Human-Computer Interaction -- INTERACT'03
M. Rauterberg et al. (Eds.)
Published by IOS Press, (c) IFIP, 2003, pp. 335-342

Integrating Customer Relationship Management Strategies in (B2C) E-Commerce Environments

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Abstract: Creating value and generating a total customer experience (TCE) is important for E-Commerce in order to attract customers. However, with increasing competition in the marketplace, it is becoming increasingly difficult to retain customers. E-Commerce, therefore, should focus on continuously providing value to the customers to build long-term relationships and reduce customer defections. We have evaluated five E-Banking sites from the UK finance industry and have shown that an organisation whose Web site is usable in HCI terms (that satisfies the Web Design heuristics / E-Commerce guidelines) might not always generate a TCE. It is important that along with usability heuristics, customer relationship management (CRM) strategies are integrated into the design of E-Commerce sites. In this paper, we have applied the service quality (SERVQUAL) framework from the relationship marketing literature for deriving customer relationship enhancing heuristics which can be integrated into the design of E-Commerce environments.

Keywords: Usability, Customer Relationship Management (CRM), E-Commerce, Total Customer Experience, Customer Loyalty, Service Quality, SERVQUAL

1 Introduction

Despite the collapse of many dot-coms in the last couple of years, Business to Consumer (B2C) E-Commerce has rapidly grown. In November 2002 alone, UK shoppers spent more than £1 billion on the Internet. Spending was double of what it was a year previously and with 43% of homes on-line in the UK and many accessing the Internet from work, spending is expected to continuously rise (BBC, 2002). In the UK, the on-line sales make up 4% of the total retail sales. In the US, B2C E-Commerce is predicted to reach $269 billion by 2005.

In the expanding space that is the internet, companies need to firstly ensure that they distinguish themselves from their competitors but also ensure that their click-through rates are optimised. Statistics show that 67% of transactions on the Web are never completed (Cohen, 1999). Only 36% of customers are satisfied by electronic transactions and this bad experience tends to drive customers to other channels (Chatham, 2002). Of the transactions that are not completed, 53% of abandoned transactions require a phone call or off line action. This has a knock on effect as call centre costs increase due to call volumes rising – with a reported rate of increase in volume of up to 65% as internet use increases (Millard, 2001).

In the Human-Computer Interaction (HCI) literature, research into the success or failure of (B2C) E-Commerce sites has primarily focused on the usability of the core Web site. Central to this has been how design criteria such as ease of navigation, optimal response time, and appropriate content can be managed to create usable customer-focused E-Commerce sites. However, it is evident from the relationship marketing literature (e.g. Payne et al., 1995) that such a uni-dimensional focus ignores the broader service delivery system within which the virtual customer-organisation interaction occurs.

In developing robust long-term customer-organisation relationships it is the operation of this service delivery system which is critical irrespective of whether the customer interaction occurs off-line or on-line. The research question is: how can the Customer Relationship Management (CRM) strategies for optimizing service quality central to

relationship development in conventional off-line marketplaces be engineered into (B2C) E-Commerce environments?

Against this backdrop the core aim of this paper is to determine how service quality and hence CRM strategies can be incorporated into the design of E-Commerce operations so as to engender customer retention, trust, and loyalty. The paper reports cross-disciplinary research integrating marketing and HCI. Drawing on an established service quality model (SERVQUAL) together with evolving CRM models, we have derived an integrated conceptual framework (e-SERVQUAL) for evaluating the service quality of E-Commerce environments. This framework is intended to provide a mechanism that will enable organisations to identify the factors that will enhance customer perceived quality with an E-Commerce environment and in turn underpin the development of robust long-term on-line customer-organisation relationships.

We show that in addition to the Usability / HCI criteria, which are anyway important to make the customer's interaction with the Web site a satisfying one, it is imperative that CRM heuristics are also integrated into the design of the E-Commerce environment for its success and customer retention. The specific focus of the reported research in this paper is on E-Banking services, given the complexity of such services and the conventional emphasis on relationship development. The outcomes of the paper will, however, be applicable to other domains of E-Commerce, such as retail, insurance, or travel.

2 Service Quality and Customer Loyalty

In an E-Commerce environment, the users are *customers.* Understanding their requirements and meeting their expectations is becoming a challenge. With the growth in the Internet and the E-Economy, the customer is in control and it is not difficult for him to move to a competitor site. A customer is willing to do business with an E-Commerce environment only if he gets *value* from his exchange with it.

