2009

An empirical exploration of requirements engineering for hybrid products

Stuart Barnes
University of East Anglia, Stuart.barnes@uea.ac.uk

Richard Vidgen
University of Bath, richard@videgen.com

AN EVALUATION OF USER ACCEPTANCE OF A CORPORATE INTRANET

Barnes, Stuart, Norwich Business School, University of East Anglia, Norwich NR4 7TJ, UK, stuart.barnes@uea.ac.uk

Vidgen, Richard, School of Management, University of Bath, Bath BA2 7AY, UK, richard@vidgen.com

Abstract

Intranets represent an important organisational resource for knowledge sharing. However, as yet, there has been little research into the quality of intranets and the impact of quality on intranet user acceptance. In the study reported in this paper, an intranet quality assessment tool comprising the dimensions usability, design, and information quality, is combined with perceived usefulness and social influence from the technology acceptance literature to create an intranet acceptance model. The model is applied to the sales and marketing division of an international manufacturing company. Data is collected via a Web survey (n=131, response rate = 65.5%) and tested using the partial least squares approach to structural equation modelling. The results show that intranet quality is a significant factor in determining behavioural intention to use, although it is less important than perceived usefulness and social influence. Comments collected from respondents are used to illustrate the findings and provide an insight into user behaviour. The discussion considers the implications, future research (e.g., the role of social influence in intranet usage) and limitations. The paper rounds off with a short summary.

1   INTRODUCTION AND BACKGROUND TO THE RESEARCH

While the Internet allows organizations to reach new markets and new consumers the corporate intranet represents a key medium for access to organizational memory and to company and product information. Skok and Kalmanovitch (2005) see intranets in the context of the larger issue of knowledge sharing, identifying three views of the role of the intranet: cognitivistic, connectionist, and autopoietic. The cognitivistic view sees the intranet as a culturally and socially neutral repository of explicit information. The connectionist sees the intranet as a tool that brings communities together to share and interpret information, making hidden organizational information locatable. The autopoietic view of an intranet recognizes that much knowledge is tacit and the role of the intranet is to provide data that helps identify relevant staff to contact. Notwithstanding the fact that researchers may debate the finer distinctions of data, information, and knowledge the intranet, as a technical artefact, undoubtedly has a role to play in knowledge sharing and the quality of the intranet would be expected to contribute to intranet acceptance and ultimately to the effectiveness of knowledge sharing.

There is a surfeit of research literature with respect to evaluating the quality and user acceptance of Web sites on the public Internet and e-commerce applications, adopting a range of approaches and theoretical bases. For example, Liu and Arnett (2000) highlight four factors in Web site quality: information and service quality, system use, playfulness, and system design quality. Yoo and Donthu (2001) developed the SITEQUAL scale to measure the perceived quality of an online shop, leading them to identify four dimensions: ease of use, aesthetic design, processing speed and security. Barnes and Vidgen (2002) developed the eQual scale with five dimensions: usability, design, information, trust, and empathy. Loiacono et al. (2002) created the WebQual™ scale, composed of thirty-six items and twelve dimensions: informational fit to task; interactivity; trust; response time; design appeal; intuitiveness; visual appeal; innovativeness; flow (emotional appeal); integrated communication; business process; and substitutability. Further, Parasuraman et al. (2005) developed the e-SQ scale with seven dimensions of service quality: efficiency, system availability, fulfilment, privacy, responsiveness, compensation and contact.

A range of theoretical bases for Web quality evaluation have been drawn upon in the salient literature, including the technology acceptance model, service quality/marketing, and information systems success. These approaches are typically supplemented with items from ancillary areas such as human computer action and information quality. Typical dependent variables are intention to use, intention to purchase or re-purchase, loyalty, and overall satisfaction.

