

# Defining the customer's expectations in e-business

**Roberto Gilioli Rotondaro**

Escola Politécnica, Universidade de São Paulo, São Paulo, Brasil

## Keywords

Service, Electronic commerce, Quality, Customer requirements, Competitiveness, Retailing

## Abstract

E-commerce has recently generated, at a very fast rate, a lot of new techniques trying to win customers and make money. The success of these techniques can only be real if the customer recognizes them and, most important of all, starts buying from you. This paper deals with discovering an e-commerce user's expectations that make them qualify and choose an e-business supplier. To accomplish this, we use the "critical incident technique". This method results in a hierarchical relationship between critical incidents, satisfaction items and customer's needs, that are related to quality dimensions. The quality dimensions obtained changed in relation to the traditional service quality dimensions, showing that after a period of experience, the customer starts to establish his/her quality standards and take decisions based on these standards. Both the surviving and the successful companies are those which will learn to identify, understand and satisfy these needs.

## Introduction

In the last few years, e-commerce has generated a wide range of myths and enthusiasm on how to earn money and do successful business. The expectation was that a good idea would be enough to make a person millionaire overnight. Suddenly, the situation changed and digital companies started to be seen as a heavy burden to carry. Now, we are noticing this myth of non returnable expenditure challenged by companies that have already been showing positive results. The figures show a continuous growth in Internet purchasing (Colombini *et al.*, 2000).

When a person has a need and decides to use the Internet to satisfy it, he/she is also learning what he/she can get from it, at what cost and how safe. By interacting with the supplier's site, he/she plays an important role in the process execution, reducing the control the supplier has on it. The service is usually subjectively perceived and the result is always related to the customer's feeling. Supplier must consider that the user must be satisfied not only with the service's results but also with the way the process is performed.

The customer is learning what the Internet is and how it can be used to satisfy his/her needs. Nowadays, after a period of experience, the customer starts to establish his/her quality standards and take decisions based on these standards. Both the surviving and the successful companies are those which will learn to identify, understand and satisfy these needs.

This paper deals with discovering e-commerce user's expectations that make them qualify and choose an e-business supplier. To accomplish this we use the "critical incident technique" (Hayes, 1992).

## Conceptual background

The companies designed to serve are intended to succeed: the profit-planned companies are intended to failure (Nicholas Murray Buther (see Spector, 2000, p. 118)). Almost all large companies established in Brazil to render Web-related services were

operating with losses by the end of 2000 (Colombini *et al.*, 2000). Based on successful histories or on the need of modernization, many companies decided to join the Web, implementing either their own formulas or formulas based on success precepts.

Most of these companies used methods that are now considered myths, for instance (*HSM Management Magazine*, 2000):

- creating a site and putting a traditional business online is an easy task;
- the traffic or the number of visits to a site will bring the success; and
- we should enter all possible technological innovations on the site.

The fact is that creating a site can be a very complicated task, and what matters is the sales performance and not the number of visits to my site. Excessive facilities can result in very loaded or complex sites, which discourage the customer.

It remains to be clarified if these and a number of other ways to reach the customer via Internet have been established based on the customers' needs and their expectations. In e-commerce, not taking the customer into account is suicide. According to Jeff Besos (in Spector, 2000), the customers today, by having easy access to a wide range of information on products and prices and the freedom to navigate from a Web site to another with a simple click, shift the online commerce power balance from the trader to the customer himself/herself. In addition, while in the real world, a dissatisfied customer can talk about an unpleasant event with five friends, in Internet he/she can easily comment with other 5,000 people. This way, the online company should offer the customers something that can not be obtained in any other way, or that adds sufficient value to convince the customers to change their habits and use the new form of purchasing.

By satisfying his/her needs using the Internet, the customer plays a major role in the process of execution and with a level of interactivity hardly experienced in any other kind of business.

