Service Quality Dimensions of E-commerce Websites

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India is becoming one of the largest and fastest growing populations of Internet users in the world. Approximately 40 million Indians are online every day. It is estimated that there will be over 500 million Internet users in India by 2018 making India the second largest population of Internet users in the world. To achieve competitive advantage by providing superior service quality, it is desirable for online service providers to uncover what attributes customers utilize in their assessment of overall service quality and satisfaction. This paper explores the important factors that customers utilize while assessing overall service quality of e-commerce websites. E-commerce service quality dimensions were analysed, through primary data collection from users of two Indian and two global e-commerce websites. Factor analysis was used to identify assessment factors. The study therefore provides important service quality dimensions to these E-commerce websites which needs to be bridged in order to please the customers by providing excellent online service quality.

Keywords: E-commerce websites, Online service quality, Online service quality dimensions, Factor analysis.

Introduction

Internet came into being in the early 70s, yet for the majority of the population it was virtually inaccessible until the early 90's. Electronic commerce, or e-commerce, as we know it today, was made possible through the advent of the World Wide Web, and the browser(s). E-commerce is the "Business activities conducted using electronic data transmission via the Internet and the WWW" **(Schneider & Perry, 2000)**. E-commerce has been defined as the "Business activities conducted using electronic data transmission via the Internet and the WWW" **(Schneider & Perry, 2000)**. E-commerce industry is achieving a significant pace in countries like US and China with sales of over 150 billion USD in revenue, but Indian e-commerce is still in its developing stage. However it has started growing by almost 35% CAGR from 3.8 billion USD in 2009 to an estimated 12.6 billion USD in 2013. E-commerce is shifting users from shopping in stores to shopping on the go.

The rapid growth in the internet population since 2009 has proven e-commerce beneficial to both sellers as well as buyers. E-commerce is shifting users from shopping in stores to shopping on the go. India's e-commerce industry is likely to clock a compounded annual growth rate (CAGR) of 35% and cross the $100-billion mark over the next five years, from $17 billion at present (ASSOCHAM -PwC study). Usage of e-commerce extends the global accessibility and helps sellers to access narrow market segments which are widely distributed **(Napier, 2001)** and buyers are benefitted by having access to global markets. They can access to wider product categories and large range of product mix by various sellers and do online purchases as well. This transactional quality entails the evaluation of the pre - and post - service experience.

E-commerce Service quality was defined as "The extent to which a E-commerce web site facilitates efficient and effective shopping, purchasing, and delivery of products and services" **(Zeithaml et al. 2002).**

In the early days of e-commerce, web presence and low price were believed to be the drivers of success **(Parasuraman, Malhotra, and Zeithaml, 2002)**. However, today having a simple web presence and low prices do not guarantee success anymore; instead the service quality issues have become prevalent: issues such as consumers' inability to complete transactions, products not delivered on time or at all, non-responsiveness to e-mails, and non-accessibility to desired information. Online repeat purchase and customer loyalty would be encouraged when seller would make e-service quality as a differentiating strategy. They need to shift e-business to e-service **(Parasuraman, Malhotra and Zeithaml, 2002)**. Therefore it is desirable for online sellers to

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identify what attributes consumers utilize in their assessment of overall service quality and satisfaction and which attributes are more important.

2 Review of Literature

Businesses need to satisfy customers and meet their expectations of service quality in order to gain competitive advantage **(Gagliano and Hathcote, 1994, Lin, H. F., 2007, Sullivan and Adcock, 2002)**. Customer dissatisfaction would be avoided by continuous assessment of customer's expectation of service quality **(Zeithaml, Bitner, 1996)**. Service quality can be described as the result from customer comparisons between their expectations and performance of service. That means that if the performance would be higher than the expectations the service will be considered excellent, if the expectations equal the performance the service is considered good and if the expectations are not met, the service will be considered bad **(Oliver et. al, 1997)**. Over the past several years online market has grown rapidly and electronic marketing activities have drawn a lot of attention **(Chang et al., 2009)**. The internet users are able and willing to transact through E-commerce websites (Liang and Lai, 2002). The growth in revenues from online shopping proofreads the same **(Rohm and Swaminathan, 2004)**. Customers are turning towards E-commerce websites due to features like, increased convenience, interaction, low cost and high degree of customization and personalization **(Park and Baek, 2007)**.