Compared with the research on Web site and e-commerce quality and acceptance there is, in comparison, a dearth of research on the evaluation of intranet effectiveness. Following many years of studying intranets Stenmark (2005) finds that intranets differ from the public Internet insofar as content is provided top-down by a small group of professionals, content is objective and business-related, and content is organized consistently according to a corporate taxonomy. Stenmark (ibid.) says that the latter is a source of weakness in intranets, which can be difficult to search and navigate as they are seldom built from the consumer's perspective. The intranet exists in an environment with a formal organization structure and a management hierarchy that is absent in an e-commerce application and we would thus expect social influence to play a significant role in intranet use. Coming from a quality perspective, Leung (2001) draws on the ISO model and evaluates the intranet as a software artefact using the dimensions of functionality, reliability, usability, efficiency, maintainability, and portability.

Previous research on intranet quality and acceptance is clearly very limited. Thus, we perceive an important gap that deserves further research attention. The aim of this paper is to show how the effectiveness of an intranet can be assessed in terms of outcomes, principally in performance effectiveness (i.e., how useful is the intranet in supporting organizational work) and intention to use. Our approach is the development and testing of a model of intranet acceptance. The model is

subsequently tested in a real case study setting of a major multinational organisation. Data is collected using a survey and analysed using the partial least squares approach to structural equation modelling.

In the next section we explicate a model and theory developed to contribute understanding in this very new area of investigation. This is followed by a discussion of the methodology adopted for the study. Consequently, the research results - quantitative and qualitative analysis of respondent comments - are examined in section four. The findings, implications for research and practice, and limitations of the research are discussed in section five. Finally, the paper rounds off in the last section with a summary.

2 MODEL AND HYPOTHESES

In this section we describe the theoretical model adopted for the study. We discuss this in two parts: (1) intranet quality assessment; and (2) intranet acceptance and associated constructs. Let us examine each of these in turn.

2.1 Intranet quality

The eQual instrument (Barnes and Vidgen, 2002) identified five dimensions of Web quality: usability, design, information, empathy, and trust. Of these five dimensions empathy consistently scores lower in terms of importance in e-commerce applications and is also unlikely to play a major role in a corporate setting where there will be at least a degree of uniformity of corporate culture. Although trust is a key factor in e-commerce, in a corporate setting trust is implied through the corporate and closed setting of the intranet. We thus focus on usability, design, and information quality in constructing an instrument to assess the quality of an intranet.

The usability dimension draws from literature in the field of human computer interaction (Davis, 1989, 1993, Nielsen, 1993) and information systems quality (Bailey and Pearson, 1983) while the design dimension draws on Web usability (Nielsen, 1999, 2000, Spool, 1999) and service quality (Parasuraman et al. 1991, Zeithaml et al., 1990). Information quality follows Strong et al. (1997) with provenance in the work on IS quality and IS success by Bailey and Pearson (1983) and DeLone and McLean (1992). In summary, intranet quality is expressed using the dimensions usability, design and information quality (see Barnes and Vidgen (2002) for further details of the provenance of the intranet quality items). We expect, as from previous research, for the quality construct to appear as a second-order combination of these three first-order constructs and we hypothesise the following:

H1. Intranet quality is positively related to behavioural intention to use an intranet.

2.2 Intranet acceptance

Although intranet quality would be expected to impact behavioural intention to use the intranet it is clear from the literature that other factors will likely play a part. In his seminal paper on technology acceptance, Davis (1989) defines perceived usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance" (p. 320). In a later version of the model, TAM2, Venkatesh and Davis (2000) included the construct "subjective norm", which considers social influence as the extent to which an individual perceives that people important to him or her think he or she should or should not perform a behaviour, such as using an intranet. Latterly, the unified theory of acceptance and use of technology (UTAUT) brings these strands together in a large and wide-ranging instrument (Venkatesh et al., 2003). Despite its grand scale the explanatory and predictive power of the UTAUT in a broad range of contexts has yet to be fully demonstrated.

Part of our research agenda is to produce an instrument suitable for use in the corporate world where lengthy surveys are likely to be ignored. We therefore happily accepted the requirement that the instrument be parsimonious in terms of the number of items and we are, in a way, getting back to the

simplicity and elegance of the original TAM. First and foremost, an intranet must be useful to employees in doing their jobs. Second, we argue that social influence in the form of senior managers, peers, and co-workers will also play a key role in intention to use. From the TAM/UTAUT we therefore hypothesise:

H2. Social influence is positively related to behavioural intention to use an intranet.