Interactivity is a condition for the user's participation that, when it occurs, modifies the subject of the interaction. This is a feature that transcends the earlier concepts of services, since in this case the customer grows as the causative agent of the process. He/she executes the process with increasing



Industrial Management &  
Data Systems  
102/9 [2002] 476-482

© MCB UP Limited  
[ISSN 0263-5577]  
[DOI 10.1108/02635570210450154]

The current issue and full text archive of this journal is available at  
<http://www.emeraldinsight.com/0263-5577.htm>



independence. The interactivity in Internet occurs between the customer and a hardware and a software, which, for most customers, represents something with a very new content in their activities. In fact, new forms of human relationship always involve new fears and anxiety. What to say about new forms of relationship involving appeals and feelings directed to machines? It will take a long time before we learn how to defend ourselves against the things we do not want and to use what we do want (Nicolai-da-Costa, 1998).

The use of machines and softwares that demand cognitive effort from the user leads to stress, which is already known as Tecnostress, which adds to lesions from repetitive effort as the possible consequences from the use of Internet. Therefore, the new form of trade highlights how important it is for the supplier to know not only the needs, but also the expectations of their customers. He/she is rapidly learning what e-commerce is and how to best use it in order to get the maximum benefit from it.

A research shows that customers consistently use a limited set of perceptual dimensions to predict and evaluate the outcomes of service interactions and relationships. Employing a variety of research methods, Parasuraman *et al.* (1985) discovered ten service quality dimensions, which appeared regardless of the type of service.

The ten dimensions are introduced (see Table I). The issue now is to find out if these dimensions also apply to all Internet-rendered services, and if they are similarly defined for both Internet and non-Internet rendered services.

The companies currently dealing with e-commerce use questionnaires to evaluate their services, based on quality features and dimension. Amazon.com considers that the customer values diversity, convenience and price (Spector, 2000). For them, the supplier should offer an easier, rapid and cost-saving method of purchasing, i.e. to provide time and money savings.

**Table I**  
 Service quality dimensions

<b>Reliability</b>	Consistency of performance
<b>Responsiveness</b>	Employees willing to provide the service
<b>Competence</b>	Having the required skills
<b>Access</b>	Approachability
<b>Courtesy</b>	Politeness
<b>Communications</b>	Keeping customer informed
<b>Credibility</b>	Trustworthiness
<b>Safety</b>	Risk-free
<b>Understanding the customer</b>	Provide individual attention
<b>Tangibles</b>	Physical facilities

The site [www.e-bit.com.br](http://www.e-bit.com.br) has an online survey on satisfaction, which allows the consumer to rate his/her supplier performance by using a group of questions to which should be assigned scores. Such questions involve specifically the dimensions shown below:

- purchase convenience;
- product selection;
- price;
- navigation;
- on time delivery;
- product quality;
- service quality;
- privacy policy; and
- handling and delivery of products.

The point is how these dimensions reflect the customer's needs and if they are important enough to make him/her decide upon either purchasing through the site he/she is assessing or not.

### Method and procedure

The critical incident technique (CIT) (Bitner *et al.*, 1990) has been used to define the requirements related to customer's expectations and needs. An incident is defined as an observable human activity that in itself is complete enough to allow inferences and predictions to be made about the person performing the act. A critical incident is one that contributes to or detracts from the general aim of the activity in a significant way.

Critical incident involves specific interactions between customers and service company employees that are especially satisfying or especially dissatisfying (Bitner *et al.*, 1990). To deal with electronic business we need a somewhat broader definition that includes the interaction with all aspects of the service company with which the consumer may interact (Shostack, 1985).

An incident was required to meet the four criteria of:

- 1 involving employee-customer interaction;
- 2 being very satisfying or dissatisfying from the customer's point of view;
- 3 being a discrete episode; and
- 4 having sufficient detail to be visualized by the interviewer.

As an exploratory method, CIT shares the advantages and disadvantages of other exploratory inductive methods. However, when the purpose of the research is to increase knowledge of a phenomenon about which relatively little has been documented, an approach such as CIT seems particularly well suited to the task.

This procedure involves two steps. In the first, customers are asked to do the following (Hayes, 1992):

- Describe five specific events that led to *satisfying* service instances of the service they received in the past.
- Describe five specific events that led to *dissatisfying* service instances of the service they received in the past.