An *E-Commerce environment* implies not only the front-end of the E-Commerce, which is the Web site, but also the back-office systems. These include security in credit card handling, delivery of products/services on schedule, post-sales support, and contact with staff via e-mail or in the call centres.

2.1 The Total Customer Experience

The *Total Customer Experience (TCE)* encompasses all stages of a customer's interaction with an E-Commerce environment, namely the Web-based retail site, the back-office systems, the delivery of the product or service on schedule, and the post-sales support. The breadth of the TCE highlights that it is not only the physical design of the Web site - the retail front-end of the organisation and its usability, or the price of the product / service, but the entire purchase experience that influences customer satisfaction and perception of value.

Value from a customer perspective may be defined in terms of satisfaction with, and perceived quality of, the service received in the course of the TCE. Creating value and generating a positive TCE is important for E-Commerce environments in order to acquire customers. However, with an increasing competition in the market place, it is becoming increasingly difficult to retain customers. E-Commerce environments need to see that they *continuously* provide value to the customers in order to build up customer loyalty, and reduce customer defections. The emphasis, therefore, is changing from customer acquisition to customer retention.

2.2 Creating Customer Loyalty

Customer loyalty, in general, increases profit and growth in many ways. Increasing the percentage of loyal customers by as little as 5% can increase the profitability by as much as 30% to 85%, depending upon the industry (Reichheld & Sasser, 1990) – a ratio estimated to be even higher on the Web (Reichheld & Schefter, 2000). One of the reasons for this is that loyal customers are typically willing to pay a higher price and are more tolerant when something goes wrong. They are easier to satisfy because the vendor knows what the customers' expectations are (Reichheld & Sasser, 1990). Indeed the success of some well-known E-Commerce sites (e.g. eBay, Amazon) can be attributed in part of their ability to maintain a high degree of customer loyalty.

Relationship marketing (Payne et al. 1995) involves getting close to customers in order to better identify and satisfy their needs. In recent years, CRM has emerged as a broad heading for some approaches and techniques of maintaining and enhancing customer loyalty (Dyche, 2002).

CRM is a set of business strategies designed to add value to customer interactions by providing service quality that exceeds the customers' expectations (Minocha, 2000). To date conceptualisation of CRM has been anchored in

conventional (i.e. off-line) marketplaces. The critical issue for investigation in our research programme is whether such conceptual frameworks remain valid within E-Commerce environments.

3 Service Quality and e-CRM

The essence of service quality is the ability to deliver what the customer needs and expects. *Service Quality* is the customer's subjective assessment that the service they are receiving during the TCE is the service they expect. If the service quality of the customer's TCE exceeds his expectations, he would be willing to come back and do more business with the vendor. Conversely, customers who experience low service quality will be more inclined to defect to other vendors because they are not getting what they expect.

Research indeed shows that in many traditional companies, perceived service quality strongly and directly influences customer loyalty. Service quality, as we have seen earlier, is also crucial to on-line organisations. Thus, E-Commerce environments need to consider the 'intended TCE': what do the customers want to experience when they interact with their organisation and what are their expectations.

The SERVQUAL framework (Parasuraman et al, 1988) offers a set of generic dimensions of service quality. Despite the criticism of the SERVQUAL framework, it remains the most widely applied measure of service quality for off-line marketplaces. In SERVQUAL, the customers' expectations and perceptions of delivered service are captured within a ten-dimensional framework; these are discussed in the next section.

3.1 SERVQUAL Framework

As services are by nature intangible, the assessment of service quality can be highly subjective. Customers may use a number of different criteria in judging the quality of their TCE. The research across a number of service industries was used as the basis for the SERVQUAL service quality inventory (Parasuraman, et al, 1988). This showed that customers can use ten main dimensions when assessing the quality of their experiences:

1. *Tangibles* - physical facilities and their appearance, equipment.
2. *Reliability* - ability to reproduce the same level of promised service every time and accurately.
3. *Responsiveness* - the speed with which the service provider responds to customer requirements, queries, complaints, etc.
4. *Competence* - the technical expertise of the provider in delivering the service.
5. *Courtesy* - the attitude of the service provider and the manner adopted by the server.
6. *Communication* - the clarity and comprehensibility of the information given to the customer.
7. *Access* - the ease of reaching the service provider, physically or electronically.
8. *Credibility* - the trustworthiness of the service provider.
9. *Security* - the physical safety of the customer, or privacy of customer-related information.
10. *Understanding* - how well the provider of the service understands the customer's needs.