H3. Perceived usefulness is positively related to behavioural intention to use an intranet.

Finally, behavioural intention is expected to have an influence on actual usage, hence:

H4. Behavioural intention is positively related to actual intranet use.

The above hypotheses contribution to the construction of the research model, as shown in Figure 1.
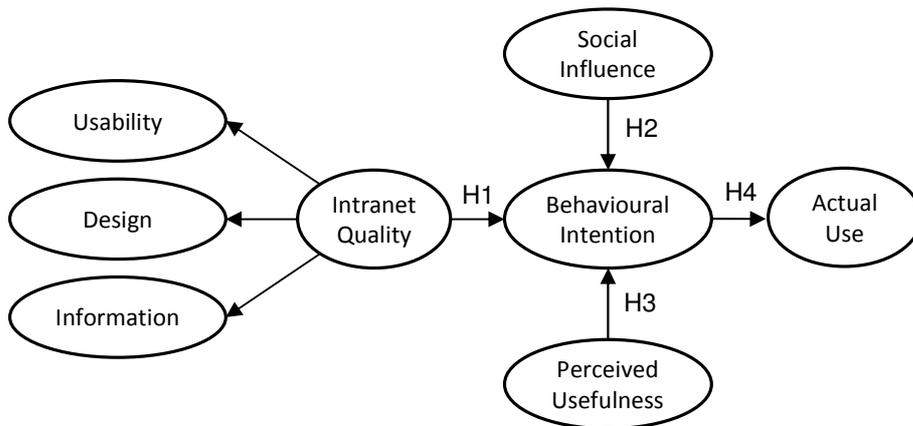
Figure 1.   *Research Model*

3   METHODOLOGY

To test the research model we worked with the sales and marketing division of a multi-national manufacturing company, which will be referred to pseudonymously here as *SalesOrg*. The company had recently employed a Web design agency to build a new intranet site to support their sales and marketing operations. The old intranet was fragmented in terms of design and content and was not widely adopted by the sales and marketing teams. The organization now wished to create a single and enhanced repository of sales and marketing data containing material about SalesOrg's values, processes, and methods along with tools and templates, case studies, best practice examples, news items, resources (e.g., product information), and e-learning units. In sum, the new intranet is to be a single point of access for all the formalized resources that all personnel working in sales and marketing need to draw on to do their job effectively. The survey reported here was conducted three months after the initial intranet implementation.

The survey was implemented online and pilot tested with a small group to check that the questions were comprehensible and the survey easy to complete. Responses to the pilot survey showed that it was relevant and comprehensible and SalesOrg agreed to roll the survey out to a wider audience in February 2008. The survey questions are shown in the Appendix. For the items in Table 1 five-point Likert scales were used with the anchors "1 = strongly disagree" and "5 = strongly agree". Respondents were allowed to select "not applicable" to avoid forcing responses. Actual use was measured using a single item, "In an average week, how much time would you say you spend connected to the Intranet (for any kind of service and counting all the possible sessions over the week)?", with responses as "1=Don't use it at all", "2=Less than 15 minutes", "3=Between 15 minutes and 30 minutes", "4=Between 30 minutes and 1 hour", "5=Between 1 and 2 hours", "6=Between 2

and 4 hours", "7=Between 4 and 10 hours" and "8=More than 10 hours" (mean=3.66, standard error=0.139). The survey was implemented online and publicised by email to the 200 members of the SalesOrg division. A total of 131 usable responses were received, representing a respectable response rate of 65.5%.

Data analysis was performed using a variance maximization approach to structural equation modelling (SEM) and associated statistics for validity and reliability. More specifically, we used the partial least squares (PLS) technique with reflective indicators in Smart-PLS 2.0 (Ringle et al. 2005). The PLS technique has become increasingly popular in information systems research, marketing and in management research more generally in the last decade or so, influenced by its flexibility; indeed, PLS does not have the same distributional assumptions of normality for data and is able to handle small- to medium-sized samples (Chin 1998, Compeau & Higgins 1995).