For this step, it is essential that you obtain the input of people who have received the service. These people must be actual customers who have had several interactions with the service provider, since they will be giving specific examples of services. The recommended number of customers to be interviewed range from ten to 80 people. In the second, the information is categorized into groups.

A judge will group the incidents into satisfaction items and then group the satisfaction items into customer requirement categories. It is necessary to have two judges to make all classifications. The process can be seen in Figure 1.

### Data collection

The experiment was planned to be conducted in two steps. In the first step, a group of researchers, that will be named A, worked with a selected sample of people with good experience on computers and good educational level. The second group of researchers, named B, worked with a sample of people randomly selected, who should meet the only requirement of having experienced e-commerce and have used this means of commerce at least three times.

The results from group A were analyzed so as to generate a "quality dimension" list, and the results from group B were analyzed and compared with those from group A to evaluate the method.

### Group A

The research was performed among groups of students attending an industrial management updating course at the campus of the University of São Paulo. All the students had a university degree, were in charge of leading or managerial positions at product or service companies, were between

25 to 45 years old, and 80 per cent were male. All of them had already used the Internet more than five times to buy products via the Web, and for the research purposes, the acquisition of CDs and books was selected.

To ensure a sufficiently large sample of incidents, we planned to contact 20 students from three different classes, for a total of 60 students.

### Classification of incidents "A"

After analyzing the questionnaires, we obtained a list of 146 critical incidents. This list contained incidents that were similar to each other and we categorized these critical incidents using the method of Hayes (1992).

The key to categorizing these critical incidents is to focus on a specific adjective or verb they share. After this grouping analysis we ended up with 39 critical incidents. The next step was to write the satisfaction items. One guideline in writing the satisfaction items is that they should contain a specific descriptive term of the service, or a verb, that describes an actual event involving the service. The result of this analysis revealed nine satisfaction items.

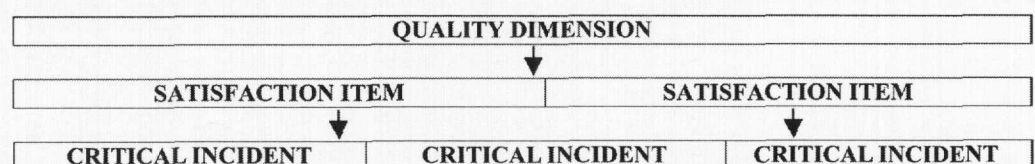
The final step was to group similar satisfaction items to form a specific customer requirement or quality dimension. We used two people in the allocation process according to Hayes (1992). The first judge followed the process above. The second judge was given the customer requirements categories established by the first judge and was asked to allocate the critical incidents directly to them, bypassing the satisfaction item.

The allocation process quality is determined after two analysts reach a common conclusion. This conclusion can be assessed by the percentage of similar inclusions made by both analysts, i.e. the number of coincident incidents is divided by the number of total, redundant and contrasting incidents.

The rate can range from 0 to 1. According to this classification, 1 means that both analysts totally agree, while 0 indicates a total disagreement. A score around 0.8 can be used as a breakpoint to determine if the customers' needs are acceptable. If a 0.8

Figure 1

Hierarchical relationship among incidents, satisfaction items and customer requirements





breakpoint is not reached, it is necessary to discuss the incompatible points to reach a consensus. Nevertheless, if a consensus cannot be reached, a third analyst should be called to solve the problem. We got 0.90 per cent agreement between the judges. The results of this process resulted in the list of Quality Dimensions shown in Table II.

### Group B

The research participants should have used an e-commerce site at least three times, i.e. they should have made a purchase or service via the Web and completed the cycle: order, payment, receipt. So, the first question made by the research team to the interviewee was: "How many times have you used e-commerce in Internet?"

