

SERVICE QUALITY: A CRITICAL REVIEW OF SERVICE QUALITY MODELS

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Abstract

Service quality is a particularly important factor for companies since it is strongly connected with customer satisfaction, and strongly influences competitive advantage. Therefore, the measurement of quality and customer satisfaction are important factors in the success of a company. In recent decades companies have begun to understand the importance of quality and customer satisfaction, and consider their measurement as the most reliable system of feedback since, in this way they derive all the information necessary for the assessment of their performance. For this reason, companies are increasingly orientating themselves in this direction.

In this article, there is an analysis of more than twenty models of service quality, which have at some time been suggested by researchers, and in their most essential elements, cover a spectrum from conventional services to internet services, including organizational and behavioural aspects. The main goal is the assessment of these service models, offering a practical aid to prospective researchers and professionals. In this way, there is a basis on which to expand knowledge and use in everyday practice. In conclusion, research is conducted using the Servqual model, showing how this model functions in analyzing service quality.

Περίληψη

Η ποιότητα των υπηρεσιών έχει ιδιαίτερη σημασία για τις επιχειρήσεις καθώς συνδέεται άρρηκτα με την ικανοποίηση του πελάτη. Πρόκειται για ένα σημαντικό παράγοντα από τον οποίο προκύπτει βασικό ανταγωνιστικό πλεονέκτημα. Επομένως η μέτρηση της ποιότητας και της ικανοποίησης των πελατών αποτελούν βασικούς παράγοντες που καθορίζουν την επιτυχή πορεία μίας επιχείρησης. Τις τελευταίες δεκαετίες οι επιχειρήσεις έχοντας κατανοήσει τη σπουδαιότητα της ποιότητας και της ικανοποίησης των πελατών, θεωρούν τη μέτρησή τους ως το πλέον αξιόπιστο σύστημα ανάδρασης καθώς με τον τρόπο αυτό αντλούν όλη την απαραίτητη πληροφόρηση που έχουν ανάγκη για την αξιολόγηση της απόδοσης και της λειτουργίας τους. Για το λόγο αυτό κινούνται όλο και περισσότερο προς την κατεύθυνση αυτή.

Στο άρθρο αυτό γίνεται μια κριτική αναφορά σε περισσότερα από είκοσι μοντέλα ποιότητας υπηρεσιών που κατά καιρούς έχουν προταθεί από ερευνητές και στα βασικότερα στοιχεία αυτών. καλύπτοντας ένα φάσμα μεταξύ συμβατικών εξατομικευμένων υπηρεσιών και υπηρεσιών διαδικτύου, ενώ συμπεριλαμβάνονται τόσο οργανωσιακές όσο και συμπεριφορικές (behavioural) πτυχές. Ο κύριος στόχος του είναι να αξιολογηθούν αυστηρά αυτά τα μοντέλα υπηρεσιών προσφέροντας έτσι μια πρακτική βοήθεια στους μελλοντικούς ερευνητές και επαγγελματίες αυτής της κατεύθυνσης, αφού έτσι τους δίνεται μια βάση πάνω στην οποία θα μπορούν να στηριχτούν είτε για να επεκτείνουν την γνώση είτε για να την χρησιμοποιήσουν στην καθημερινή πρακτική, αντίστοιχα. Τέλος πραγματοποιείται μία ερευνητική εφαρμογή του μοντέλου Servqual, δείχνοντας με τον τρόπο αυτό τη λειτουργία του για την μέτρηση και ανάλυση της ποιότητας υπηρεσιών.

Keywords: *quality, satisfaction, customer, model*

1. Introduction

The competition between enterprises is increasingly intensifying as strict limits begin to disappear whilst customer requirements for quality, fast correspondence, etc, are increased. These factors, in combination with the excessive supply of goods and services, lead enterprises to search for ways that will allow them to survive in the modern business environment. Their objective is to provide the best possible customer service and satisfy customers' needs and expectations. In this framework, the measurement of quality and customer satisfaction constitute basic factors that determine the successful course of enterprises.

