The role of e-service quality management in the delivery business value

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ABSTRACT

In sharp contrast to the extensive debate that has been conducted in the contemporary literature, with regard to consumers' perceptions of e-service quality, the voice of those managing e-service quality has remained relatively silent. Against this backdrop, the primary aim of the research presented in this paper is to address the gap in the literature with regard to the role of electronic service quality management in leveraging business value from on-line retailing strategies. The study was undertaken using a quantitative research methodology, based upon questionnaires, which resulted in a sample of 225 responses, completed by senior managers from across the UK's on-line retail sector. The results of the statistical analyses have demonstrated that the perceived success of a retailer's e-commerce operations is strongly associated with both the management approaches to e-service quality and the level of e-commerce adoption. Of particular interest is our finding that as the scale and scope of a retailer's e-commerce operations grow, there is a concomitant need for its e-service quality operations to develop, if it is to realise the full value from its on-line activities. The article adds to the body of knowledge regarding the management of electronic service quality while also seeking to stimulate critical debate concerning the role of service quality practises within prevailing IT value discourses.

1. Introduction

Globally, the market for e-commerce is already huge, and it is still experiencing very fast rates of growth: the total revenue from on-line transactions was estimated to have been just over \$1 trillion at the beginning of 2012, and it is forecast to rise to \$1.5 trillion, by the end of 2014 (eMarketer, 2014). The reasons for the strength and the persistence of growth in the electronic market-place are threefold: there are still substantial numbers of on-line buyers, using the Internet for the first time; existing on-line consumers spend more, per capita; and many new transactional web-sites have been launched by established off-line retailers (Clements, 2011). Such aggregated sales figures are made up from the individual performances of extremely large numbers of individual Internet retailers, and although the trend line is rapidly rising, there is much evidence to suggest that not all retailers have been equally successful in their attempts to develop an effective web presence (Evanschitzky et al., 2004; Lunce et al., 2006; Korgaonkar

and O'Leary, 2008; Rao et al., 2011). Consequently, for many years, the reasons why some web businesses flourish, in this rapidly expanding, but highly competitive market-place, whilst other fail, has been has been the subject of much academic scrutiny as well as practitioner interest and debate (Doherty and Ellis-Chadwick, 2009).

Creating a superior experience for the customer, through the delivery of first-class on-line services, may be one important way in which on-line retailers can improve their chances of developing a successful on-line business (DeLone and McLean, 2004). In the context of Internet retailing, it has been argued that service quality should be conceptualised, broadly, as the degree to which the consumers' service needs have been met (Xu et al., 2013). During the last two decades, an increasing number of studies have contributed to enhancing our understanding of the role of e-service quality in shaping customer experiences and behaviours. Thus far, the vast majority of e-service quality studies have been consumer oriented, in that they have sought to explore how various facets of the e-service quality offering impact upon a range of customer-oriented success measures, such as customer satisfaction, intention to buy and consumer trust (Chen et al., 2014; Kassim and Abdullah, 2010). Whist these studies provide many extremely interesting insights into customer motivation and consumer

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behaviour they do not say a great deal about the success of the site from the host organisation's perspective. No matter how positive customer attitudes, behaviours and experiences may be, if these are not't being translated into tangible and positive business benefits, then it cannot be argued that any e-commerce initiative has been truly successful. As (DeLone and McLean, 2004, p. 31) note, although '*the Internet has dramatically affected the conduct of business …. the laws of economics have not been rewritten*', and therefore organisation's still need to ensure that they keep an eye of the bottom-line. Against this backdrop, there is a pressing need for more organisationally-oriented research studies of electronic service quality.

It is envisaged that in adopting a retailer, rather than a consumer, perspective, our study will contribute to the literature in three important ways. First, it will shed light upon how retailers' organise their e-service operations and practises. Second, it will investigate how the practise of e-service quality management is shaped by the scope of the retailers' e-commerce operations. Finally, and perhaps most importantly, it will seek to shed light upon the role of electronic service quality management in leveraging business value from on-line retailing strategies. In terms of its structure, this manuscript continues by presenting a critical review of the extant literature for this study, before describing the research methods adopted, in section three. The research results are presented in a series of tables that are discussed in the Sections 4 and 5, whilst their importance and implications are assessed in the concluding sections.

2. Conceptual background and research objectives

This section aims to review existing literature with respect to the three broad constructs that form the study's primary focus, namely the management of e-service quality, the scope of e-commerce adoption and success of e-commerce strategies. In critically reviewing the literature, the motivations and academic justification for this study will be established.

2.1. E-service quality management (ESQM)

In what has become one of the most widely quoted definitions, Parasuraman et al. (2005, p. 217) assert that e-service quality is the '*extent to which a website facilitates efficient and effective shopping, purchasing and delivery*'. Although in an on-line context, the target of the purchase encounter clearly spans the full product/service continuum, there is always a significant service element to any on-line transaction as, even when a highly tangible product is being bought, the purchase, delivery and *post-purchase support* are all essentially service elements of the transaction (Rowley, 2006). However, in the on-line context, the service dimension can often be rather more problematic as there is no face-to-face interaction, with a service provider, which is the staple of most traditional service encounters (Zeithaml et al., 1996). Given its very wide ranging nature, and central role in electronic transactions, service quality is increasingly recognised as playing a very important role in any on-line retailing, and it is therefore one that needs to be actively and comprehensively managed (Ladhari, 2010; Liao et al., 2011).

As the customer is on the receiving end of retailers' attempts to manage and enhance service quality, much past research has focused upon evaluating customers' perceptions of the quality of service that they have experienced, when making purchases in a wide variety of on-line contexts (e.g. Boshoff, 2007; Long and McMellon, 2004; Xu et al., 2013). Customers' perceptions of the service quality they have experienced, when purchasing on-line, have typically been measured by using the SERVQUAL framework

(Parasuraman et al., 1988; 2005). Because service quality has typically been defined and measured from the customers' perspective (Xu et al., 2013), a very wide variety of studies have already been undertaken to ascertain how customers on-line service encounters ultimately affect their satisfaction, trust, loyalty and intention to buy (Rowley, 2006; Kim et al., 2009; Chen et al., 2011). We also know from prior studies of the practise of service quality management, in traditional, off-line business contexts, that, if managed appropriately, internal service quality can exert a significant and positive influence on business performance, using both financial and non-financial measures (e.g. Zeithaml, 2000; Duncan and Elliott, 2002; Madu et al., 1996; Flynn et al., 1995). More specifically, it has been shown that superior service quality is associated with: increased sales growth (Tan et al., 1998) and improved profitability (Rust et al., 1995) However, to date, there appears to be little literature, focused explicitly upon the business, rather than the customer, that explicitly seeks to critically evaluate the role of service quality, in leveraging business value, in an on-line context.