Based on this question, two alternatives followed: if the interviewee reported a number below three, the interview was closed; otherwise, it proceeded with the following questions: "Which remarkable facts have you experienced when using e-commerce in Internet, from the time you accessed the site to the moment you received the item you ordered? Give five positive and five negative incidents. Include also any relevant fact which occurred after the receipt of the product or service." The interviews were conducted by the research team members and data from 30 different people were collected, totaling 205 answers among positive and negative critical incidents. Following this, the incidents were grouped according to their similarity, both positive and negative. After grouping the incidents, the next step was to write a sentence (satisfaction item) stating the positive and negative incidents.

The satisfaction items obtained, as well as the examples of incidents leading to this grouping are listed in the Appendix.

These critical incidents were then classified according to the quality dimensions determined by group A, in order to prove their applicability to several service situations of Internet-rendered services.

An adequate classification is shown in Table III.

## Discussion and conclusion

The quality dimensions described in "responsiveness and courtesy", Parasuraman *et al.* (1985), did not greatly influence our research, contrasting to what generally occurs in service rendering when the "moment of truth" occurs through the human contact. When buying via the Internet, this "moment of truth" occurs in a virtual scenario, the site. Therefore, the users do not expect a polite response, a

courtesy, a pro-active behavior from the site's service provider, as occurs in the conventional service rendering.

Taking a restaurant as an example, we can state with little error margin that most customers would expect responsiveness. The way the waiters perform their tasks is a factor of great perception and highly valued by the customers. In a site, since there is no interaction with a human being, this item becomes impaired in the user's perception and, consequently, in the analysis.

Since this is a relatively new modality of service rendering, when compared to the conventional commerce, the credibility is impaired. First, because many times people – being unfamiliar with the activity – create expectations, which makes the site's work even more difficult, since any non-compliance with the terms settled will result in a great loss. For example, if the product delivery is delayed one day, this fact will be remembered by the customer. However, if this delay occurs with a conventional purchase, probably most of customers will accept it. Another issue that impairs the site reliability and accounts for this high negative percentage is the safety. Many people are afraid of buying via the Internet, since many sites accept payment only by credit card, and most customers consider the combination "use of credit card" and "Internet" unsafe. In this case, we have the "safety and credibility" combination, according to Parasuraman *et al.* (1985).

So, either positively or negatively, ".com customers" are really worried about the credibility of "virtual" service providers, which justifies the greater success obtained by physical stores networks that have expanded their frontiers to e-commerce, as just another sales tool.

The dimension "Access", which reached the highest positive percentage, groups most qualities of e-commerce service, such as:

- convenience (it is not necessary to leave home/office to buy);
- time saving (no time lost going to a shop, parking and still taking the risk of not finding the product);
- access to products (it is possible to buy products from any place in the world, besides other local items of difficult access); and
- different forms of payment (progress payment, checks, credit card or bank collection).

Therefore, care should be taken in the analysis of this dimension, since it represents the e-commerce market, and it is impossible to evaluate the performance of a single site.

"Tangibles" should also be emphasized in this paper, since we are dealing with a

**Table II**  
 Critical incident, satisfaction item, quality dimension

Quality dimension	Satisfactions Items	Critical incidents
<b>Access</b>	Approachability, the service is easily accessible	Easy to conduct researches on price Search for similar products I want to know which factors compose the price Access to a variety of products There is no need to leave our home Access to products from other countries Access to difficult-to-find products Does not depend on the access site
	Easy purchasing	To buy and receive at home Prevent lines Convenient times Convenient form of payment Can be done through any computer machine
<b>Safety</b>	Risk-, doubt-free and confidentiality	To receive the product in perfect condition Safe use of credit card Confidence in the consumer data Purchase receipt To receive the specified product
<b>Communication</b>	Keeping customer informed in language they understand, prompt information	Clearly defined and easy to access data on specifications, form, validity, etc. of the product and service ordered Defined date and site of delivery To receive information as if he/she were handling the product Clearly defined and easy to access payment terms data, according to the local laws Lack of personal contact to answer doubts
<b>Friendly interaction</b>	Friendly interactivity	Excessive information on the screen Delay in the search of information Confusing interfaces Low flexibility to errors Easy operational system Possibility to make on-line searches Web problems
<b>Tangibles</b>	Access network without problems	To know if the transaction has been concluded when there are problems in the Web Need to restart several times
<b>Reliability</b>	Consistency or performance and dependability	Information on regrets What to do in case of defects or damage to the products received What to do in case of dissatisfaction with the product received Compliance with the consumer defense code
	Adequate and safe term	Delay in delivery Variations in the delivery date Too extended delivery date