3.2 Service Quality of TCE on the Web

As E-Commerce proliferates, the most experienced and effective E-Tailers are recognising that the key determinants of success or failure are not merely Web presence or low price but rather the delivery of service quality. A customer assesses the service quality of his TCE on the basis of all the cues and encounters that occur before, during, and after the transaction with an E-Commerce environment.

To encourage repeat purchases and build customer loyalty, the managers, therefore, need to address the following questions – what is good service on the Web? What are the underlying dimensions or heuristics of superior service quality of the TCE? How can the service quality of an E-Commerce environment be assessed? What actions can be taken to deliver service quality?

In this paper, we have begun to answer these questions by deriving the e-SERVQUAL framework for E-Business from the SERVQUAL framework, which is applied in traditional off-line markets. The e-SERVQUAL framework consists of *e-CRM (CRM for E-Economy) or customer-relationship enhancing heuristics* which can be applied to integrate customers' perceived dimensions of service quality in the design and development of E-Commerce environments.

4 e-SERVQUAL Framework

As shown in Table 1, we have mapped each of the quality dimensions of the SERVQUAL framework on to an equivalent e-CRM heuristic to develop the e-SERVQUAL framework for on-line marketplaces. The quality dimensions of Responsiveness,

Communication, Competence and Courtesy have been grouped together under one e-CRM heuristic - Customer Services. We have added two e-CRM heuristics – Customers in Control and people issues, in the derived e-SERVQUAL framework.

Dimensions of the SERVQUAL framework	e-CRM Heuristics of the e-SERVQUAL framework
1. Reliability	• *Reliability / Efficiency*
2. Responsiveness	• *Responsiveness*
3. Competence	• Dimensions 3, 4 & 5 have been merged into an e-CRM heuristic: *Customer Services*
4. Courtesy	
5. Communication	
6. Access	• *Access*
7. Credibility	• *Trustworthiness / Credibility*
8. Security	• *Privacy, Security, Risk*
9. Knowing the Customer	• *One-to-one Marketing or Customisation or Personalisation*
10. Tangibles	• *Information Content*
	• *Customers in Control*
	• *People Issues*

Table 1: SERVQUAL Framework and derivation of e-CRM heuristics

4.1 The e-CRM Heuristics

The e-CRM heuristics are:

1. *Reliability* – consistently and accurately deliver the level of promised service every time.
2. *Responsiveness* - the speed with which the E-Tailer responds to customers' queries, informs them about order fulfilment, or shipping of the order, responds to their complaints, etc.
3. *Customer Services* - willingness to help customers; efficiency, knowledge and courtesy of employees and their ability to inspire trust and confidence; empathy, caring, individualised attention provided to customers.
4. *Access* - the ease and speed of accessing the Web site.
5. *Credibility* - the trustworthiness of the E-Tailer; the brand image.
6. *Privacy /Security* - the security of the transaction and privacy of customer-related information.
7. *One-to-One Marketing / Personalisation* – Personalisation of the marketing experience. For example on an E-Banking site, customisation goes beyond recognising customers and putting up a Web page with their account information. The personalised experience involves proposing customised financial products / services and incentives.
8. *Information Content*- accuracy, completeness, clarity, timeliness of the product / service information provided by the E-Tailer. For example, on-line shoppers like to know what their shipping charges are before they hit the 'submit' button.
9. *Customers-in-Control* - customers are in control of their personal information; can track their transactions; and make their own decisions. For example, decision-making tools such as mortgage calculators on E-Banking sites, or comparison tables of the key features, benefits and advantages of products / services with those of competitors.
10. *People Issues* – building an image of giving something back to the community; providing employee-centred services within the organisation.

We have developed an *evaluation instrument* consisting of the 10 e-CRM heuristics listed in Table 1 and sub-heuristics for each of them. Some of the sub-heuristics for the e-CRM heuristic of 'One-to-One Marketing' are, for example:

- Provide features of personalisation; Provide a personal portal for the customer;
- Enable the customers to Customise or tailor their personal portals (e.g., look and feel, content, profiles, service preferences in relation to billing and delivery) to their own needs;
- Enable customers to track their orders / applications;
- Bundle products so as to cross-sell or up-sell;
- Provide loyalty incentives, customised promotions and discounts;
- Provide concise e-mail messages alerting the user to significant new developments and opportunities in his areas of interest.