Overall customer evaluations and judgments regarding the excellence and quality of e-service delivery in the virtual marketplace is known as E-service quality **(Santos, 2003)**. To promote customer loyalty and customer retention service quality is important to e-tailors **(Imrie, Durden, and Cadogan 2000)**. Past researches have demonstrated that service recovery has a direct relationship with factors such as faith; repurchase intention, faithfulness, and word of mouth **(Blodgett, Hill, and Tax 1997; Goodwin and Ross 1992; Mohr and Bitner 1995)**, which all play a crucial role in success for E-commerce websites as well. A company must be able to deal with these problems when they occur because the resolution of these problems ultimately has an effect on repeat patronage and customer loyalty **(Bitner, Brown, and Meuter 2000; Holloway and Beatty 2003)**.

Various dimensions related to e-commerce service quality have been identified. The important one is quality of website design **(Than and Grandon, 2002, Lin, H. F., 2007)**. Website design means the appeal that user interface design presents to consumers **(Kim and Lee, 2002)**. Reliability dimension also has a direct positive effect on perceived service quality and customer satisfaction **(Zhu et al., 2002)**. Reliability represents the ability of the web site to fulfil orders correctly, deliver promptly, and keep personal information secure **(Parasuraman et al., 1988; Janda et al., 2002; Kim and Lee, 2002)**. Customers expect online stores to respond to their genuine concerns and enquiries promptly **(Liao and Cheung, 2002)**. Responsiveness is yet another trait of service quality. Responsiveness is how often an online store voluntarily provides services that are important to its customers **(Parasuraman et al., 1988; Yang, 2001; Kim and Lee, 2002)**. Researchers examining the responsiveness of web-based services have highlighted the relationship between perceived service quality and customer satisfaction **(Yang and Jun, 2002; Zhu et al., 2002)**. The dearth of real-time interaction tends to prevent potential customers from shopping online. **(Yang and Jun, 2002)**. Personalization includes individual attention and personal thank you notes from online stores **(Yang, 2001).** Studies have examined the influence of the customer service provided by internet retailers on perceptions of service quality and therefore satisfaction **(Wolfinbarger and Gilly, 2003)**. One of the primary barriers that stop people from online shopping is the concerns about security **(Zeithaml et al., 2000)**. Despite the technical advancements in internet security such as digital signatures, certificates, customers are still worried about security issues when shopping online **(Ranganthan & Ganapathy, 2002)**. It has been revealed that perceived assurance has a significant influence on the intentions to purchase online **(Lee & Lin, 2005).** A significant body of research in information systems has accumulated evidence for the existence of an effect of ease of use on initial user acceptance and sustained usage of systems **(Venkatesh, 2000)**. Ease of use is defined as the minimum degree of efforts are required by a person while using an information system. It is one of the standard parameters in information systems service quality research **(Davis 1989; Sanders and Manrodt, 2003; Venkatesh, 2000)**. Further, information about the products/services, provided on the website known as

information quality (IQ) plays an important role in online consumers' purchase decisions in the absence of an opportunity to physically interact with products in the online environment **(Wixom & Todd, 2005; Kim & Lennon, 2008).**

Rationale of the study

Since 2009 there has been a mushroom growth in the number of E-commerce websites in India, but still majority of them lack in providing service quality that the customers expect. In a copycat economy, service quality can be a source of sustainable competitive advantage. The companies thus, must identify various service quality attributes that customers use to assess the performance of these companies. Ultimately service quality leads to customer satisfaction which in turn leads to loyalty and hence to repeat purchase behaviour. This crucial role of customer satisfaction paving the way for retention and profits may prove even more crucial in the context of online or internet based service companies. This is because of the ease with which customers can switch between providers on the internet. Hence there is a need to narrow down varied e-commerce service quality dimensions to deliver superior service quality with limited resources. There is an extant literature available on the e-commerce service quality. Yet, e-commerce service quality remains an elusive and indistinct construct**.** This paper tries to identify important factors that measure customer responses to service quality constructs applied in an online context in India. This study will help the Indian e-tailors to formulate effective business strategy to attract and retain the Indian consumers.

Objective of the study

To identify important service quality dimensions that deliver superior e-commerce service quality to customers.

Research methodology

Descriptive research design was adopted for the study. To accomplish the objectives, 4 e-commerce websites were selected. The E-commerce websites were selected on the basis of rankings awarded by various sources. The review of literature and various scales by different researchers (Exibit1) resulted in formulation of a questionnaire consisting of 50 statements. These 50 statements were presented to 30 experts for vetting purpose. Vetting of 50 statements led to the final selection of 35 statements which represented various service quality features.

