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Old Theory and New Service Quality: An Exploratory Study of the Nature and Nomological Net of Online Service Quality and Continuing Use using Information Systems Theory

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Abstract

The quality of online services is a research area at the intersection of marketing and information systems. Traditionally, it is rooted in ideas about service quality of non-virtual service interactions that have been adopted from the marketing literature. However, as Information Systems researchers adapt the concepts and measures to fit virtual, or online, services, they frequently encounter difficulties both with the conceptualisation and with the measurements. In this paper, we remind the community that online services are also information systems, and receivers of these services are system users. Hence, we suggest that established "old" IS-centric theories such as continuance and self-efficacy can play a role in explaining users' perceptions of these "new" types of online services. We present an initial qualitative study that demonstrates the plausibility of this perspective and its potential explanatory value.

Keywords
Service Quality, Continuance, Self-Efficacy, Online Services, Qualitative Research

INTRODUCTION

On-line services are information systems as well as services, yet this aspect is frequently overlooked in research into online service quality. Instead, the service aspect is emphasised, and the provenance of much online service quality research (for example Barnes et al. 2002; Zeithaml et al. 2002) is services marketing literature.

While the perception of the service is argued to be important for continuing success of the service, little of the online services quality literature has in fact examined perceived service quality as an antecedent to adoption or continuance behaviour which in turn is necessary for the business or commercial success of a service (Zeithaml et al. 2002). In contrast, much of the literature on information systems has focused on user behaviour and user behaviour decisions. For example, IS continuance theory focuses on the continued use of a system, and can therefore add explanatory power to service quality theory.

Moreover, while the online service quality literature has made substantial progress in recent years, there is no clearly agreed nomological net for service quality. In fact, the reverse is true, and there is wide diversity of viewpoints with regard to the relationships between perceptions, expectations, service quality, and customer satisfaction. In contrast, many of the IS theories on user behaviour have (comparatively) stable measurement models that have been applied and tested in a variety of settings (Venkatesh et al. 2003).

In this paper, we examine the explanatory power of "old" information systems continuance theory for "new" online self-service information systems. The aim of this empirical study is to identify emergent concepts and structural relationships as perceived by our study respondents, without prejudice, and compare these to the findings of previous research. As a result, we suggest that evaluating the quality of online services from an information systems continuance perspective can offer fresh insights and new lines of enquiry for this research area. We restrict ourselves to continuance rather than adoption or initial acceptance, as explained e.g. by TAM (Davis et al. 1989) or UTAUT (Venkatesh et al. 2003) since a meaningful evaluation of online service quality requires that the user has already experienced the online service.

This paper is structured as follows. We first present a literature review which introduces service quality, IS continuance theory, and self-efficacy theory. Next, we describe our methodology and research design, which uses an interpretive paradigm and a cognitive mapping approach. We then present our results, followed by a discussion and comparison of these results with existing information systems continuance theory. We finish with some conclusions.

LITERATURE REVIEW

Service quality in marketing research

In the consumer behaviour literature, service quality is defined in terms of "the discrepancy between consumer's perceptions of the services offered by a particular form and their expectations about firms offering such services" (Parasuraman et al. 1988). This is an attitude, formed *cumulatively* across multiple encounters. By contrast, satisfaction relates to specific transactions (Oliver 1981; Parasuraman et al. 1988).

Consumer behaviour theory draws on expectation disconfirmation theory (ECT) which posits that consumers form an initial expectation of a service prior to use, typically from formal marketing communication by the firm and informal communication by peers. Second, they use the service, and form perceptions about that experience. Third, they compare their post-use perception of performance with their expectation to determine whether their expectations (of this encounter) were met (confirmed or disconfirmed). This is the perception of satisfaction. Fourth, they modify and update their overall attitude towards the service ("service quality") based on their satisfaction of this instance of use. Finally, this leads to an intention to continue to use the service (Oliver 1981).

In face-to-face service quality, one of the most enduring measurements of the service quality construct is developed in the ServQual stream of research. ServQual is an instrument for measuring customer perceptions of (face-to-face) service quality in five dimensions: reliability (performing the service dependably); assurance (the knowledge and courtesy of employees); tangibles (the physical environment); empathy (the degree of caring attention provided); and responsiveness (willingness and promptness) (Parasuraman et al. 1985; 1988; 1991; 1994).

Despite its popularity, ServQual has a number of weaknesses. ServQual focuses on the process of service delivery at the expense of the eventual outcomes for the customer. The ServQual stream of research is also somewhat unclear as to whether service quality is fully defined by the five dimensions, or whether, as the ServQual authors seem to suggest, there is a further construct, overall service quality, which is predicted by the RATER dimensions (Parasuraman et al. 1988).