Through research on how customers conceive the quality of product or services, an enterprise is in the position of knowing its customers' opinions and determining the degree to which it can satisfy their needs and expectations. Using the measurement of these factors, any changes in the customers' needs become immediately apparent to the enterprise, allowing it to adapt the level of service to these changes. Knowing the requirements of its customers and by insuring the satisfaction of these, the enterprise manages to survive in the face of competition, not only in the present but also in the future, since it is in a position to ascertain

the critical elements of quality that require improvement and to seek methods with which to achieve this improvement.

2. Measurement of service quality

The question of measurement of service quality has always been of great importance. For this reason, researchers have sought methods for the definition, the modelling and the measurement of quality, and various models have been developed, many of which result from each other. The various models proposed by researchers are described below:

Model 1. Technical and Functional quality model (Grönroos, 1984)

The Grönroos model supports that quality depends on two variables - the conception and expectation of quality of service - and that the enterprise should achieve the matching of these two in order for customer satisfaction to be achieved. Specifically, quality of service is comprised of the following three elements: technical quality, functional quality and the image of the enterprise. Technical quality is the quality that the customer receives through his contact with the enterprise which provides the service and can be measured objectively, such as for example the technical dimensions of the product. While technical quality applies to what the customer receives, functional quality applies to how he receives it. Finally a third dimension of quality is the enterprises' image, that is to say, the image of an office or a company which significantly influences customers' expectations.

Model 2. GAP model-Servqual (Parasuraman et al., 1985)

This is one of the best-known models of measurement of quality of service. The quality of service here is measured by the difference between the expectations of consumers and what they actually receive. If the quality of what customers receive is lower than their expectations, then they consider the quality to be low. On the contrary if what they receive is higher than their expectations, then they consider the quality to be high. The Servqual model uses these two components - output and expectations - in order to calculate the gap that exists between them. Specifically, there are five gaps which explain why enterprises are unable to offer qualitative services according to the models of quality that the customers expect.

Model 3. Attribute service quality model (Haywood-Farmer, 1988)

The Haywood-Farmer model supports that an enterprise provides service of high quality when it satisfies on time the preferences and expectations of customers and for this reason enterprises need to discover what customers expect from service. Generally, in the Haywood-Farmer model, services have attributes that can be categorized into the following three groups: 1) physical facilities and processes, 2) employees' behaviour and 3) professional criticism. The first group includes characteristics that have to do with natural installations whilst in the second are characteristics such as oral or non-oral communication, politeness and friendliness. Finally, professional criticism is related to competitiveness, guidance, innovation, flexibility, knowledge, discretion and to all those elements that confer professionalism on the enterprise. The selection of elements from each group constitutes an important strategic decision on behalf of the enterprise in order to achieve the appropriate balance.

Model 4. Synthesised model of service quality (Brogowicz et al, 1990)

The model of Brogowicz et al supports that customers determine the quality of service by comparing their expectations with their perception of service received. Customer satisfaction is achieved when the perception of the service corresponds to expectations. Specifically, the expectations of customers are determined by various factors, which are categorized in three groups: exterior influences, traditional marketing activities and the enterprises' image. Included in the exterior influences factors are elements such as culture, social structure, WOM, media exposure, competition and the personal needs and previous experiences of each individual. Traditional marketing activities, such as publicity, public relations, sales promotion and pricing also influence expectations and usually promise to the customers better quality than what is actually provided, thus creating a gap. Finally, traditional marketing activities interact with the various exterior influences and define the image of the enterprise which later influences expectations. The enterprise should determine first of all its mission and its objectives and subsequently materialise its strategy by applying certain service specifications and by selecting suitable marketing activities.