We have not included the complete evaluation instrument of e-CRM heuristics in this paper due to space restrictions, but the authors will be happy to provide it to interested colleagues. The evaluation instrument can be used by a usability expert to conduct inspections of an E-Commerce environment

to check its conformance against the e-CRM heuristics, and thereby, qualitatively assess it for its service quality.

4.2 Deriving e-CRM heuristics and sub-heuristics

We derived the heuristics for the e-SERVQUAL framework by carrying out the following steps:

- We conducted a thorough literature review of the CRM literature for CRM guidelines (e.g. Dyche, 2002; Zingale and Arndt, 2001).
- From the success stories of some E-Commerce sites reported in the literature (e.g. Amazon.com, tesco.com, and crocus.co.uk), we picked up 'best practices' of integrating CRM strategies in the TCE.
- We then derived the equivalent e-CRM heuristics from the dimensions in the SERVQUAL framework. In addition, we proposed sub-heuristics for each of the e-CRM heuristic listed in Table 1.
- Next, we evaluated five E-Banking sites with respect to the e-CRM heuristics. The methodology for these evaluations and the results are discussed in the next section.

Based on the results of evaluation, we modified and refined the e-CRM heuristics. Note that the proposed set of e-CRM heuristics is not exhaustive. As our understanding and experience in e-CRM grows, we will update and evaluate this list of e-CRM heuristics. In the final section of this paper, we also discuss how we are currently validating the e-SERVQUAL framework.

5 Evaluation of five E-Banking Sites in the UK

There are two distinct models of E-Banking sites:

- Pure Cyber banks; e.g. in the UK, Cahoot, Egg, First Direct and Smile, which only have an Internet presence;
- Traditional banks that provide E-Banking to complement retail banking, e.g. in the UK, Barclays, Nationwide and HSBC are some of the traditional banks that have an Internet presence to complement their brick and mortar branches.

While not all the banks offer the full range of services on the Internet, banks in both the aforementioned groups offer a wide range of services. These include personal banking, commercial banking for both small businesses and large corporations, loan application services, financial services such as applying for an Individual Savings Account (ISA), opening an E-Account, applying for a mortgage, etc.

5.1 Methodology for Evaluation of E-Banking sites

We chose five E-Banking sites: Egg, First Direct, and Smile in the pure cyber bank variety, and E-banking sites of Nationwide and Barclays, which also have 'physical' branches.

Our study had two aims:

- To determine the ease of applying the evaluation instrument based on the e-SERVQUAL framework;
- To demonstrate that an E-Commerce environment should not only have a usable Web site in conventional HCI or Usability terms, but should provide service quality that meets or exceeds the customers' expectations.

5.2 Research Method

The research method involved conducting heuristic evaluations of the E-Banking sites. Heuristic evaluations involve inspecting the user interface to check its conformance against a set of heuristics or design principles (Nielsen, 1993). The heuristic evaluations involved two steps:

1. First of all we conducted 'usability heuristic evaluations'. We applied an evaluation instrument consisting of several sub-heuristics of the usability heuristics listed in Table 2. As an example of the sub-heuristics, the set of sub-heuristics for the heuristic – 'Provide an effective home page' are:

- Ensure intuitive access and logical progression to key user tasks;
- Integrate clear yet usable branding;
- Ensure visual elements do not compromise usability;
- Terminology should relate to the users' tasks and not marketing speak;
- Provide appropriate Metaphor for navigation from the home page;
- Simplicity or busy – is either appropriate?

The heuristics in Table 2 and the sub-heuristics in the *usability evaluation instrument* (which is available from the authors) were derived from several sources in the literature and Web sites (e.g. www.usableweb.com, Nielsen's www.useit.com, IBM Web guidelines). The list of heuristics was also refined and updated during the authors' experience of conducting usability evaluations of E-Commerce sites as a part of their consultancy activities.

2. Secondly we conducted heuristic evaluations of the five sites with respect to the e-CRM heuristics using the *e-SERVQUAL evaluation instrument* (based on the e-SERVQUAL framework).

Provide an effective home page
Design a natural and manageable structure
Provide an aesthetic minimalist Design
Enable easy and intuitive navigation
Ensure Consistency
Support the User

Table 2: Usability Heuristics

We considered the customer task scenarios listed in Table 3. The customer task scenarios presented here describe key situations of customer's interaction with an E-Banking environment. Task scenarios are realistic, concrete and specific and help to guide the evaluator through heuristic evaluations. The evaluator (usability expert) interacts with the E-Commerce site to role-play a stereotypical customer and conducts the customer task scenario. While walking through the scenario and navigating through the site, the evaluator checks for the site's conformance against the heuristics, and makes a note of situations in the scenario where the E-Commerce environment does not adhere to the heuristics.