2.2. The scope of e-commerce adoption

At the outset of the online retailing era, the uptake of the Internet by retailers was a hot topic, and a significant amount of research was devoted to exploring both the rate and the scope of e-commerce adoption (e.g. O'Keefe et al., 1998; Cockburn and Wilson, 1996; Ellis-Chadwick et al., 2002; Spiller and Lohse, 1997). However, more recently, interest in this phenomenon has waned significantly. The fairly sporadic, more recent, contributions to this body of literature, tend to suggest that there are still some very big differences between the highly enthusiastic early adopters of every new Internet function, feature or capability, and those retailers who are still reluctant to commit too much resource to their online channel (Rodríguez-Ardura and Meseguer-Artola, 2010; Doherty and Ellis-Chadwick, 2009). However to date, most research into e-commerce adoption, in the retail sector, has treated e-commerce adoption as the dependant variable, typically using a binary-adopter vs. non-adopter – variable to measure the uptake of a variety of Internet technologies (e.g. To and Ngai, 2006; Gho-bakhloo et al., 2011). Consequently, there is relatively little, up-to-date knowledge about the scope and sophistication of retailers' online strategies, nor the extent to which these might influence other aspects of e-commerce activities.

2.3. The success of e-commerce strategies

Over the past 25 years a very substantial body of research has been attempting to improve our understanding of the drivers of e-commerce success (Doherty and Ellis-Chadwick, 2010). As we have already seen, the vast majority of e-service quality studies have used a customer-oriented measure of success as a dependant variable, and the same is true for most other attempts at understanding what more broadly determines e-commerce success, which have also typically adopted a customer-centric orientation. Such studies seek to measure the consumers' attitudes and reactions to a variety of different elements of the retailers' on-line offerings and strategic positioning, as manifested through the design of their web-sites. Indeed, a large numbers of studies have now been conducted that explore the impact of a variety of independent variables, such as ease of use, perceived control, interactivity, and shopping enjoyment on a range of different dependant variables, such as perceptions of site quality, customer loyalty and intention to continue shopping on-line (Wolfinbarger and Gilly, 2003). More recently, Goode and Harris (2007) have investigated the impact that the consumers' perception of on-line reputation, reliability, site design and security might have on their

overall satisfaction with a particular web-site. Other researchers have sought to perform detailed studies of the role that the consumers' experiences of single aspects of the retailers' online offerings, such as 'e-tail store image' (Wilde et al., 2004), 'store layout' (Vrechopoulos et al., 2004) or perceived 'hedonic and utilitarian value' (Chiu et al., 2012) might have on their shopping behaviour.

By contrast, the literature with regard to the perceived or actual effectiveness of retailers' web strategies appears to be considerably less extensive. There are a reasonable number of case studies of the success and failure of e-commerce initiatives (Golden et al., 2004; Duffy, 2004; Lunce et al., 2006; Hinton and Barnes, 2009), and a number of discussions on how e-commerce success can best be measured (DeLone and McLean, 2004), but few researchers have attempted to survey on-line retailers, to determine the extent to which they perceive their on-line offerings to have been successful. One important piece of empirical work that has been conducted with respect to such benefits has been conducted by Zhuang and Lederer (2003). However, their study focuses primarily upon the benefits of on-line retailing, and does not therefore also explore the determinants of success. By contrast, Doherty and Ellis-Chadwick (2009) have surveyed retailers, to determine the impact of a wide variety of internal, external and adoption factors on e-commerce success, but they have not considered the potentially important role of electronic service quality in leveraging success.

2.4. Critique of literature and research objectives

Parasuraman et al. (2005, p. 214) argue that: '*to deliver superior service quality, managers of companies with a web presence must first understand how consumers perceive and evaluate online customer service*'. We would agree that this is an important first step, and from our review of the extant literature, it is clear that there is already a very well developed body of consumer-oriented studies, to fulfil this critical requirement. More specifically, it is clear that customers' perceptions of the service quality they have experienced, on-line, can significantly affect their overall level of satisfaction, trust and loyalty. However, we would argue that whilst insights into consumer perceptions may be a necessary condition, for understanding how to deliver superior service quality, they are certainly not a sufficient condition. Existing studies might tell managers what consumers want, in terms of service quality, but they do not provide any insights into the actual service quality practises that are being currently being provided by on-line retailers. Perhaps more importantly, we have little understanding of how such quality practises are being translated into improvements in business performance, within the organisational context.

A second and closely connected gap in the literature, relates to the scope of retailers' e-commerce activities: we already know a great deal about the extent to which organisations either adopt or do not adopt a range of Internet technologies, but relatively little about the specific functions and services that retailers offer consumers, when they are shopping on-line, and how these might affect the host organisation's service quality management practises. For example, a narrowly focused and relatively simple Internet offering, based purely around on-line sales, might only need the support of fairly low key service management practises, whilst a more sophisticated and fully developed set of e-service processes might be required to effectively manage a wide ranging and more sophisticated e-commerce operation.

Against this backdrop, an extensive research study, of UK-based Internet retailers, was initiated to better understand the service quality management practises that are currently being adopted, and how these relate to other important aspects of their on-line activity. More specifically, the following research questions were used to guide our study, as illustrated in Fig. 1:
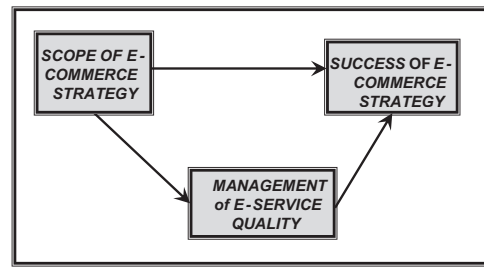
Fig. 1. Research Model.

1. To what extent does the scope of the retailers' e-commerce strategies influence the range of e-service quality management practises being adopted?
2. To what extent does the scope of the e-commerce strategy determine the resultant level of e-commerce success?
3. To what extent does range of e-service quality management practises being adopted determine the resultant level of e-commerce success?

It was envisaged that by addressing these three research questions, important insights into how retail organisations should approach the task of managing their Internet strategies might be generated, and in so doing, the study would be responding to Schibrowsky et al. (2007) call for more strategically focused research in this domain. The following sections of this paper describe and discuss the primary research that was undertaken to critically investigate these three research questions.