Model 5. Performance only model (Cronin and Taylor, 1992)

The model also known as ServPerf supports that output should be used in order to measure quality of service, in contradiction to the Servqual model which takes into consideration output as well as the expectations of customers. The model investigates the relationship between the quality of service, customer satisfaction and purchase intentions. Specifically, it supports that this output determines the quality of service rather than output-expectation as proposed by ServQual and considers that quality of service is a condition for customer satisfaction which has a significant affect on purchase intentions

Model 6. Ideal value model of service quality (Mattsson, 1992)

Mattsson supported that factors such as ideals and experience shape the value received by the customer, which has a direct relation to his satisfaction. In the majority of studies on the quality of services, expectation is defined as the conviction for desirable attributes. Nevertheless, this question is further examined by Mattsson taking into consideration factors such as experience, the ideal, the minimal desirable and tolerable level. This model proposes the use of perceptible ideals which are compared with experience. The comparison with the ideal determines to a great degree customer satisfaction. For this reason, more attention should be given to the processes through which customers' perceptions of service are shaped and altered.

Model 7. Evaluated performance and normed quality model (Teas, 1993)

Teas criticised the Servqual model by claiming that it had certain theoretical, conceptual and functional weaknesses, such as the fact that the conceptual determination is ambiguous, it has theoretical documentation of expectations and connection between the quality of service and the satisfaction of customer, etc. Thus the following model is proposed, according to which the appreciated output results from the following relation:

$$Q_i = -1 \left[\sum_{j=1}^m w_j \sum P_{ij} |A_{jk} - I_j| \right]$$

Q_i is the conceived quality of the object i

W_j is the importance of attribute j that determines the conceived quality.

P_{ij} is the probability that the object i has quantity k of the attribute j

A_{jk} is quantity of k of the attribute j that exists in object i

I_j is the ideal quantity of attribute j

m is the number of attributes.

The model supports that individual perception of the quality of attribution of object i is positively connected with the weighted probability that the attribution of object i in the m dimensions is close to the perceptions of each one for the most optimal output for the m dimensions. Thus the model considers that the conceived quality of object i can be increased by decreasing the gap between the attribution of object and the ideal perceptions about it for one or more m attributes.

Model 8. Model of perceived quality and satisfaction (Spreng and Mackoy, 1996)

This model examines the relation, and apparent connection, between conceived quality and customer satisfaction. However, according to Spreng and Mackoy, certain conflict exists between them since an enterprise should know if its objective is to have satisfied customers or to maximize the perceived quality of service. This model focuses on the effect which expectations have on the quality of services and on customer satisfaction, as well as on wishes and conformation to them. It supports that the dissatisfaction of customers' expectations indirectly effects the quality of service since satisfaction is decreased and so the quality of service.

Model 9. PCP attribute model (Philip and Hazlett, 1997)

The model of Philip and Hazlett takes the form of a hierarchical structure based on three categories of attributes which compose the quality of services: the basic, central and regional. The basic attributes are considered to have an important influence on the decision of the consumer to prefer a certain enterprise, as well as on his level of satisfaction. The central attributes include people, procedure and the enterprise structure through which the consumers receive the basic attributes. The regional attributes can be defined as supplements which complete the service and make it an enjoyable experience for the consumer. When a customer uses a service for the first time, if the service ensures the basic attributes to a certain extent and the others to a smaller extent, the customer remains satisfied. As long as the customer uses the service more often, central and regional attributes begin to acquire particular importance.

Model 10. Internal service quality model (Frost and Kumar, 2000)

The model of Frost and Kumar is based on the model of Parasuraman et al (1985), the difference being that it evaluates dimensions and relations which determine the quality of services between the internal customers and the internal suppliers of an enterprise supporting services. The first line personnel are characterized as internal customers who serve the customers while the support personnel are characterized as internal suppliers who serve the first line personnel. Specifically, three gaps are found: the first gap presents the difference between the perception of support personnel (internal supplier) about the expectations of first line personnel (internal customers) and their real expectations. The second internal gap results from the difference between the specifications of quality of service and the service itself which has as a result a gap in output of service. Finally, the third internal gap results from the comparison of expectations of first line personnel with the service received.