SEM caters for two types of analysis: construct and measurement. The construct model is used to assess the structure of the observed and latent variables (e.g., do the three survey items capture the latent variable "Perceived Usefulness"?). The measurement model considers the hypothesised relationships, or paths, between the variables and latent variables, e.g., is the relationship between intranet quality and behavioural intention significant and if so how strong is the relationship?

4 RESULTS

4.1 Characteristics of survey respondents

Of the 131 usable responses to the survey, 63.36% were male (36.64% female), with approximately half being in the median age range of 36 to 45 years of age (48.09%). The respondents were very experienced employees in the sales and marketing profession with 69.47% having more than 10 years experience (90.84% over 5 years). Similarly, the employees had been with the company for quite some time, with more than half over 10 years and 81.68% over 5 years. The respondents were only moderate users of the Internet, with a median of 4-10 hours per week spent connected to the Internet in an average week. The use of the intranet in an average week was generally quite low, with around three-quarters of users using it for less than an hour (74.81%) and a median of 15 to 30 minutes.

4.2 Tests for Validity and Reliability of the Measures

To test the constructs we performed a confirmatory factor analysis and reliability analysis. Table 1 demonstrates that the scale items exhibit high levels of convergent validity – the extent to which theoretical scale items are empirically related. The loadings of the measures on their respective constructs in the model range from 0.756 to 0.930, with all being significant at the 0.1% level.

Table 1 also demonstrates that all of the constructs fulfil the recommended levels with reference to composite reliability (CR) and average variance extracted (AVE). All items were higher than the cut-off of 0.50 for AVE recommended by Fornell and Larcker (1981), ranging from 0.607 to 0.802. Similarly, the values for composite reliability are very good, ranging from 0.882 to 0.948, well above the reliability values of 0.70 and 0.80 that are typically advised for building strong measurement constructs (Nunnally 1978, Straub & Carlson 1989).

As an additional test for discriminant validity we utilized the cross-loading method of Chin (1998). The method prescribes a requirement for measurement items to load higher on a construct than the scale items for other constructs and for no cross-loading to occur. Item loadings in the relevant construct columns were all higher than the loadings of items designed to measure other constructs; similarly, when glancing across the rows the item loadings are considerably higher for their corresponding constructs than for other constructs. Note that the three first-order constructs for

intranet quality, usability, design and information quality all loaded on a single second-order construct, as expected. This underlines the point that intranet quality is a holistic concept in its own right.

Table 2 examines the extent to which question items measure the construct intended or other related constructs, otherwise known as discriminant validity. Fornell and Larcker's (1981) standard test for discriminant validity was used, whereby the square root of average variance extracted for each construct is compared with the correlations between it and other constructs; discriminant validity is demonstrated if the square root is higher than the correlations. Table 2 clearly indicates that each construct shares greater variance with its own measurement items than with other constructs with different measurement items, and with a good margin of difference.

Construct	Item	Loading	Mean	St. Error	t-value
Behavioural Intention					
CR=0.919	Behavioural Intention1 (BI1)	0.867	4.05	0.079	21.698
AVE=0.790	Behavioural Intention2 (BI2)	0.889	4.20	0.075	29.436
	Behavioural Intention3 (BI3)	0.910	4.21	0.071	40.815
Intranet Quality (Second Order Factor; CR=0.948, AVE=0.607)					
Usability	Usability 1 (USE1)	0.878	4.29	0.064	33.185
CR=0.924	Usability 2 (USE2)	0.862	4.26	0.062	26.555
AVE=0.751	Usability 3 (USE3)	0.852	4.17	0.071	22.444
	Usability 4 (USE4)	0.874	4.19	0.060	34.851
Design	Design 1 (DES1)	0.789	4.15	0.073	14.135
CR=0.880	Design 2 (DES2)	0.867	4.07	0.066	35.333
AVE=0.648	Design 3 (DES3)	0.770	4.19	0.068	12.634
	Design 4 (DES4)	0.792	4.34	0.059	14.357
Information	Information 1 (INFO1)	0.873	4.32	0.062	33.496
CR=0.900	Information 2 (INFO2)	0.807	3.91	0.078	22.979
AVE=0.694	Information 3 (INFO3)	0.810	3.98	0.073	16.279
	Information 4 (INFO4)	0.840	4.21	0.064	25.893
Perceived Usefulness					
CR=0.924	Perceived Usefulness 1 (PU1)	0.856	3.91	0.075	24.260
AVE=0.802	Perceived Usefulness 2 (PU2)	0.930	4.05	0.074	45.594
	Perceived Usefulness 3 (PU3)	0.900	4.29	0.069	53.889
Social Influence					
CR=0.882	Social Influence 1 (SOCIAL1)	0.804	3.66	0.096	15.815
AVE=0.651	Social Influence 2 (SOCIAL2)	0.847	3.72	0.095	25.196
	Social Influence 3 (SOCIAL3)	0.756	3.32	0.097	11.966
	Social Influence 4 (SOCIAL4)	0.817	3.78	0.088	22.475
Note: CR=Composite Reliability; AVE=Average Variance Extracted; n=131.					