3. Research methods

It was felt that a questionnaire-based study should be used to investigate the research objectives, as this approach is best suited to the generation of results, which can be generalised to a target population (Malhotra and Birks, 2007). The aim of this section is to review the process by which the questionnaire instrument was developed, validated and ultimately targeted and distributed.

3.1. Design of the e-service quality questionnaire

To address our three research objectives, it was necessary to develop a series of measures that would adequately describe the responding retail organisation's adoption of e-commerce, their approach to the management of e-service quality, and the perceived success of their e-commerce strategies. To maximise the reliability and validity of the research instrument, and to strongly embed the research within the existing literature, each of the initial questions were derived from the literature, as described below:

1. *Respondent classification*: The first section was designed to capture background information with respect to a responding organisation's activity sector and its size (Dillman, 2007), as summarised in Table 1.
2. *Scope of e-commerce strategies*: To understand the scope and focus of the retailers' Internet strategies, respondents were asked to critically consider a wide variety of common retail activities that might be supported on-line, to determine the extent to which each had been adopted. These measures were based upon prior studies of web-based retail activity (Aguila-Obra and Padilla-Meléndez, 2006; Basu and Muylle, 2003; Doherty and Ellis-Chadwick, 2009), and respondents were asked to evaluate the extent to which they had implemented each, using a 7-point Likert scale, ranging from '*no activity*

Table 1
Profile of responding organisations.

Activity sector	Clothing	Mixed	Furnishing	Grocery	Electrical	DIY	Health	Other
% of sample	21%	9%	6%	6%	8%	11%	6%	31%
Size: no. of staff	< 100		100–1000		1000–5000		No response	
% of sample	64%		26%		7%		3%	

planned', through to '*already fully active*'. Appendix A which is used to present the results of the factor analysis for this construct, also explicitly identifies each of these item measures used.

3. *Management approaches to e-service quality*: One of the most important and novel aims of our study was to examine the uptake of a variety of common e-service quality practises. Respondents to the questionnaire were asked to quantify the extent to which each management practise had already been adopted, within their organisations, using a 7-point Likert scale, ranging from *strongly disagree* to *strongly agree.* Ultimately, 21 distinct service quality management measures were included in the survey, based upon a wide ranging review of the Internet retailing literature (e.g. Cândido and Morris 2000; Cristobal et al. 2007; Wolfinbarger and Gilly, 2003), Appendix B, which is used to present the results of the factor analysis for this construct, also explicitly identifies each of these item measures used.

4. *Perceived success of e-commerce strategies*: The extent to which our sample of retailers judged their portfolios of web-based offerings to have been successful was explored through the final set of item measures. Each individual measure was derived from the literature (e.g. Daniel and Grimshaw, 2002; DeLone and McLean, 2004; Hsu et al., 2006; Chong and Pervan, 2007), and operationalised using 7 point Likert scales. Seventeen different measures of success were utilised in the survey, which could be combined to provide a really broad-based measure of e-commerce effectiveness. It is important to stress that respondents were not asked to provide hard, financial measures of success, such as the profitability, as this information would have been far too commercially sensitive. Each of these seventeen measures is presented in Appendix C which is also used to present the results of the factor analysis for the success construct.

The relationships to be carefully assessed amongst these constructs are presented in our outline conceptual model (see Fig. 1).

3.2. Questionnaire validation and targeting

Before widely distributing a survey, it is important to subject it to extensive testing and validation to establish its potential effectiveness and to avoid mistakes in questionnaire design (Bryman and Bell, 2007). The initial validation of the research instrument consisted of a series of pre-tests. A target group of 24 appropriate individuals, including subject specialists, academic experts and retailers, were given draft copies and asked to critically review the questionnaire. After completion, de-briefing interviews were conducted, which resulted in a number of enhancements to the wording and structure of individual questions and layout of the questionnaire.

Having developed and tested the research instrument, it was necessary to establish an appropriate sampling frame to target the UK's leading retailers. Consequently, we chose to target this study, at those UK-based retail organisations, as listed in the FAME Directory, or the UK Retail Directory. Ultimately, a total of 3000 companies were identified from both databases that had the potential to be used for the sample, in this study. In common with

previous studies (Doherty et al., 2003; Teo and Tan, 2002), it was anticipated that the most appropriate respondent was likely to be the '*Marketing Director*', and so each was targeted by name. Prior to distributing all the questionnaires, a pilot-testing exercise was conducted, involving 10% of the sample, to reassure the researchers that their sampling frame was appropriate. After a round of follow-up mailings, the survey ultimately generated 225 usable replies, and 310 questionnaires returned as '*addressee not known*', giving an overall response rate of 8.4%.

Given the relatively low response rate, a set of telephone-based interviews were conducted, which provided us with reassurance that the respondents to the survey were not systematically different from the non-respondents. Any sample bias introduced through the loss of data from non-respondents is often hard to establish, as this data is not easily obtainable. However, it is possible to approximate this bias by comparing the answer patterns of early and late respondents (Armstrong and Overton, 1982). Independent *t*-tests (Pallant, 2007) were used to examine the differences between the early and late groups, for the each of the three constructs' items scores. The results of this suggest that, there are no significant differences in any of the scores, which provided reassurance that non-response bias would pose no significant problems for this study.

4. Research results

This section presents the results of a data reduction undertaken to extract a number of distinct factors from the complete data set, before presenting and discussing the research results associated with the three research questions, as presented in Section 2.4.

4.1. Data reduction through the identification of factors

Given the high number of variables, as identified in the variable sets presented the appendices, and the lack of prior studies in this domain, factor analysis was used to establish whether this data could be consolidated into a smaller number of distinct factors. Factor analysis is a means of summating information contained in a large number of variables into a smaller set of new composite factors, with a minimum loss of information (Hair et al., 2010). To simplify interpretation, independent factor analyses were run on each of the three variable sets, using '*principal components*' factor analysis, with a '*varimax rotation*', as it is easier to interpret the results (Hair et al., 2010). The application of the '*Scree*' test and a review of the '*Eigen*' values were used to determine the most statistically significant number of factors for each of the variable sets. Ultimately, a total of nine factors were identified from the three variable sets, each of which was given a factor name, which was chosen to best represent the nature of its constituent items. The factor names, loadings, '*Eigen*' values and means values for all the variable sets are presented in Appendices A–C. The validity and reliability of each factor was also tested using coefficient '*alpha*'. Ideally, alpha scores should exceed 0.70 (DeVellis, 2003), and for our sample, all nine of the derived factors were comfortably over this boundary condition.