Model 11. The interactivity model (Svensson, 2003)

The quality of service depends on the enterprise that provides the service but also on the customer. For this reason it is essential that a model takes into consideration the expectations and perceptions of the supplier and also of the customer. According to Svensson, the achievement of quality in service is determined by the interaction between the enterprise that provides the service and the customer, and specifically is made up of the following four elements: the expectations and perceptions of the supplier and the expectations and perceptions of the customer. As a consequence these elements comprise the four gaps 1) the gap between the expectations and the perceptions of the supplier; 2) the gap between the expectations and the perceptions of the customer; 3) the gap between expectations of supplier and expectation of customer; and 4) the gap between the perception of the supplier and of the customer.

Model 12. The importance - satisfaction model (Yang, 2003)

The objective of this model is to determine precisely the requirements of customers and the real level of their satisfaction and in this way to find out which attributes require improvement. This model represents in the horizontal dimension the level of importance of a certain attribute of service while in the vertical dimension the level of satisfaction of this particular attribute. Thus the following four areas exist: The most excellent area presents the attributes of quality that the customers consider important and where the output is also satisfactory. The to-be-improved area includes attributes that are considered important by the customers but currently the output does not satisfy the expectations of customers and for this reason the output requires improvement. The surplus area includes attributes what are not considered important by the customers but the output of the enterprise in relation to them is satisfactory. If an enterprise needs to decrease its costs, it can make certain reductions in this area without harming the quality of its service. The care-free area includes attributes for which the customers has a low level of satisfaction but which they do not consider very important. So the enterprise does not need to worry about these attributes since they have little influence on the quality the customers conceive.

Model 13. A general systems approach to services (Johnson et al, 1995)

The theory of this system explains how an enterprise acquires input and through the productive process converts this into products. This theory finds also application in services, and in the measurement of quality of services. Because of the unique characteristics of services, customers are influenced not only by the result of service but also by the input and the service process. For this reason the measurement of total quality of service should consist of all the dimensions of service: the input, the process and the output. This first dimension of input includes physical elements such as modern equipment and others, tangible or not (such as whether the premises are suitably decorated, clean etc.) The second dimension of process of quality is reported on the quality of interaction between the person who provides the service and the consumer and it includes elements such as friendliness, politeness, eagerness to please, etc. The third dimension is the measurement of result of service provided. It includes non-tangible gains and usually is related to the change in the physical or intellectual state of the customer.

Model 14. Structural equation model of antecedents affecting repurchase and positive word of mouth (Molinari et al, 2008)

Molinari et al examined the different influences of satisfaction, quality and value on customers' behaviour in B2B services. They support that the achievement of expectations of customers is positively related to customer satisfaction, quality and value. The precedents result in the purchase intention of service from the customer and the WOM of service and enterprise. The most important relation between these factors is found

between quality and WOM. For this reason it is very important for the enterprise to determine what customers expect in order to provide service which satisfies these expectations. The policy of over-promising causes customers to have higher expectations of service and results in their dissatisfaction when their expectations are not met.

Model 15. Model of customer satisfaction and future intentions (McDougall and Levesque, 2000)

McDougall and Levesque had investigated the relation between three elements: the quality of service and conceived value, customer satisfaction and future intentions. They supported that the quality of service and the conceived value are the most important factors in satisfying customers while satisfaction has a significant effect on the intentions of the customer. Specifically, the quality of service has two dimensions, the first one includes the basic service which is provided and the second includes the way the service is provided. Satisfaction, as well as the quality of service, positively influence customer satisfaction, which determines the intention to reuse the service. Satisfaction causes the customer to remain faithful to the enterprise while dissatisfaction leads him to seek service elsewhere.