Table 1: Psychometric Table of Measurements

Overall, the results of testing for validity and reliability are very positive and provide us with a high degree of confidence in the scale items used in the study.

	ACTUAL				
	USE	BI	PU	SOCIAL	QUALITY
ACTUAL USE	*n.a.*				
BI	0.315	*0.889*			
PU	0.297	0.671	*0.896*		
SOCIAL	0.244	0.600	0.525	*0.807*	
QUALITY	0.081	0.577	0.667	0.404	*0.777*

Table 2: Correlations between Constructs (diagonal elements are square roots of average variance extracted)

4.3   Test of the Research Model

The results of PLS path modelling are shown in Figure 2 (intranet quality is included as a second-order construct). A power analysis in G*Power 3.0 (Faul et al. 2007) shows that the sample size (n=131) has good power for explaining medium population effects (f^2=0.15; α=0.05; 1-β=0.95), and is thus suitable for the testing of the model under these conditions. The results show strong support for the theoretical research model. Indeed, all paths in the model are supported at the 1 percent level of significance or higher. Specifically, the results show that H1 (the influence of quality on behavioural intention to use the intranet) is supported at the $p<0.01$ level and that H2, H3, and H4 are supported and significant at the $p<0.001$ level. The strongest determinant of the behavioural intention to use the SalesOrg intranet is perceived usefulness (β=0.365) followed closely by social influence (β=0.327) and lastly by a slightly weaker intranet quality (β=0.201).
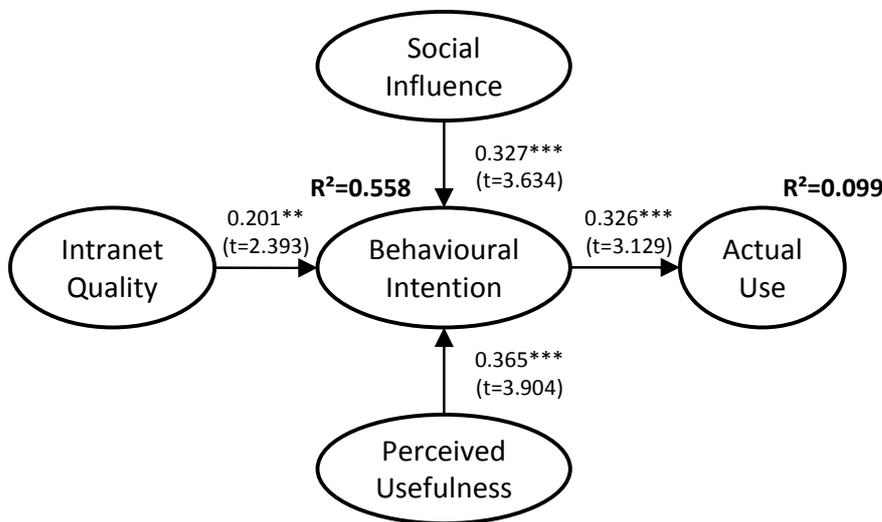
*Figure 2.   Results of PLS Path Analysis (** denotes p<0.01, *** denotes p<0.001)*

Overall, the model explains a very substantial 55.8% of the variance in behavioural intention to use the intranet and thus compares favourably with the explanatory power of previous technology acceptance studies. The explanation for actual use is more modest (R^2=0.099), but nevertheless represents a significant finding. Employees of SalesOrg use the intranet based on behavioural intentions which are in turn driven by the perceived value of using the system in terms of its usefulness, the encouragement of significant others in the workplace and the perceptions of the overall quality of the intranet (measured here using the intranet quality instrument).