To ensure the internal consistency of the questionnaire so developed, reliability statistics was run. Applying reliability statistics to 35 statements resulted in the Chronbach's Alpha of .725. 6 statements (Items) were found to have low "**Corrected Item-Total Correlation**". These statements were found to contribute least to the Chronbach's Alpha and deleting these statements from questionnaire improved the overall reliability of the questionnaire, from 0.725 to 0.805.

The questionnaire was administered to 300 online shoppers (75 for each of the 4 E-commerce websites) to share their opinion on the expected service quality from an ideal E-commerce website. A 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) was used to collect the customer's expectations. Factor analysis was used to identify major e-commerce service quality dimensions. SPSS version 20 was used to tabulate and analyses the data.

Analysis and Findings

On the identified 29 statements factor analysis was performed and effort was made to find the major factors influencing e-commerce service quality. Kaiser –Meyer-Olkin (KMO) measure of sampling adequacy was used to find out the sampling adequacy. High KMO value (.805) as shown in table 1, shows that the factor analysis will be useful with the data. Bartlett's test of sphericity indicates whether the correlation matrix is an identity matrix. Table 1 shows very small significant value of Bartlett's test, which indicates that there is significant relationship among the e-commerce service quality variables, as well as factor analysis can be conducted between these factors.

Table-1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	13101.468
	Df	406
	Sig.	.000

Out of the twenty nine service quality factors, six major factors were extracted through rotated component matrix (table 3). These six factors namely Information Quality and Reliability; Assurance and Responsiveness; Website Design; Ease of Use; Privacy; and Personalization, were found to explain 81.93% of the major factors delivering superior e-commerce service quality to customers (table 4).

The major factor that influences the e-commerce service quality is *'Information Quality and Reliability'*. Current and timely information on e-commerce website has given utmost importance. Consumers prefer information in appropriate format and should be at the right level of detailing. On time delivery and order confirmation details on email within 24 hours are equally important factors. Consumers also consider order tracking details until delivery as a motivational factor.

Second factor is labeled as **'Assurance and Responsiveness'**. Before taking the purchase decision consumer look at the reputation of the e-tailers. They are motivated with the discounts and sales promotion offers. They consider customer reviews about e-tailers. They want that e-tailers should handle product return well and should show sincere interest in resolving consumer's problems and queries. They also prefer appropriate email responses as per their requirements.

Table 2 : Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.847	23.612	23.612	6.847	23.612	23.612	6.457	22.265	22.265
2	5.567	19.196	42.808	5.567	19.196	42.808	4.923	16.976	39.240
3	4.370	15.071	57.878	4.370	15.071	57.878	4.797	16.540	55.780
4	3.690	12.722	70.601	3.690	12.722	70.601	3.528	12.167	67.947
5	1.839	6.340	76.941	1.839	6.340	76.941	2.218	7.648	75.595
6	1.449	4.997	81.938	1.449	4.997	81.938	1.839	6.342	81.938
7	.792	2.731	84.669						
8	.715	2.466	87.135						
9	.647	2.232	89.367						
10	.451	1.556	90.923						
11	.351	1.212	92.135						
12	.326	1.124	93.259						
13	.283	.976	94.235						

14	.257	.886	95.121						
15	.208	.716	95.836						
16	.199	.685	96.521						
17	.194	.668	97.190						
18	.170	.585	97.775						
19	.145	.502	98.276						
20	.121	.418	98.694						
21	.087	.300	98.995						
22	.079	.272	99.267						
23	.071	.244	99.511						
24	.060	.206	99.717						
25	.044	.152	99.869						
26	.023	.080	99.948						
27	.009	.032	99.980						
28	.005	.019	99.999						
29	.000	.001	100.000						

Table 3 : Rotated Component Matrix

	Component					
	1	2	3	4	5	6
Information is current and timely	.971					
Information is at the right level of detail	.968					
Information on the website is enough to carry out the tasks	.964					
Information is in appropriate format	.960					
e-commerce website is able to keep its promises on time	.956					
Relevant order confirmation details are sent to email id within 24 hours	.940					
Order tracking details until delivery	.936					
Good reputation		.906				
Special rewards and discounts		.872				
Good customer reviews		.864				
Handles product return well		.844				
Sincere interest in resolving problems		.807				
Provides prompt answers to questions		.796				
Email responses are relevant, accurate and appropriate		.703				
Using e-commerce website is fun			.944			
Appropriate graphical design			.914			
Layout meets expectations			.908			