1. Login Process
1.1 Login to on-line Account
1.2 Find how to retrieve a lost user ID / Password
2. On-line Statement
2.1 View a full statement
2.2 View a 6 or 12 month review of statement
2.3 Print a statement
3. On-line Account Management
3.1 Cancel a Direct Debit / Regular Transfer
4. On-line Customer Service
4.1 Find Customer Contact Details
4.2 Find FAQs, Help, etc.
4.3 Send an e-mail / message to customer services about an account-specific issue
4.4 Find how to notify a change of address
5. Obtaining Information
5.1 Find out about Individual Saving Accounts
5.2 Find out key features and benefits this product offers over its competitors

Table 3: Customer Task Scenarios

5.3 Data Collection

Three evaluators (usability experts) independently applied both the evaluation instruments (Usability and e-SERVQUAL) to assess each E-Banking site for its usability and adherence to the e-SERVQUAL framework.

For each heuristic in both of the evaluation instruments, the evaluators gave a quantitative usability rating and qualitative comments or evidence to support the quantitative rating. The quantitative ratings for conformance to the heuristics were given on a 6-point scale: 0 for catastrophe, 1 serious flaw, 2 significant issues, 3 minor concerns, 4 generally conformable, and 5 as an exemplar for conformance.

This process was carried out for each of the five E-Banking sites. We have not included evidence and comments for the Web sites here, as space does not allow.

5.4 Data Analysis

Normally at the end of heuristic evaluations, the evaluators generate a list of the prioritised problems corresponding to non-adherence to heuristics, the causes of the problems, and propose design recommendations to cater for the problems. However, in this study, the evaluators did not perform such an analysis, as our aim was to check for the conformance of the E-Commerce environment with respect to the usability and e-CRM heuristics rather than suggest design changes.

An independent analyst collated the data from the three evaluators for the five sites. For each heuristic, he took the average of the ratings of the three evaluators. He further averaged the ratings for each of the E-Banking sites.

Figure 1 shows the comparison of the ratings of the five E-Banking sites with respect to the e-CRM and the usability heuristics. The lighter bar represents the rating for the usability while the darker one is the rating for adherence to the e-SERVQUAL framework.

6 Results

Figure 1 shows that an E-Banking environment with a high usability rating might not have a high e-CRM rating with respect to the e-CRM heuristics, and vice versa.

Virtual Surveys (www.virtualsurveys.com) conduct an on-line Banking survey once every quarter to rate the overall customer satisfaction of the major E-Banking sites in the UK. Their latest research in Dec. 2002 has shown that whilst the banks are generally succeeding in providing easy to use Web sites, most are lagging behind on customer support and, in particular, the speed of the site.

In this latest survey, Smile received the highest rating of satisfaction; First Direct was second, followed by Nationwide. Barclays was 8th, while Egg was 9th in the league table comprising 11 E-Banking environments.

Our results are similar (see Figure 1): Smile received the highest rating of CRM as well as usability. Nationwide is not very usable, yet has a high CRM rating, thus having a greater customer satisfaction rating. In an E-Banking situation, a customer would be more comfortable to conduct business with a banking site that adheres to the e-CRM heuristics even if it were not very usable.

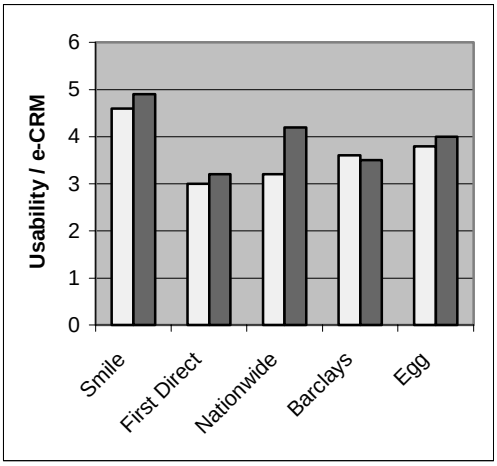

Figure 1: Results of Heuristic Evaluations with respect to e-CRM and Usability Heuristics

We did not rate First Direct as high as the league table of Virtual Surveys. The site of First Direct was not usable: for example, the different financial products and services were not visible on the Home page. The customer support functions such as FAQs, searchable knowledgebase, Call-me-Back facility, categories of contact details as per the nature of the queries, etc. were not available. Egg fared better in our evaluations as compared to First Direct.