4.4   Analysis of comments

The quantitative data shows that the intranet was particularly well received by the users in the sample with the quality average score being 4.167 (standard error=0.051) where the maximum, 5, represents "strongly agree". Table 1 shows that the evaluations for each of the quality scale items were well over the neutral point (neutral=3), with the three constructs averaging 4.227, 4.188 and 4.104 for usability, design and information respectively. It seems that the intranet was particularly well received as a

technical artefact and this view is supported by the open comments that respondents supplied as part of the survey. For example:

"Many thumps [sic] up for a remarkable revamp of the site"

"The site provides accurate and important information that helps to improve the training strategy it is been implemented in my country, it is friendly and easy to use."

"Great Tool!"

Although some reservations were expressed about the quality of the site with respect to performance - "It's slow to download files" and "site hangs once in a while from our end" - the overwhelming view of the site, as expressed through the Likert scores and accompanying comments, is positive.

The great majority of comments related to the usefulness of the site and in particular the contribution to forms of knowledge sharing. All were positive about the usefulness of the intranet and just a few are included here for illustration:

"I consider the [SalesOrg] intranet site a very comprehensive resource center for sales trainers."

"The [SalesOrg] site has been useful resource to me in my day to day job. It helps to widen my knowledge and new ideas to implement in local countries."

"[SalesOrg] material is a unique contribution to our professional development. The website has finally made the workshop materials available for reference and dissemination within the local teams."

"I really find the [SalesOrg] site a complete library of learning. It has given me so much help in crafting my training plans for my team."

"We find the site very useful to us. We get to know more about the best practices of other countries."

The respondents also highlighted areas for development, including translation into other languages (most notably into Spanish) and concerns were raised about the need to update the content of the intranet more frequently.

With regard to social influence, there was strong agreement amongst respondents that the site could be promoted more effectively:

"the site is not marketed very properly".

"Site has not been promoted to me discovered it by chance because Pam mentioned it to me."

"I think senior management is not truly aware of [SalesOrg] website. There are many programs in Sales and Marketing areas that could be helpful, but in my own experience, outside my department (Training and Development), nobody has commented me something, about this site."

"I think in our area marketing the site need to be taken more seriously and sessions for clarification for users should be conducted plus that senior managers should indorse this initiative and ask their teams to use."

Some of the respondents were first time or relatively new users and the quality survey proved to be a useful way of promoting the SalesOrg intranet site:

"We find the site very useful and attractive, however we must admit that we did not use it much due to lack of time. Our intention is to increase the time of navigation in order to take advantage of all of the contents of the site."

"I have not used the Site, feel it can add value, will endeavour to use in the future."

5   DISCUSSION

The results show that the quality construct is robust and is a reliable measure of intranet quality. Unsurprisingly, perceived usefulness is the strongest indicator of intention to use the intranet, followed by social influence. Quality is significant but does not have as large an impact on intention to use as do social influence and perceived usefulness. We speculate that once a quality threshold is surpassed attention turns to contextual factors such as whether the site is useful in doing a job. It seems reasonable to conjecture that a poor quality site would have a greater impact on behavioural intention because a poor quality site is a barrier to use while a high quality site merges into the background allowing usefulness and social influence to emerge to become of central concern. Social influence is likely to be a stronger factor in intranet applications than it is in general e-commerce applications due to the existence of formal management and organizational structures as well as powerful (but often hidden) social networks in organizations (Cross et al., 2001). Each organization will have a different balance and mix of formal and informal networks and this mix needs to be considered in any in-depth analysis of social influence through techniques such as social network analysis (Vidgen et al., 2007).

The relationship of behavioural intention and actual usage although highly significant is not strong. This is likely due to actual usage data being collected at the same time as intention data. Actual usage is a lagged effect and needs to be assessed at a different time than intention. Ideally, actual usage would be measured by objective data such as web server logs rather than being self-assessed. However, this is not straightforward since it requires that respondents are tracked through a unique code which means that the survey can no longer easily be administered anonymously.