Having successfully reduced the data-set, into 9 distinct factors, it was possible to use multiple regression analysis to thoroughly

examine the relationships between the various constructs, which comprised the research model (Fig. 1), as described in the following three sections. Multiple regression analysis was used to investigate each of these research questions, as the data comfortably met the requirements for regression analyses, with the ratio of independent variables to cases [32:1], clearly exceeding the recommended threshold value of 5:1 (Hair et al., 2010). Moreover, a 'stepwise' regression approach was adopted, to allow the contribution of each independent variable to be assessed iteratively.

4.2. The relationship between Internet adoption and e-service quality management

Probably the most original element of this study is the explicit investigation of e-service quality management, from the organisational perspective, and as can be seen from the results, presented in Appendix B, the 'e-service management' construct was decomposed into four distinct factors. In terms of its Cronbach Alpha and Eigenvalue, the strongest factor is the 'Commitment and Resources' factor, which comprises eleven distinct items all of which measure different facets of the Retailer's ability to provide an appropriate environment for the effective management of e-service quality. However, it can be seen from an inspection of the mean values, that it is the area of 'Explain to Customers', with a mean value of 5.5, in which UK retailers have most fully developed their ESQM operations. Consequently, it is clear that retailers are very keen to use e-commerce to enhance the quality of their customer communications (Srinivasan et al., 2002). Having isolated four distinct ESQM factors, and also three levels of adoption factors (see Appendix A), it was possible to conduct the following four multiple regressions to determine whether the scope of e-commerce adoption has an impact on the practise of ESQM [objective 1]:

1. **Commitment and Resources:** As can be seen from Table 2, the results of the multiple regression between the three levels of adoption and the 'Commitment and Resources' construct, are highly significant [F-value: 71.546 ($p < 0.001$)], and the combination of the variances explains almost 50% of the model's variability. Moreover, an inspection of the data indicates that two of the independent variables [order processing and marketing and promotion] are significantly associated with the Commitment and Resources factor. The most obvious explanation of this result is that as an organisation's level of adoption grows, there is a need for the organisation's management team to more actively provide support to, and resources for, their e-service quality management activities.

2. **Listen to Customers:** The results of the multiple regression, as presented in Table 3, demonstrate a significant relationship between level of adoption and the 'Listen to Customers' factor [F-value: 71.546 ($p < 0.001$)]. Moreover, an inspection of the results indicates that two of the adoption factors [order processing and marketing and promotion] are significantly associated with Listen to Customers factor: as adoption levels

Table 2
The relationships between the adoption factors and *Commitment and Resources*.

Independent variables		β coefficients
Order processing		0.470***
Marketing and promotion		0.226***
Post-purchase support		0.136*
Summary statistics for H4	R^2	0.530
Constant: 0.522	F	71.546; $p < 0.001$

*** $p < 0.001$;
* $p < 0.05$.

Table 3
The relationships between the adoption factors and *Listen to Customers*.

Independent variables		β coefficients
Order Processing		0.368***
Marketing and promotion		0.405***
Post-purchase support		0.072[a]
Summary statistics for H4	R^2	0.486
Constant: 0.202	F	59.963; $p < 0.001$

*** $p < 0.001$.
[a] Non-significant.

Table 4
The relationships between the adoption factors and *Explain to Customers*.

Independent variables		β coefficients
Order Processing		0.314***
Marketing and promotion		0.253***
Post-purchase support		0.007[a]
Summary statistics for H4	R^2	0.631
Constant: 2.545	F	108.783; $p < 0.001$

*** $p < 0.001$.
[a] Non-significant.

increase, so does the need for CRM-oriented e-service quality management strategies.

3. **Explain to Customers**: The results of the multiple regression between the three levels of adoption and 'Explain to Customers' factor. As can be seen from Table 4, the results of this regression model are highly significant [F-value: 108.783 ($p < 0.001$)], and the combination of the variances explains almost 65% of the model's variance. Moreover, an inspection of the data, indicates that two of the adoption factors [order processing and marketing and promotion] are significantly associated with Explain to Customers factor. The most obvious explanation of this result is that as an organisation's level of adoption grows, there is a need for the organisation to manage their customer's expectations and provide appropriate information more proactively.

4. **Continuous Improvement:** The results of the multiple regression, as presented in Table 5, demonstrate a significant relationship between level of adoption and the 'Continuous Improvement' factor [F-value: 44.030 ($p < 0.001$)]. Moreover, an inspection of the results indicates that two of the adoption factors [order processing and marketing and promotion] are significantly associated with the Continuous Improvement factor: as adoption levels increase, so does the need for organisations to continuously improve their e-service quality management processes.

When looking at these results in their entirety it is apparent that there is recurring pattern: as organisations progressively

Table 5
The relationships between the adoption factors and *Continuous Improvement*.

Independent variables		β coefficients
Order Processing		0.490***
Marketing and promotion		0.211**
Post-purchase support		0.057[a]
Summary statistics for H4	R^2	0.410
Constant: 0.760	F	44.030; $p < 0.001$

*** $p < 0.001$;
** $p < 0.01$.
[a] Non-significant.

develop and extend their *order processing* and *marketing and promotional* activities, there appears to be a concomitant need to increase their e-service quality management activities, across all four ESQM factors.

4.3. The relationship between Internet adoption and retailer performance

A further novel element of this study is the measurement of the perceived success of e-commerce strategies, from the retailer's perspective. It can be seen from the mean values, presented in Appendix C, that retailers generally perceive their web operations to have been broadly successful, both in terms of delivering '*operational success*' and '*customer-orientation success*'. Having isolated these two distinct facets of e-commerce success, it was possible to address objective 2 by conducting the following two multiple regressions, to determine whether the three Internet adoption factors, were influencing the realisation of e-commerce benefits:

1. *Operational Benefits*: As can be seen from the results of this analysis (Table 6), a highly significant regression model could be found to explain the success of the retailer, in terms of its *Operational Benefits*. Moreover, the *order processing* and *marketing and promotion'* factors were found to be most significant, in terms of their explanatory power. The combination of the variances explains over 40% of the model's overall variability, and it has a significant *F*-value of 51.733 ($p < 0.001$).
2. *Customer Benefits*: In the case of the analysis of the determinants for '*customer benefits*' to be realised, the most important variables, both in terms of their significance and the strength of their explanatory power, the *order processing* and *post-purchase support'*. As can be seen from the results presented in Table 7, once more, this regression model is highly significant [*F*-value of 83.737 ($p < 0.001$)], and the combination of the variances explains almost 60% of the model's variability.

When looking at these results in their entirety it is apparent that there is recurring pattern: as organisations progressively increase the scope of their operations, their ability to leverage benefits from their on-line activities also generally increases.