	1	2	3	4	5	6
Finding the way is easy			.887			
Easy completion of online transactions			.847			
Enables to order the product in a way that meets customer needs			.785			
Text is easy to read				.882		
Text/ labels /menu items are easy to understand				.868		
Learning to operate is easy				.859		
Consumer become skillful by using e-commerce website				.685		
Using the site is easy				.676		
Payments are submitted in a safe mode					.918	
Does not share personal information with other websites					.901	
Gives personal attention						.946
Understands specific needs						.940
Component 1. Information Quality and Reliability; 2. Assurance and Responsiveness; 3. Website Design; 4. Ease of Use; 5. Privacy; and 6. Personalization						

'Website Design' is considered as the third important factor by consumers. They are motivated towards the website which gives a lot of fun with appropriate graphical design. They would like to shop from the website which has easy completion of online transactions. The fourth factor is **'Ease of Use'**. Consumers prefer those e-commerce websites which contains easy and understandable text. They prefer ease while using these e-commerce websites.

'Privacy' is considered as the fifth factor by consumers. They want safe and secure mode of online payments. They also prefer that these websites should not share their personal information with other websites. The sixth factor is **'Personalization'**. Consumer prefer those websites which understands their specific needs and gives them personal attention.

Conclusion and Suggestions

Attractive infrastructure, improving economic growth, enhancing information technology and changing demographics of Indian population are few facts which are providing opportunities to the e-tailers in India. The e-commerce industry in India is attracting many business houses including domestic as well as global business players. This has further increased the competition among these business houses and with click-and-mortar companies. Therefore there is a strong requirement to understand the e-commerce service quality dimensions and draw inferences to improve the sustainability and profitability of the e-commerce business. This research was conducted to identify major factors influencing e-commerce service quality.

The major finding of the study indicated that there are six major factors that have influence on the consumers while evaluating the overall service quality of e-tailers. These factors are Information Quality and Reliability; Assurance and Responsiveness; Website Design; Ease of Use; Privacy; and Personalization. As these factors are giving an insight about the important factors customers utilize while assessing overall service quality of e-commerce websites, e-tailers can use these factors to formulate strategies for customer attraction, retention and loyalty. The new-age customer is not only looking for product quality and discount offers but he is also looking for convenient online shopping through personalization. He would like to feel an easy and excellent online shopping through effective and time saver transaction process and value-added information with on-time service assurance.

E-commerce retailers have to understand the changing needs of customers, their aspirations and expectations to create value. E-commerce websites should also have a strong customer relationship management system that would indicate the worth of the customer and be able to understand his needs while interacting with them, so as to cross sell their products. To manage growth and continuity in business, they need to focus on those areas where the expectations of customers are very high. Remarks on service reliability should be continuously obtained from customers. This will

enhance their service quality to a large extent. E-commerce websites needs to focus more on getting strong on the areas like privacy of customer data, secured online transactions, and trustworthiness of customers and consistency in performance.

Scope of further research

This paper with its results unearths the service quality dimensions of major Indian e- retailers. The next link in the paper could be to benchmark these Indian E-commerce websites with world's best E-commerce websites so as to keep them competitive enough in this global competitive industry.

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Exhibit- 1: Review of Dimensions to Measure E-Commerce Service Quality

Sr. No	Name of scale	Title	Author	Year
1	E-Servqual	"Customer's perception of online retailing service quality and their satisfaction"	Minjoon Jun, Zhilin Yanq and Daesoo Kim	2004
2	E-Service Quality	"Service quality and e-commerce : an exploratory analysis"	J.Cox and B.G.Dell	2001
3	E-S-Qual And E-RecS-Qual	"A multiple item scale for assessing 1. electronic service quality"	A. Parasuraman and Valarie A. Zeithaml	2005
4	E-TransQual	"e-TransQual: A transaction process-based approach for capturing service quality in online shopping"	Hanse H. Bauer and Tomas Falk	2006
5	E-Servqual	"An assessment of customer's e- service quality perception, Satisfaction and Intention"	Godwin J. Udo and Kallol K.Bagchi	2010
6	E-Service Quality	"Measuring the quality of E-Service : Scale Development and initial validation"	Samar i. Swaid	2009
7	Site Qual	"The Ethics of Online Retailing: A scale development and Validation from the consumer's prospective"	Sergio Roman	2007
8	E-S-Qual	"Measuring Service quality in Online luxury goods retailing"	Turk, Berresheim	2012
9	WebQual	"WebQual: A Web Site Quality Instrument"	Lociacono, Watson and Goodhue	2000
10	SiteQual	"Developing a Scale to Measure the Perceived Quality of an Internet Shopping Site (Sitequal)"	Yoo and Donthu	2001