There are numerous implications for practice and SalesOrg. First, an intranet acceptance survey can be a good way of promoting a new intranet site to new users. Second, the impact of social influence suggests that the site must be promoted and supported by senior management in order to build usage. This deployment of the formal organizational structure should be complemented by a study of the informal social networks (Cross and Parker, 2003) that support knowledge sharing in organizations (Cross et al., 2001), possibly leading to the nurturing of communities of practice (Wenger et al. 2002). Third, the content needs to be updated frequently to maintain user interest and repeat visits, and to bolster perceived usefulness and information quality. Fourth, the qualitative comments suggest that international aspects such as multi-lingual capabilities and performance/bandwidth constraints should be considered.

Although the findings of the research are significant, it is worth considering some of the limitations of the current study. First, although the sample has good explanatory power for medium-sized effects ($f^2=0.15$; $\alpha=0.05$; $1-\beta=0.95$), a larger sample could help to reveal smaller population effects. A further limitation of our research model is the absence of demographic and other factors, such as age, gender, geographical location, experience, use intensity, and so on. Since we may have a heterogeneous sample of a global nature, capturing and analyzing information on the sample may help to understand the behaviour of different groups of global employees. Second, the model was tested with a specific case study. Although the model is parsimonious, further work is needed to test whether it can be more widely applied to other contexts. For example it would be useful to examine corporate intranet sites that score low on the quality dimension to see if low quality has a relatively greater impact on behavioural intention. Third, the research is limited in terms of the measure of actual usage. The research is limited in that it adopts a single self-reported and unlagged measure of usage as a proxy for actual usage. This is not uncommon in similar studies. However, to tackle this deficiency, we hope that, in the future, a longitudinal study could be designed to measure actual usage over time.

6   SUMMARY

This study has successfully tested a model of intranet acceptance in the context of the sales and marketing department of a large multinational manufacturing company. The model is robustly

supported by the data and shows that behavioural intention is strongly driven by perceived usefulness, social influence and intranet quality, a second-order intranet quality construct comprising usability, design quality and information quality. In summary, this study has shed light on the considerably under-researched topic of intranet quality assessment and user acceptance. We hope that this research paves the way for others to begin investigating aspects of user behaviour and knowledge sharing surrounding this very important type of Web-enabled corporate information system.

References

Bailey, J. E. and S. W. Pearson, (1983). Development of a Tool Measuring and Analyzing Computer User Satisfaction, Management Science, 29(5): 530-544.

Barnes S.J.; Vidgen R.T. (2002) "An Integrative Approach To The Assessment Of E-Commerce Quality", Journal Of Electronic Commerce Research, Vol 3, No 3.

Chin, W.W. (1998). The partial least squares approach for structural equation modeling. In Modern Methods for Business Research (Marcoulides, G.A. Ed.), pp. 295-336, Erlbaum: Hillsdale, NJ.

Compeau, D., and Higgins, A., (1995). Computer Self-Efficacy: Development of a Measure and Initial Test, MIS Quarterly Year, 19(2): 189-211.

Cross, R., Parker, A., Prusak, L. and Borgatti, S. P., (2001). Knowing What We Know: Supporting Knowledge Creation and Sharing in Social Networks. Organizational Dynamics, 30, 100-120.

Cross, R., and Parker, A. (2004) The Hidden Power of Social Networks: Understanding How Work Really Gets Done in Organizations, Harvard Business School Press.

Davis, F., (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, MIS Quarterly, 13(3): 391-340.

Davis, F., (1993). User Acceptance of Information Technology: System Characteristics, User Perceptions, and Behavioral Impacts, International Journal of Man-Machine Studies, 38: 475-487.

DeLone, W. H. and E. R. McLean, (1992). Information Systems Success: the Quest for the Dependent Variable, Information Systems Research, 3(1): 60-95.

Faul, F., Erdfelder, E., Lang, A. and Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39 (2), 175-191.

Fornell, C. and Larcker, F.D. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18 (1), 39–50.

Leung, H. K., (2001). Quality metrics for intranet applications. Information and Management, 38:137 – 152.