4.4. The Relationship between e-service quality management and retailer performance

The final objective [#3] was addressed by conducting the following two multiple regressions, to determine whether the four ESQM factors, were influencing the realisation of e-commerce benefits:

1. *Operational Benefits*: As can be seen from the results presented in Table 8, the combination of the variances explained by this

Table 6
The relationships between *order processing, marketing and promotion*, and *post-purchase support* and *Marketing and Operation'* Success.

Independent variables		*Marketing and Operation's* success β coefficients
Order processing		0.481***
Marketing and promotion		0.305***
Post-purchase support		0.001[a]
Summary statistics for H13	R^2	0.450***
Constant: 0.888	F	51.733; $p < 0.001$

*** $p < 0.001$.
[a] Non-significant.

Table 7
The relationships between *order processing, marketing and promotion*, and *post-purchase support* and *Customer Orientation Success*.

Independent variables		*Customer Orientation Success* β coefficients
Order processing		0.489***
Marketing and promotion		0.260*
Post-purchase support		0.83***
Summary statistics for H13	R^2	0.597***
Constant: 0.857	F	83.737; $p < 0.001$

No.
* $p < 0.05$
  *** $p < 0.001$.

Table 8
The relationships between e-service quality factors and *Marketing and Operations Success*.

Independent variables		Perceived e-commerce success (β)
Commitment and Resources		0.494***
Listen to Customers		0.329***
Explain to Customers		0.273*
Continuous Improvement		0.140[a]
Summary Statistics for H13	R^2	0.609***
Constant: 0.440	F	73.458; $p < 0.001$

*** $p < 0.001$;
* $p < 0.05$.
[a] non-significant.

Table 9
The relationships between e-service quality factors and *Customer Orientation Success*.

Independent variables		Perceived e-commerce success (β)
Commitment and Resources		0.494***
Listen to Customers		0.168*
Explain to Customers		0.368***
Continuous Improvement		0.030[a]
Summary Statistics for H13	R^2	0.720***
Constant: 0.214	F	121.731; $p < 0.001$

*** $p < 0.001$;
* $p < 0.05$.
[a] Non-significant.

regression model is just over 60% of the total variance, with a significant *F*-value of 73.458 ($p < 0.001$). More specifically, three predictors, (*Management Commitment and Resources, Customer Relations Management, Customer Information and Expectation*) show a positive and significant influence on the retailers' e-commerce *Marketing and Operation* success. However, *Management Commitment and Resources* dominates this affect. By contrast, *Continuous Improvement* shows a negative and non significant influence on *Operational Benefits*.

2. *Customer Benefits*: The findings presented in Table 9 are highly significant, in that the combination of the variances explains over 70% of the model, with a significant *F*-value of 121.731 ($p < 0.001$). Three predictors, (*Management Commitment and Resources, Customer Relations Management, Customer Information and Expectation*) show a positive and significant influence on the retailers' e-commerce *Customer Orientation* success. Once more, *Management Commitment and Resources* dominates this affect, whilst the *Continuous Improvement* factor has no significant influence on *Customer Orientation* success.

Overall, from this set of results, it can be concluded that the capacity of retailers to realise both operational and customer-

oriented benefits from their on-line offerings is affected by their ability to actively and effectively manage the quality of their electronic services. In many ways the finding that the retailers' commitment to *Continuous Improvement* does not have any associations with the success of their on-line activities appears to be paradoxical, and it is certainly a result that will need further exploration in follow-up studies.

5. Discussion

As Wu et al. (2014) note, far too much of the current e-commerce research still narrowly focuses on the extent to which the user/end-user/client/customer is satisfied with their on-line experiences. To date, the vast majority of the e-service quality management research has also been guilty of adopting this same narrow perspective. Very large numbers of recent studies have focused explicitly on the relationship between the perceived quality of the service that a customer experienced, when shopping on-line, and their overall satisfaction with the shopping experience (Zeithaml et al., 2002). Whilst such studies have provided many valuable insight they only provide half of the story, as they have very little to say about the way in which electronic service quality is managed within Internet retailers, and how this affects the success of the on-line operations.

In sharp contrast to prior studies, this paper advances our understanding of electronic service quality by delivering a set of important new theoretical insights, based upon the retailers' rather than the customers' perspective. First and foremost, this study has developed and empirically tested the first set of item measures, specifically designed to better understand the Internet retailers' ESQ management practises. Moreover, in applying factor analysis this study has demonstrated that the full set of ESQ measures can be decomposed into four distinct constructs, of which, it is the '*Explaining to Customers*' factor, which is by far the most widely adopted. By contrast, and rather worryingly, the '*Listening to Customers*' construct is the least widely adopted aspect of e-service quality management, amongst our sample of retailers. A second area in which this study makes an important theoretical contribution is in exploring the extent to which retailers provide their customers with a variety of different e-commerce functions, facilities and services. When a multiple regression was used to investigate the relationship between e-service quality and e-commerce adoption constructs, it became apparent that whilst e-service activities appear to grow in parallel with an expansion of the retailer's *order processing* and marketing activities, the same effect has certainly not been witnessed for *post-purchase support* operations. Indeed, it would appear that *post-purchase support* is both the least well developed area of e-commerce adoption, and the least well associated with e-service quality activities This result chimes with a number of prior studies (Kim et al., 2010; Thirumalai and Sinha, 2011; Griffis et al., 2012), which have concluded that whilst most retailers offer fairly sophisticated, on-line, *order processing* and marketing facilities, the provision of post-purchase services is still relatively patchy.

Whilst these first contributions are important, probably the most innovative and significant aspect of our study, is the finding that a proactive approach to the management of service quality, in an e-retailing context, is significantly associated higher levels of business performance. Prior studies have provided ample evidence that the customers' experience of ESQ can significantly affect their satisfaction with, and loyalty towards, the retailer (e.g. Boshoff, 2007; Long and McMellon, 2004; Xu et al., 2013), but this is the first study that has demonstrated that these positive attitudes can be translated into tangible benefits for the e-retailer: a retailer who is proactive in listening/explaining to its customers, and

provides adequate resources to its e-service quality activities is likely to realise far greater benefits from its e-commerce activities. Moreover, this study adds to the on-going debate with regard to the role of organisational change in leveraging benefits from IT implementations. There is a well established body of work to suggest that new information technologies may underperform, or even be rejected, if they are harnessed to existing business process designs, and traditional patterns of employee behaviour (Ashurst et al., 2008; Ward et al., 2008). Consequently, by providing important new evidence that organisations should extend and enhance their ESQM practises in order to leverage the benefits from their e-commerce infrastructure, this study has found a novel environment in which to reinforce the theory of benefits realisation.