We now list some examples of adherence / non-adherence to usability or e-CRM heuristics:

- *e-CRM heuristic - Customer Services*: We sent e-mails with a query regarding a mortgage product to all the five banks. Smile sent an auto-message immediately and then a reply from a 'real' person arrived within 24 hours. Nationwide sent a response within 8 hours. Barclays sent a response within 24 hours. Egg and First Direct never replied. A customer would ideally like a prompt response with useful advice.
- *e-CRM heuristics - Privacy, Security and Risk, & Information Content*: Egg had some very clear statements of security which can be assuring for the customer. It also gives lots of details about banking products. It can be very difficult to reach the information (navigability is poor on the Web site), but the information content is detailed.
- *Usability heuristic - Support the user:* Barclays gave little feedback when one of the evaluators cancelled a direct debit. The feedback-text was - 'Finish, that's it. All done.' This can leave the customer confused about what has been done to the account. The feedback should be clear giving the necessary details and the customer should be able to print the details of the changes to his account.
- *e-CRM heuristic - Customer Services:* Smile takes the customer through a set of personalised questions for the customer to check whether he is eligible for an ISA.
- *e-CRM heuristic - Access*: Nationwide provides accessibility to the Web site through several channels, such as PCs / Macs, WAP phone, Pocket PC, PDA, and interactive TV.
- *e-CRM heuristic - Customers in Control:* Smile provides comparison table for interest rates of ISAs for major ISA-providers. This feature helps the customers to find a competitive product.
- *e-CRM heuristic – People Issues:* Smile has pictures of its employees and their 'testimonials' saying how much they enjoy working for Smile. Smile also talks about its business values of service: transparency, accountability, ecological banking and efforts to reduce environmental pollution, ethical banking related to human rights, animal rights and not investing in businesses involving arms trade.

7 Conclusions and Further Work

We have proposed the e-SERVQUAL framework that can be applied by Web designers / managers to qualitatively assess an E-Commerce environment for its service quality.

We have seen that overall customer satisfaction and customer's perception of value and service quality is a function of both the factors – usability and CRM. If an E-Commerce environment has a high usability rating but is not able to provide assurances of security, or does not respond to customer queries promptly and with empathy and

courtesy, the customers will not have a satisfying experience with that E-Commerce environment. Thus, a balance of usability and conformance to e-CRM heuristics is required. A site should be usable and it should adhere to the e-CRM heuristics.

The next step in our research is to empirically validate the e-SERVQUAL framework. Towards this aim, we are currently conducting user-observations. We have been observing users performing self-motivated E-Shopping tasks (browsing and shopping for products / services). During the observations, we have made our presence unobtrusive and have avoided interrupting the user during his shopping activity. This 'naturalistic' and 'opportunistic' method was chosen in preference to controlled user-observations that require users to undertake pre-defined tasks on pre-selected E-Commerce sites. We felt that the limitations of such controlled studies would be detrimental to the exploration of the TCE.

The data that has emerged from these observation studies suggests that there are patterns of expectations and experiences (or themes) exhibited by the customer whilst interacting with E-Commerce environments. Some of the main concerns for E-shoppers are security of transactions, protection of personal data, access and download speed, informational obstructions such as incomplete, inaccurate, missing, or misleading information, and customer services. Of great importance is the post-transaction experience; 'will I be able to return an item?' 'can I contact a 'real' person?'; 'can I specify a delivery slot?', etc.

A preliminary data analysis of the data from our observational studies indicates that the expectations of service quality of the users from an E-Commerce environment closely match with the heuristics of the e-SERVQUAL framework proposed in this paper. In addition, we have seen how 'personal preferences of interaction' with Web sites can influence the users' on-line behaviour.

In the following studies these preliminary findings will be included to an evolving understanding of the total customer experience. E-Commerce is a rapidly evolving marketplace, which must look beyond the usability of its Web sites and concentrate upon providing service quality that encourages customer retention.

Acknowledgements

This research programme in CRM and Service Quality was first initiated in 2001 as a part of Shailey Minocha's BT Research Fellowship, and was supported by BTexact (2001-2002). It is currently being supported by the EPSRC Grant No. GR/R60867/01.

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