely increase the grade of perceived value of educational services. This specificity is also reflected in the offered structure. The marketing context of research requires the analysis of all important for marketer stakeholders groups: students, graduates, staff members and employers. The interaction of these groups and theirs attitudes toward the educational services (or perceived value) defines the position of Educational Institution in the market. These stakeholder groups are the object of CSMS, what was mentioned in a concept, and incorporates

in the structure. The most important, so-called, end-customers are, of course, students (Kotler, 1995). This is not a homogenous group, in this structure the segmentation depending on consumption stage is implemented: 1 year student, student, graduate, former graduate. As the next step, parameters could be cross-tabulated also with demographic, lucrative or others variables, such as gender or purchasing capacity, to understand differences of perceptions, if any, among different students segments and make the most interesting offer for the segment, that was chosen as a strategic most important. The schematic structure of CSMS has a following shape:

Object of research	Research objectives	Criteria and indicators of estimation
1 year students	to define the students' requirements and expectations; to estimate the university image	motives for higher education receiving
		motives for speciality and university choice
		expectations and priorities
		proposals concerning universities image and offered public information
2-5 year students (system dependent)	to estimate the satisfaction by quality of educational services	change of students opinions concerning the chosen speciality/university
		quality of the educational services offered by university: <ul style="list-style-type: none"> <li>• conditions quality;</li> <li>• quality of educational process;</li> <li>• quality of results of educational process</li> </ul>
		proposals concerning educational services
	to estimate the satisfaction by pedagogical activity of teaching staff	quality of pedagogical activity: <ul style="list-style-type: none"> <li>• quality of information presentation</li> <li>• motivation</li> <li>• creation of an emotional spirit</li> <li>• regulation of students activity</li> <li>• openness for cooperation</li> </ul>
		quality of chairs work: <ul style="list-style-type: none"> <li>• theoretical and practical level of course design</li> <li>• organization of individual work</li> <li>• offered practice possibilities</li> <li>• duration and quality of consultation</li> <li>• teachers attitude to the work</li> <li>• teachers attitude to students</li> </ul>
		strengths and weaknesses of chair activity
graduates	to estimate the satisfaction by quality of educational services;	disciplines/subjects, interested to study in addition
		quality of the educational services offered by university: <ul style="list-style-type: none"> <li>• conditions quality</li> <li>• quality of educational process</li> <li>• quality of results of educational process</li> </ul>
	to estimate the compliance of education with market requirements	satisfaction by educational institution and chosen speciality
		universities strengths and weaknesses, own estimation of career and employment perspectives
former graduates		quality of the educational services offered by university: <ul style="list-style-type: none"> <li>• program compliance with expectations</li> <li>• theoretical and practical level of teaching</li> <li>• preparedness to professional work</li> </ul>
		professional activity after the university
		compliance of education level with current position image of university universities strengths and weaknesses proposals for improvement

teaching staff	to estimate the satisfaction by work at university	satisfaction by: <ul style="list-style-type: none"> <li>• work of department</li> <li>• motivation system</li> <li>• psychological climate</li> </ul> knowledge about universities strategy, mission, activity of administration, dean's office, etc.
		quality of working conditions
		quality of offered educational services
		strengths and weaknesses of university expectations and worries about the work proposals on improvement of university's activity
staff	to estimate the perceived quality of offered services	satisfaction by: <ul style="list-style-type: none"> <li>• work of department</li> <li>• motivation system</li> <li>• psychological climate</li> </ul> knowledge about universities strategy, mission, activity of administration, dean's office, etc.
		quality of working conditions
		strengths and weaknesses of university
		proposals on improvement of university's activity
employers	to estimate the perceived quality of professionals preparedness;	quality of graduates' preparedness: <ul style="list-style-type: none"> <li>• compliance of preparedness with market requirements</li> <li>• compliance of notes with knowledge and abilities of graduates</li> </ul>
	to define the professional competence of graduates	kinds of professional abilities that should be provided; personal qualities of the professionals of the given speciality/sphere