Brynjolfsson et al. (2013) argue that the increasing variety and sophistication of mobile devices, which interface to the Internet, and make product price and availability information readily accessible, is making the retailing landscape an increasingly competitive environment. Consequently, it is important that e-retailers take heed of the latest academic research, to help them meet these competitive challenges. Probably the most important implication for retail managers and practitioners, arising from this new study, is that the e-service quality is a wide ranging function, which needs to be proactively managed, if retailers are to get the most from their on-line operations. Moreover, it must be recognised that effective e-service quality management requires strong relationships between the retailer and its customers, to be developed, based upon effective two-way communication, and this will require more than a change in its processes and its technologies. Indeed, as Zwass (Zwass, 2003, p. 6) notes, such relationships will only be established if the retailer can establish a bond of '*trust and loyalty*' with the consumer, and this may well require the organisation to change its culture and attitudes, as well as its processes. Finally, from the researchers' perspective, this study also provides important new insights particularly with regard to the new e-commerce/e-service quality variables and constructs, which might usefully be adopted in future studies.

6. Concluding remarks

This empirical study has applied rigorous statistical methods in the development of a taxonomy of distinct and meaningful service quality and level of adoption factors that have been used to investigate the relative success of e-commerce strategies, within the UK, retail sector. More specifically, it has been demonstrated that retailers need to develop a wide range of e-service quality management practises, if they are to get the most from their e-commerce activities, particularly if they offer a wide range of on-line functions, services and facilities. Such insights are of particular importance at this period of time, when many organisations are still developing or extending their web presence.

Whilst every effort has been made to ensure that this study has been conducted in a thorough and systematic manner, like all forms of social enquiry, it suffers from a number of weaknesses. More specifically, the adoption of the questionnaire format limits the range and depth of questions that can be addressed. Moreover, with survey research there is always the potential for bias associated with the targeting of a single informant and bias that might accrue from targeted organisations failing to respond. Consequently, whist this research presents many interesting new insights, it by no means answers all the questions in this increasingly important research domain. Potentially rewarding avenues for follow-up studies would include the conduct of case studies to explore in far more detail the link between e-service quality practises and the realisation of business benefits. Moreover, it will

be necessary to conduct similar studies, in a range of sectors, within a variety of countries, to identify areas of commonality and variation, in terms of the role of e-service quality and the drivers of e-commerce success.

Appendix A

See Appendix Table A1.

Appendix B

See Appendix Table B1.

Appendix C

See Appendix Table C1.

Table A1
Component loadings for the level of adoption (LEVEL).

	Components		
	1 *Order processing*	**2** *Marketing and promotion*	**3** *Post-purchase support*
Provision of product information (e.g. products specifications, price, etc.)	0.747		
Ordering of goods on-line	0.905		
Processing on-line payment	0.877		
Post-purchase confirmatory email	0.859		
On-line customer service (e.g. after sales customer support complaints, etc.)	0.522		
On-line marketing, including on-line advertising and promotions		0.584	
Targeted promotion of goods/services via email		0.780	
Tailored promotions/offers, for individual customers, via web-site		0.657	
Customers to check on the status of an on-line order (i.e. tracing order progress)			0.631
Cancelling on-line order (returns policy)			0.706
The web-site can be personalised for individual customers			0.723
Cronbach's Alpha	0.91	0.79	0.72
Eigenvalues	6.19	1.35	1.002
% of variances	51.64	11.26	8.35
Mean values	5.8784	4.8595	3.6271

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation; Rotation converged in 6 iterations.

Table B1
Factor loadings for the management approaches to e-service quality.

	Component			
	1 *Commitment and Resources*	**2** *Listening to Customers*	**3** *Explaining to Customers*	**4** *Continuous Improvements*
Customers are explicitly informed of the level of service they should expect			0.657	
Our web-sites security features are clearly communicated to our customers			0.784	
The privacy policy, with respect to all on-line transactions, is made clear to customers			0.759	
Every customer complaint is thoroughly investigated and swiftly addressed			0.702	
All on-line customer data is regular evaluated to better understand their needs		0.770		
On-line services are often modified in direct response to customer suggestions.		0.679		
Customers' perceptions of the quality of our electronic services are regularly sought.		0.732		
An explicit *Continuous Improvement* programme has been established				0.574
A designated person or group exists to explicitly manage e-service quality				0.784
Clearly defined metrics are used to monitor all e-commerce related activities				0.604
Improving the quality of e-services is regularly on managers agenda	0.651			
New technologies and practises are used to enhance the company's e-service quality	0.702			
Managers at all levels actively participate in e-service management	0.787			
Senior managers take a direct interest in the effort to identify causes of poor service	0.729			
A reliable IT infrastructure ensures that all e-commerce activities are well integrated	0.682			
Adequate financial resources are made available to fund the web sites	0.611			
Sufficient human resources are available to deliver high levels of customer service	0.719			
Roles and responsibilities are clearly defined for all e-commerce related activities	0.663			
Training is in place, to ensure that all personnel can conduct their responsibilities	0.654			
Feedbacks on the quality of e-services are regularly communicated to all personnel	0.609			
E-service quality has become an integral part of the company's business strategy	0.629			
Cronbach's Alpha	**0.95**	**0.86**	**0.90**	**0.84**
Eigen values	**12.461**	**1.255**	**1.044**	**1.020**
% of variances	**59.338**	**5.976**	**4.972**	**4.859**
Mean values	**4.6073**	**4.2474**	**5.4845**	**4.6890**

Extraction Method**:** Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation;
Rotation converged in 10 iterations.

Table C1
Perceived e-commerce success (*SUCCESS*).

	Component	
	1 **Market and Operation's success**	**2** *Customer Orientation* **success**
Increase in our company's market share	0.832	
Increase in our company's profit	0.891	
Increase in our company's sales	0.862	
Improve in our company's ability to acquire new customers	0.729	
Increase in our company's customer retention	0.666	
Reduce in our company's business operating costs	0.690	
Improve in our company's operational efficiency	0.750	
Improved our company's competitiveness in the marketplace	0.695	
Facilitate our company in developing new business opportunities		0.714
Provide our company the opportunity to capture a richer variety of customers information		0.757
Enhance our company's access to a wider range of customers (e.g. global markets)		0.779
Enhance our company's opportunity to develop and manage long-term customer relationships		0.764
Improve in our company's quality of service to customers		0.710
Improve in our company's quality of customer communications		0.736
Increase our company's trading hours e.g. 24 h a day 365 days a year		0.559
Enhance our company's potential to market a wider product range		0.622
Reduce our company's need for future investment in fixed location stores		0.693
Cronbach's Alpha	**0.96**	**0.94**
Eigenvalues	**11.581**	**0.979**
% of variances	**68.122**	**5.761**
Mean values	4.955	5.0384

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation; Rotation converged in 3 iterations.