Liu, C.; Arnett, K. (2000) "Exploring The Factors Associated With Web Site Success In The Context Of Electronic Commerce", Information & Management. Vol 38 No1 (Oct.) p. 23-33.

Loiacono, E.T., Watson, R.T., Goodhue, D.L. (2000) "Webqual: A Website Quality Instrument", Working Paper 2000-126-0, University Of Georgia.

Nielsen, J., (1993). Usability Engineering, Morgan Kaufmann, San Francisco.

Nielsen, J., (1999). User Interface Directions for the Web, Communications of the ACM, 42(1): 65-72.

Nielsen, J., (2000). Designing Web Usability, New Riders Publishing, Indiana.

Nunnally, G. (1978). Psychometric theory. New York: McGraw-Hill.

Parasuraman, A., V. A. Zeithaml and L. Berry, (1991). Refinement and Reassessment of the SERVQUAL Scale, Journal of Retailing, 67(4): 420-450.

Parasuraman, A.; Zeithaml, V.A.; Malhotra, A. (2005) "E-S-Qual: A Multiple-Item Scales For Assessing Electronic Service Quality", Journal Of Service Research, Vol 7 No 3, pp. 213-233.

Ringle, C.M., Wende, S. and Will, A. (2005). SmartPLS 2.0 (beta). Retrieved January 11, 2008, from http://www.smartpls.de

Skok, W., and Kalmanovitchb, C., (2005). Evaluating the role and effectiveness of an intranet in facilitating knowledge management: a case study at Surrey County Council, Information and Management 42: 731–744.

Spool, J., T. Scanlon, W. Schroeder, C. Snyder and T. DeAngelo (1999). Web Site Usability: a Designer's Guide, Morgan Kaufmann, San Francisco.

Stenmark, D. (2005). How intranets differ from the Web: organisational culture's effect on technology. In Proceedings of ECIS 2005, Regensburg, Germany.

Straub, D. and Carlson, C. L. (1989). Validating instruments in MIS research. MIS Quarterly, 13 (2), 147-169.

Strong, R., Y. Lee and R. Wang, (1997). Data Quality in Context, Communications of the ACM, 40 (5): 103-110.

Venkatesh, V. and F. D. Davis, (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies, Management Science, 46(2): 186-204.

Venkatesh, V. Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User Acceptance of Information Technology: toward a unified view, MIS Quarterly, 27(3): 425-478

Vidgen R., Naude, P., and Henneberg, S., (2007). What Sort of Community is the European Conference on Information systems? A Social Network Analysis 1993 – 2005. European Journal of Information Systems, 16(1): 5-19.

Wenger, E., McDermott, R., and Snyder, W. M. (2002). Cultivating Communities of Practice: A Guide to Managing Knowledge, Boston, MA, Harvard Business School Press.

Yoo B.; Donthu, N. (2001) "Developing A Scale To Measure The Perceived Service Quality Of Internet Shopping Sites (Sitequal)" Quarterly Journal Of Electronic Commerce, Vol 2 No 1, pp. 31-47.

Zeithaml, V. A., A. Parasuraman and L. Berry, (1990). Delivering Quality Service: Balancing Customer Perceptions and Expectations, New York, The Free Press.

APPENDIX: SURVEY INSTRUMENT

Intranet Quality

Usability
Learning to operate the site is easy for me
My interaction with the site is clear and understandable
I find the site easy to navigate
In general, I find the site easy to use

Design quality
The site has an attractive appearance
The design of the site is appropriate for this type of site
The site conveys a sense of competency
The site creates a positive experience for me

Information quality
The site provides accurate information
The site provides timely information
The site provides complete information
The site provides easy to understand information

Acceptance

Social Influence
People who influence my behaviour think that I should use the site
People who are important to me think I should use the site
The senior management have been helpful in the use of the site
In general, the organization has supported the use of the site

Perceived usefulness
Using the site enables me to accomplish tasks more quickly
Using the site increases my productivity
Overall, I find the site useful in my job

Intention to use
I intend to use the Site on a regular basis
I predict I will continue to use the site on a regular basis
I plan to use the site on a regular basis