**Table III**

Classification

Quality dimension	Critical dimensions group B
<b>Access</b>	I, III, VIII, IX, X, XI, XII
<b>Safety</b>	VI, VII
<b>Communication</b>	II, V
<b>Friendly interaction</b>	XIII
<b>Tangible</b>	XIII, XIV
<b>Reliability</b>	IV

“virtual” subject. In our study, we observed that this service’s tangibility depends on the site’s tools, i.e. the facilities it offers for the customer to buy or just search products and prices. So, attributes such as design, easiness to search and purchase, as well as easy access to the site (it should be remembered that most users still use conventional telephone lines) are the main items to be considered by this service providers.

As we can observe, "quality dimensions", as defined by Parasuraman *et al.* for service activities, are changing in e-commerce. For instance, the item "courtesy" disappeared since there is practically no relationship between the customer and the site's operators; other dimensions changed and have their contents highly enriched.

Let us now comment on the specific quality dimensions and their relationship with the critical incidents. Afterwards, we will make an analysis on how to use them, in order to set a more solid basis for the e-commerce:

- **Access.** A high percentage of critical incidents shows that the Internet accessibility plays a major role in the purchasing process, and is, undoubtedly, a very strong element in getting the order. However, this accessibility occurs at the moment of purchasing, and after that the supplier has to make the product or the service available in the form agreed in the transaction in the real world. Each item purchased on the Internet must be picked and packed and shipped and it must be done at a low cost.
- **Safety.** The same way the dimension Access plays a major role to get the order, Safety is, in its turn, one of the major qualifying elements. The customer will only access an admittedly safe site. The participants made clear that they want to know what is the site's privacy policy.
- **Communication.** Unlike the service rendered by people, the communication via the Internet plays a strong informative role. The site should provide all information available on the product, as well as on the purchasing process, in a clear, simple and concise way. In the list of critical incidents, several participants included the phrase: I would like to have information as if I were handling the product. This includes not only the specifications, but also the real images of the product or service.
- **Friendly interaction.** This dimension is a typical electronic service dimension. Since the customer interacts with the machine and the software, he/she wants a friendly interaction that primarily achieves their objectives in a fast, convenient and error-free way. It is obvious that his/her participation influences the final outcome, but he/she always takes into consideration the supplier's side when assessing the easiness of operation. The participants mentioned in the survey that they quit the purchase process after accessing the site several times due to the excess of information and because they did not receive the response in a proper time.

- **Tangibles.** This quality dimension has to do with the machines and the transmission network used. Until recently, there were difficulties in communication, which, many times, was slow and subject to interruptions. Today the technology is improving this dimension, both in data transmission and quality and price of hardware. However, the technology used by the server should be adequate to prevent transmission interruptions and line overload.
- **Reliability.** In case there is a problem, the customer wants to have the opportunity to lay a claim, to return the product or simply quit the purchasing process. It is obvious that he/she hopes everything goes right, but the possibility of recovery is a valued item. The participants state that the site should give directions on what to do in these cases and how they would be refunded.

Only diehard companies refuse the fact that business models need to be redesigned to conform to altered requirements of the e-shift economy and they must analyze their customer satisfaction needs as the start point for this redesign. Then they can use this technique to make a deeper and real survey on which e-commerce elements are first valued by the customers and those that are considered deleterious for the process, so as to invest adequately in the improvement of their services.