References

Aguila-Obra, A.R.D., Padilla-Meléndez, A., 2006. Organizational factors affecting Internet technology adoption. Internet Res. 16 (1), 91–110.

Armstrong, J.S., Overton, T.A., 1982. Estimating non-response bias in mail surveys. In: Jain, A., Pinson, C., Ratchford, B. (Eds.), Marketing Research: Applications and Problems. John Wiley & Sons, Chichester.

Ashurst, C., Doherty, N.F., Peppard, J., 2008. Improving the impact of IT development projects: the benefits realization capability model. Eur. J. Inf. Syst. 17, 352–370.

Basu, A., Muylle, S., 2003. Online support for commerce processes by web retailers. Decis. Support Syst. 34 (4), 379–395.

Boshoff, C., 2007. A Psychometric Assessment of E-S-QUAL: A Scale to Measure Electronic Service Quality. Journal of Electronic Commerce Research 8 (1), 101–114.

Bryman, A., Bell, E., 2007. Business Research Methods, 2nd ed. Oxford University Press, Oxford.

Brynjolfsson, E., Hu, Y.J., Rahman, M.S., 2013. Competing in the age of omnichannel retailing. MIT Sloan Manag. Rev. 54 (4), 23–29.

Cândido, C.J.F., Morris, D.S., 2000. Charting service quality gaps. Total Qual. Manag. 11 (4), 463–472.

Chiu, C.M., Wang, E.T.G., Fang, Y.H., Huang, H.Y., 2012. Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk. Inf. Syst. J.

Chen, M.C., Chang, K.C., Hsu, C.L., Yang, I.C., 2011. Understanding the relationship between service convenience and customer satisfaction in home delivery by Kano model. Asia Pac. J. Market. Logist. 23 (3), 386–411.

Chen, J.V., Yen, D.C., Pornphiphet, W., Widjaja, A.E., 2014. E-commerce web site loyalty: a cross cultural comparison. Inf. Syst. Front., 1–17.

Chong, S., Pervan, G., 2007. Factors influencing the extent of deployment of electronic commerce for small- and medium-sized enterprises. J. Electron. Commer. Organ. 5 (1), 1–29.

Clements, A., (2011) 'UK Will Lead Ecommerce Sales in Europe for Next Five Years Says Forrester', Internet Retailing, available at: http://www.internetretailing.net/2011/03/uk-will-lead-ecommerce-sales-ineurope-for-next-five-years-says-forrester/, Access Date: 27th April, 2011.

Cockburn, C., Wilson, T.D., 1996. Business Use of the World Wide Web. International Journal of Information Management 16 (2), 83–102.

Cristobal, E., Flavián, C., Guinalíu, M., 2007. Perceived e-service quality (PeSQ): measurement validation and effects on consumer satisfaction and web site loyalty. Manag. Serv. Qual. 17 (3), 317–340.

Daniel, E.M., Grimshaw, D.J., 2002. Adoption intention and benefit realised: a study of e-commerce in UK SMEs. J. Small Bus. Enterp. Dev. 9 (4), 331–348.

DeLone, W., McLean, E.R., 2004. Measuring e-commerce success: applying DeLone and McLean model of information systems success. Int. J. Electron. Commer. 9 (1), 31–47.

DeVellis, R., 2003. Scale Development: Theory and Applications. Sage, Thousand Okas, CA.

Dillman, D.A., 2007. Mail and Internet surveys: the tailored design method, 2nd ed. John Wiley and Sons, Chicester.

Doherty, N.F., Ellis-Chadwick, F.E., Hart, C., 2003. An analysis of the factors affecting the adoption of the internet in the UK retail sector. J. Bus. Res. 56, 887–897.

Doherty, N.F., Ellis-Chadwick, F.E., 2009. Exploring the drivers, scope and perceived success of e-commerce strategies in the UK retail sector. Eur. J. Market. 43 (9/10), 1246–1262.

Doherty, N.F., Ellis-Chadwick, F., 2010. Internet retailing: the past, the present and the future. Int. J. Retail Distrib. Manag. 38 (11/12), 943–965.

Duffy, D., 2004. Multi-channel marketing in the retail environment. J. Consum. Market. 21 (5), 356–359.

Duncan, E., Elliott, G., 2002. Customer service quality and financial performance among Australian retail financial institutions. J. Finan. Serv. Market. 7 (1), 25–41.

Ellis-Chadwick, F., Doherty, N.F., Hart, C.A., 2002. Signs of change? A longitudinal study of Internet adoption in the UK retail sector. J. Retail. Consum. Serv. 9 (2), 71–80, March.

eMarketer, 2014. ⟨http://www.emarketer.com/Article/Global-B2C-Ecommerce-Sales-Hit-15-Trillion-This-Year-Driven-by-Growth-Emerging-Markets/1010575⟩.

Evanschitzky, H., Gopalkrishnan, R., Hesse, J., Dieter, A., 2004. E-satisfaction: a re-examination. J. Retail. 80, 239–247.

Flynn, B.B., Schroeder, R.G., Sakakibara, S., 1995. Determinants of quality performance in high and low qualityplants. Qual. Manag. J. 2 (2), 8–25.

Ghobakhloo, M., Arias-Aranda, D., Benitez-Amado, J., 2011. Adoption of e-commerce applications in SMEs. Ind. Manag. Data Syst. 111 (8), 1238–1269.

Golden, W., Hughes, M., Gallagher, P., 2004. Online retailing: evidence from Ireland. J. End-user Comput. 15 (3), 32–44.

Goode, M.M., Harris, L.C., 2007. Online behavioural intentions: an empirical investigation of antecedents and moderators. Eur. J. Market. 41, 512–536.

Griffis, S.E., Rao, S., Goldsby, T.J., Niranjan, T.T., 2012. The customer consequences of returns in online retailing: An empirical analysis. J. Oper. Manag. 30 (4), 282–294.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., 2010. Multivariate Data Analysis: A Global Perspective, 7th eds. Pearson Education Inc.: Upper Saddle River, New Jersey.

Hinton, M., Barnes, D., 2009. Discovering effective performance measurement for e-business. Int. J. Prod. Perform. Manag. 25 (4), 329–345.