**Table 1: Structure and content of CSMS**

The structure and methodology are defined. Some of the columns was, however, not yet included in the structure. For example, it is planned a column that further will define the type of questionnaire, designed especially for concrete group of stakeholders. Another one should define the type of output (or the type of questions): open question, closed or half-closed. For example, for the group "2-5 years students" to investigate the perception of core quality of educational services the most complicated questionnaire will be designed: scaled questionnaire based on theory of personal constructs psychology, offered by Kelly in 50s, in background and with closed questions (Shauchenka *et. al.*, 2008). Especially in this element the dual nature of educational services should be reflected. It is one of the most important elements of CSMS and requires complicated methods and instruments. In opposite, the question to the employer about the kinds of professional abilities that should be provided by graduates in addition to the diploma is a simple example of the open question that does not require any instruments, just the short answer with own words. The answer will be used as an additional information source by, for example, program updating. The data should be obtained by web-based survey at different time periods. The CSMS should function continual, only in this case the obtained information can be used for further correction of educational services, program updating, informal rating of chairs, segment analysis and other activities. The periodicity and sampling need the strong definition. Data analysis and interpretations techniques complete the research and represent the most complicated and massive part of it. It's the last stage of research, some ideas and proposals concerning this



part can be found in the concept paper “Quantitative analysis of educational services for innovative marketing in higher education”(Shauchenka *et. al.*, 2008). Some aspects of the quantitative estimation of the educational services will be also presented in the last paragraph of this paper. It should be also emphasized that the existence of measurable metrics and quantitative estimation techniques in a quality system meets the requirements of the new standards in Education what was mentioned above.

It should be also noted that criteria and indicators of estimation are not the questionnaire itself they just shape the further questionnaire giving the sense and orientation. To illustrate this point more proper definition of educational services could be presented, the further questionnaire will be designed based exactly on this definition and using some techniques from psychology. This educational service presentation is based on a classical three-dimensional scheme assumed from the marketing literature (Kotler, 1995). This three dimensions namely conditions, process and result, construct the service and define it in the same way as the physical implementation defines the product.

Quality of educational services	1 year	Students	Graduates
1. Conditions			
1.1. material resources	6,7	6,3	6,5
1.2. technical equipment	7,0	6,5	6,5
1.3. teaching staff	6,5	7,0	7,5
1.4. methodical materials	6,3	6,5	6,5
1.5. information materials	5,5	5,3	5,0
1.6. additional services	5,0	5,0	5,5
1.7. program design	7,5	7,0	6,5
1.8. sport facilities	8,0	8,0	7,5
2. Process			
2.1. cooperation and dialog with teaching staff	8,0	7,5	7,4
2.2. students science and research activity	6,0	7,0	7,3
2.3. students practical activity	7,5	6,5	7,0
2.4. studies organization (lecture, in labor, seminars, individual, project, ...)	7,6	7,7	7,7
2.5. organization of students educational activity	7,8	7,9	7,5
2.6. used technologies (information, pedagogical, innovation)	7,5	6,8	7,0
2.7. assessment	7,5	7,0	7,0
3. Results			
3.1. Level of received theoretical knowledge	7,0	7,0	7,3
3.2. Level of received practical experience	7,0	6,8	6,7
3.3. Received skills and abilities	7,0	7,2	7,5
3.4. Program compliance with students' expectations and priorities	8,0	7,0	6,6
3.5. Program compliance with market	8,0	7,0	6,0

**Table 2: Factors defining the core quality of Educational Services**

The perceived value of educational services will be estimated as a cumulative value, that includes three dimensions, and, namely the perceived value resulting not only

from consumption period, but also from pre- and post-consumption. In the example, the columns in the table are filled with presumable marks received from students (based on the 10 points scale).

## **5. Conclusion**

The most significant differences in ISO 9001-2000 are the requirements related to customer satisfaction, measurable objectives and demonstrated management commitment what incorporates in the requirement to establish a quality management system. At the same time Educational Institutions adopt the principles from the business ideal, TQM approach and marketing paradigm. Educational Institutions need new approaches to incorporate new principles in a daily activity. These approaches should, however, take into account the unique and complex nature of the education phenomenon. Offered paper logically continues the development of integrative approach to the quantitative estimation of educational services in the context of innovative educational marketing. This step offers the conceptual description of CSMS that represent the shape of developed solution and also gives the directions for further research. The dual nature of the education is reflected in this concept on different levels. As the next step should be noted the questionnaire design based on implementation of the principles of personal construct psychology for the concrete stakeholders groups. The data collected with the help of developed questionnaires will be later mathematically treated and presented in a easy for the end-user form. It should be also emphasized that it a work in progress and some deviation from the general line are possible.

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