Model 16. Two Approaches to Service Quality Dimensions (Lehtinen and Lehtinen, 1991)

Lehtinen and Lehtinen proposed two approaches concerning the analysis of quality of service and its dimensions. The first approach uses three dimensions of quality: the physical quality, the quality of interaction and the enterprises' quality. Physical quality is determined by the realistic elements of service while its basic elements are the products that are used in the provided service, the support (which includes the environment, such as decoration) and the equipment used. The above dimensions correspond to technical quality which was mentioned by Gronroos (1984). The quality in the interaction is reported as the relation between the enterprise and the customer and is distinguished between the interaction with individuals and the interaction with the equipment. The third dimension of quality concerns how the customers see the enterprise, the image or the profile it has created.

In the dimensions approach the discrimination of quality is between the quality of process and the quality of result. The quality of process is the qualitative estimate of the customer for his expectations of the service process. It is supported by how the customer sees the process of production and how he feels about this process. The element which determines the process quality is the comparison between the customers' expectation of the process and the way in which service is provided. The dimension of quality of result includes the evaluation of result of service process by the customer. Finally Lehtinen and Lehtinen point out that there is strong relation between the two dimensions since an enterprise, by checking the process, determines its quality and the quality of the result.

Model 17. Model of disclaimer of expectations (Woodruff and Gardial, 1996)

The confirmation or denial of expectations is realised by taking into account the product output that is conceived by the customer in comparison with the models. It is worth noting that the conceived output can be considerably different from the real product output, mainly when the service is complex or the customer is not familiar with it. Ideals can emanate from various sources depending on the customer, the situation and the type of service. The confirmation or denial of expectations creates a positive or negative feeling of satisfaction, which is responsible for the final result of this process (degree of satisfaction or dissatisfaction of customer). The result of satisfaction determines the purchase intention and creates the WOM while, on the contrary, dissatisfaction creates complaints.

Model 18. IT alignment model (Berkley and Gupta, 1994)

Berkley and Gupta's model describes how information technology can be used in order to improve the quality of service through the study of various cases such as banks, construction industries, service enterprises. Specifically, seven dimensions of quality have been found: reliability, correspondence, competitiveness, accessibility, communication, safety and customers' understanding. Information systems are generally used for the control of quality but also for the improvement of certain dimensions of it. Improvement can exist in many areas, it is however important that investment in information technology be in those areas that will lead to the improvement of competitive position of the enterprise. For this reason it is very important that information systems are aligned with strategy. The enterprise must understand its information systems needs and develop a suitable strategy.

Model 19. Kano model (Kano et al, 1984)

Kano's model investigates the product attributes which customers conceive as important. Kano has found the following elements of quality: the expected quality, the desirable quality and the attractive quality. In the expected quality the characteristics of product or service which the customers evaluate as particularly important are included. The high output of product to particular characteristics involves high customer satisfaction while on the contrary low output creates serious dissatisfaction. The characteristics of desirable quality constitute the basic desires and needs of customers. It includes elements of quality that give satisfaction when they exist and the opposite if they do not exist. Finally, attractive quality characteristics are those which the product or service allocates but which customers do not expect to be so. For this reason the high output of product concerning particular characteristics involves high customer satisfaction, while on the contrary the low output does not create dissatisfaction.

Model 20. Model of e-service quality (Santos, 2003)

The quality of service is one of the basic factors in the determination of success or failure in the electronic trade. This model examines the quality of service provided by the electronic trade. The basic dimensions that are examined are on the one side the facility of use, the appearance, structure, the linkage, the layout and the content, and on the other side reliability, sufficiency, support, communication, safety and motives for the use of the electronic trade. The last element is particularly important since this is the one that will attract customers and will keep them as customers.