Hsu, P., Kraemer, K.L., Dunkle, D., 2006. Determinants of e-business use in U.S. Firms. Int. J. Electron. Commer. 10 (4), 9–45.

Kassim, N.M., Abdullah, N.A., 2010. The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: a cross cultural analysis. Asia Pac. J. Market. Logist. 22 (3), 351–371.

Kim, J., Jin, B., Swinney, J.L., 2009. The role of etail quality, e-satisfaction and e-trust in online loyalty development process. J. Retail. Cons. Serv. 16 (4), 239–247.

Kim, J.U., Kim, W.J., Park, S.C., 2010. Consumer perceptions on web advertisements and motivation factors to purchase in the online shopping. Comput. Hum. Behav. 26 (5), 1208–1222.

Korgaonkar, P., O'Leary, B., 2008. Product, marketing and web site attributes discriminating between successful and failed internet businesses. J. Internet Commer. 7 (4), 485–512.

Ladhari, R., 2010. Developing e-service quality scales: a literature review. J. Retail. Cons. Serv. 17 (6), 464–477.

Liao, C.-H., Yen, H.R., Li, E.Y., 2011. The effect of channel quality inconsistency on the association between e-service quality and customer relationships. Internet Res. 21 (4), 458–478.

Long, M., McMellon, C., 2004. Exploring the determinants of retail service quality on the Internet. J. Serv. Market. 18 (1), 78–90.

Lunce, S., Lunce, L., Kawai, Y., Balaundrum, M., 2006. Success and failure of pure-play organisations: webcan versus peapod, a comparative analysis. Ind. Manag. Data Syst. 106 (9), 1344–1358.

Madu, C.N., Kuei, C., Jacob, R.A., 1996. An empirical assessment of the influence of quality dimensions on organizational performance. Int. J. Prod. Res. 34 (7), 1943–1962.

Malhotra, N.K., Birks, D.F., 2007. Marketing Research: An Applied Approach, 3rd ed. Pearson Education Ltd., Essex.

O'Keefe, R.M., O'Connor, G., Kung, H.J., 1998. Early adopters of the web as a retail medium: small company winners and losers. Eur. J. Market. 32 (7/8), 629–643.

Pallant, J., 2007. SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS for Windows, 3rd ed. Open University Press Mc-Graw Hill Education, Berkshire.

Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1988. SERVQUAL—a multiple-item scale for measuring consumer perceptions of service quality. J. Retail. 64 (1), 12–40.

Parasuraman, A., Zeithaml, V.A., Malhotra, A., 2005. ES-QUAL a multiple-item scale for assessing electronic. J. Serv. Res. 7 (3), 213–233.

Rao, S., Griffis, S.E., Goldsby, T.J., 2011. Failure to deliver? Linking online order fulfilment glitches with future purchase behavior. J. Oper. Manag. 29 (7), 692–703.

Rodríguez-Ardura, I., Meseguer-Artola, A., 2010. Toward a longitudinal model of e-commerce: environmental, technological, and organizational drivers of B2C adoption. Inform. Soc. 26 (3), 209–227.

Rowley, J., 2006. An analysis of the e-service literature: towards a research agenda. Internet Res. 16 (3), 339–359.

Rust, R.T., Zahorik, A.J., Keiningham, T.L., 1995. Return on quality (ROQ): making service quality financially accountable. J. Market. 59 (2), 58–70.

Schibrowsky, J.A., Peltier, J.W., Nill, A., 2007. The state of internet marketing: a review of the literature and future research directions. Eur. J. Market. 41 (7/8), 722–733.

Srinivasan, S.S., Anderson, R., Ponnavolu, K., 2002. Customer loyalty in e-commerce: an exploration of its antecedents and consequences. J. Retail. 78 (1), 41–50.

Spiller, P., Lohse, G.L., 1997. A classification of Internet retail stores. Int. J. Electron. Commer. 2 (2), 29–56.

Tan, K.C., Handfield, R.B., Krause, D.R., 1998. Enhancing firm's performance through quality and supply base management: an empirical study. Int. J. Prod. Res. 36 (10), 2813–2837.

Thirumalai, S., Sinha, K.K., 2011. Customization of the online purchase process in electronic retailing and customer satisfaction: an online field study. J. Oper. Manag. 29 (5), 477–487.

Teo, T.S.H., Tan, J.S., 2002. Senior executives' perception of business-to-consumer (B2C) online marketing strategies: the case of Singapore. Internet Res.: Electron. Netw. Appl. Policy 12 (3), 258–275.

To, M.L., Ngai, E.W., 2006. Predicting the organisational adoption of B2C e-commerce: an empirical study. Ind. Manag. Data Syst. 106 (8), 1133–1147.

Vrechopoulos, A., O'Keefe, R., Doukidis, G., Siomkos, G., 2004. Virtual store layout: an experimental comparison in the context of grocery retail. J. Retail. 80 (1), 13–22.

Ward, J., Daniel, E., Peppard, J., 2008. Building a better business case for IT Investments. MIS Q. Exec. 7 (1), 1–14.

Wilde, S.J., Kelly, S.J., Kelly, J., 2004. An exploratory investigation into e-tail image attributes important to repeat to Internet savvy customers. J. Retail. Consum. Serv. 11, 131–139.

Wolfinbarger, M., Gilly, M.C., 2003. eTailQ: dimensionalizing, measuring and predicting etail quality. J. Retail. 79, 183–198.

Wu, M., Gide, E., Jewell, R., 2014. The EBS management model: an effective measure of e-commerce satisfaction in SMEs in the service industry from a management perspective. Electron. Commer. Res. 14 (1), 71–86.

Xu, J.D., Benbasat, I., Cenfetelli, R.T., 2013. Integrating with system and information quality: an empirical test in the e-service context. Manag. Inf. Syst. Q. 37 (3), 777–794.

Zeithaml, V.A., 2000. Service quality, profitability, and the economic worth of customers: what we know and what we need to learn. Journal of the academy of marketing science 28 (1), 67–85.

Zeithaml, V.A., Berry, L.L., Parasuraman, A., 1996. The behavioral consequences of service quality. J. Market. 60, 31–46.

Zeithaml, V.A., Parasuraman, A., Malhotra, A., 2002. Service quality delivery through web sites: a critical review of extant knowledge. J. Acad. Market. Sci. 30, 362–410.

Zhuang, Y., Lederer, A.L., 2003. An instrument for measuring the business benefits of e-commerce retailing. Int. J. Electron. Commer. 7, 65–99.

Zwass, V., 2003. Electronic commerce and organizational innovation: aspects and opportunities. Int. J. Electron. Commer. 7 (3), 7–37.