## References

- Bitner, M.J., Booms, B.H. and Tetreault, M.S. (1990), "The service encounter: diagnosing favorable and unfavorable incidents", *Journal of Marketing*, Vol. 54, pp. 71-84.
- Colombini, L., Giordino, A. and Caçado, P. (2000), "O que eles estão ganhando na Internet", *Revista Forbes*, No. 5, November.
- Hayes, B.E. (1992), *Measuring Customer Satisfaction, Development and Use of Questionnaires*, ASQC Quality Press, Milwaukee, WI.
- HSM Management Magazine* (2000), "Perigo na Web", November, pp. 14-20.
- Nicolaci-da-Costa, A.M. (1998), *Na Malha da Rede, os impactos íntimos da Internet*, Editora Campus, Brasil.
- Parasuraman, A., Berry, L.L. and Zeithaml, V.A. (1985), "A conceptual model of service quality and its implication for future research", *Journal of Marketing*, Vol. 40 No. 4, pp. 41-50.
- Shostack, G.L. (1985), "Planning the service encounter", in Zepiel, J.A.C., Solomon, M.R. and Surprenant, C. (Eds), *The Service Encounter*, Lexington Books, Lexington, MA, pp. 243-54.
- Spector, R. (2000), *Amazon.com*, Editora Campus, Brasil.



### Further reading

- Gianesi, I.N. and Corrêa, H.L. (1994)  
*Administração estratégica de serviços:  
operações para satisfação do cliente*, Atlas, São  
Paulo, Brasil.
- Johnston, R. (1995), "The determinants of service  
quality satisfiers and dissatisfiers",  
*International Journal of Service Industry  
Management*, Vol. 6, pp. 53-71.
- Wels-Lips, I., van der Marleen, V. and Pieters, R.  
(1998), "Critical services dimensions: an  
empirical investigation across six  
industries", *International Journal of Services  
Industry Management*, Vol. 9 No. 3, pp. 286-309.
- Zeithaml, V.A., Parasuraman, A. and Berry, L.L.  
(1990), *Delivering Quality Service*, The Free  
Press, New York, NY.

### Appendix

#### I. I found the products I needed easily

1. The site has an efficient search system.
2. I can search the product in several sites.
3. When buying via Internet I can easily compare prices between sites and products.

#### II. The site provides a good description of the products

4. I obtained product details to make comparisons.
5. Sometimes the information is not complete.
6. The product description is poor.

#### III. It was very convenient to buy via Internet

7. It was convenient to buy via Web because I hadn't to leave home.
8. I think that buying via Internet is easier than buying in a shop.
9. I don't have to leave home to buy via Internet.

#### IV. The after-purchase support was good

10. They sent me gifts for having bought a great quantity of products.
11. The site was pro-active; they called me back.
12. Complaints can only be made by phone or e-mail. It lacks human contact.

#### V. When I needed it, I was quickly served

13. When I had doubts, they solved them quickly.
14. I hadn't to wait for the service.
15. I couldn't talk to the operator.
16. I can't negotiate price in the site.

#### VI. I felt the site was reliable

17. The site seemed to be safe to make the purchase.

18. Some sites inform they have two kinds of connections: safe and unsafe.
19. I am afraid to give my credit card number.

#### VII. I received the product quickly and in good condition

20. The shop may be selling a product that is not available in stock, resulting in many instances, in no product delivery.
21. The site took a week to inform that the product was not available.
22. The purchase was cancelled as the product promoted in the site was not available.

#### VIII. I saved time buying via Internet

23. I spend less time buying via Web than going to the shop.
24. Some purchases take me no more than 10 minutes, mainly in the sites where I am registered.
25. I hadn't to leave home/office, saving my time, which for me can be translated into money!

#### IX. I found a wide variety of products

26. Variety of products with specific promotions.
27. The availability of certain products for purchase via Web is higher than in physical shops.
28. There is a narrow range of products.

#### X. I could buy products from distant places

29. Access to products from distant places.
30. Immediate access to some products (e-book).
31. It was easy to find products from other countries.

#### XI. It was easy to make the payment

32. The site offers several payment conditions.
33. It is possible to pay through bank collection (which was made through home banking).
34. Does not accept credit card for payment.

#### XII. I found prices lower than those in the shops

35. The price was lower than in a conventional shop.
36. The prices were higher than in a shop.

#### XIII.

37. The performance of the navigation in the site was good.
38. The interaction with the site was safe.

#### XIV.

39. I had problems with connection interruptions in the site.