Model 21. Measuring Service Quality in e-retailing (Collier and Bienstock, 2006)

For enterprises that operate via the internet it is of great importance to know how customers perceive the quality of service that is offered. This type of service presents unique characteristics that determine the quality of service in comparison with the traditional service that is offered outside of the internet. According to Collier and Bienstock (2006), quality of service is made up of three dimensions: the quality of process, the quality of result and the addressing of problems. Customers evaluate elements such as the precision of information, functionalism, the safety and the ease of using a web page. The process quality influences the customer's perception of the service result and this in its turn determines customer satisfaction. Satisfaction and purchase intention are also determined by the existence or not of problems and the confrontation of these.

Model 22. Service quality and customer satisfaction (Iacobucci et al, 1995)

Service quality and customer satisfaction are important elements which are often used in bibliography. Iacobucci et al examined the question of whether quality and satisfaction are determined by different factors and had different results. Researchers concluded that factors such as price, the backstages of an enterprise, and the ability to provide service, determine the opinion of customers about the quality of service, and the addressing of problems, the natural environment in which the service is provided, are all elements which make up customer satisfaction.

3. An application of the Servqual model

The Servqual model (Parasuraman et al, 1988) measures the quality of service as the difference between the expectations of the customer and his perception about the service he receives. In this framework, an application of the Servqual model is made in enterprises ABC and XYZ using a sample of 60 individuals.

The main methodological tool of the research constitutes the SERVQUAL questionnaire which measures quality through 49 questions, making discrimination in the following five dimensions: tangibles, reliability, responsiveness, assurance and empathy.

Table 1 summarises the average degree that the company ABC has in each dimension concerning the perception and the expectations of its customers. In the second column the gap in each dimension is presented which is calculated through the relation Perceptions-Expectations, while in the third column the factor of importance of each dimension is presented. In the last column the gap of each dimension is presented and finally the calculation of the gap is made. The same analysis is organised for the enterprise XYZ, the data of which are presented in Table 2.

Table 1: Enterprise ABC

Quality Dimensions	Perceptions-expectations	Importance of dimension	Weighted result
Tangibles,	-0,18	0,38	-0,067
Reliability	-0,21	0,28	-0,058
Responsiveness	-0,18	0,18	-0,032
Assurance	-0,18	0,09	-0,016
Empathy	-0,18	0,07	-0,013
			-0,18

Table 2: Enterprise XYZ

Quality dimensions	Perceptions-expectations	Importance of dimension	Weighted result
Tangibles,	-0,20	0,35	-0,070
Reliability	-0,19	0,25	-0,047
Responsiveness	-0,18	0,23	-0,039
Assurance	-0,15	0,11	-0,016
Empathy	-0,28	0,06	-0,017
			-0,19

The basic conclusions, to which the gap analysis for enterprises ABC and XYZ leads, are summarised as follows:

- The gap for both enterprises is negative because the expectations of the customers exceed their perceptions.
- The gap which is found between conceived and expected quality for the enterprises ABC and XYZ is small. The expectation of the customers of both enterprises appear to be particularly high. Meanwhile at the same time both enterprises currently appear to satisfy these expectations to an important degree but not absolutely.
- There are important margins of improvement for both companies concerning their realistic characteristics (installations, equipment).
- Particular importance should be given by the companies to their reliability and correspondence, elements which have particular importance for their customers.
- The customers are more satisfied, however, with the level of safety they feel during their transactions with the companies but also from the general image which the companies and their employees present to the customers.

4. Conclusions

In the modern competitive market, quality acquires particular importance for enterprises and consumers. The determination of significance of quality is an essential condition for its measurement. For this reason models have been formulated by researchers in order to provide the most reliable methods of measurement of quality and to offer to enterprises useful tools for the decision-making procedure. In the present article 22 models were reported on the measurement of quality of service, covering a spectrum from traditional services to services via internet, thus offering a useful handbook which can be used for instructive and inquiring aims. Interest was focused on the Servqual model, the application of which in two enterprises shows the way in which this particular model can be used to make useful conclusions. The report on the models shows that the subject of measurement of quality of service can be perceived from a different point of view each time, depending on the type of service and its characteristics.

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