Other marketing researchers have emphasised the distinction between the process and outcome qualities of a service. Functional quality refers to the customer's perception of the interactions that take place while the service is being delivered (Grönroos 1984). Interaction quality (Brady et al. 2001) has an equivalent meaning. Technical quality refers to the outcome of receiving the service – the customer's perception of the value of what they have received after the production process is finished" (Grönroos 1984). Outcome quality has a similar definition (Brady et al. 2001).

IS continuance theory

IS continuance theory is an extension of widely-used information systems user acceptance models such as the Technology Acceptance Model (TAM) (Davis et al. 1989), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003). Continuance theory focuses on experienced, continuing users rather than those in the initial stages of technology adoption (Bhattacherjee 2001; Hsu et al. 2004). This theory naturally has more synergy with service quality theory than technology acceptance theory, since a meaningful opinion of online service quality requires that the user has experienced the online service. The basic concept underlying user continuance models is that actual use updates individual reactions (including confirmation/disconfirmation, or service quality perceptions), which in turn predict further expectations and

intentions. There is an iterative relationship between past perceptions and future expectations. We examine this iterative relationship for explanatory power in the context of online service quality.

IS continuance literature also draws on expectation disconfirmation theory. Continuance assumes that the user has had some level of ongoing interaction with the information system, and is in a position to form a view of the quality of the usage experience. The iterative relationship between past use and future intentions is described as "the basic concept underlying user acceptance models (Venkatesh et al. 2003). For continuing users of information systems, both confirmation (an experience with an online service that met or exceeded expectations) and perceived usefulness (performance, productivity and effectiveness), contribute to satisfaction (attitude towards the service) (Bhattacherjee 2001). Intention to use is preceded by perceived usefulness (PU) and a positive attitude (satisfaction). Perceived ease of use (PEOU) was found to have minimal influence on IS continuance intentions, in contrast to IS adoption models (Davis et al. 1989). This initial continuance model was modified and extended by Hsu et al (2004), who added the concept of Internet self-efficacy (the belief that one has the capability to interact with the Internet effectively); adapted from social cognitive theory (Hsu et al. 2004). Internet self-efficacy has been found to have a positive effect on outcome expectations and actual computer use (Compeau et al. 1995). We have modified these models to form the initial research framework for our study. We have retained "actual use" from the IS adoption literature, and the constructs from IS continuance literature. The only modification we have made is that we have omitted the satisfaction construct, because it is too ambiguous. Satisfaction is modelled as a consequence of confirmation-disconfirmation (perceived service quality) in Hsu et al's model, while marketing researchers have modelled satisfaction as an antecedent to service quality (Oliver 1981; Parasuraman et al. 1988). Our framework is included as Figure 1.

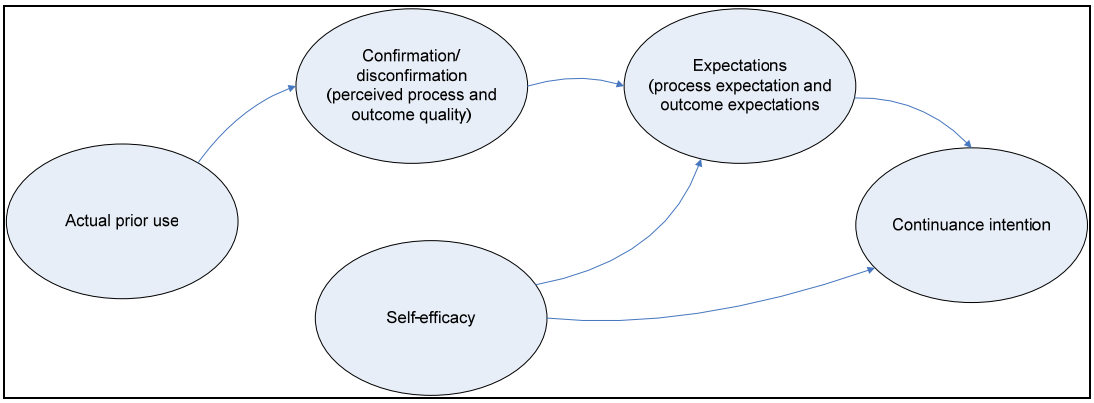

Figure 1: Research framework adapted from IS continuance models

Self efficacy theory

Marketing literature includes the construct "self-perceived service role", which is the degree to which the customer believes they have contributed to the quality of the service they have received (Zeithaml et al. 1993). In a self-service context, this is particularly important, because the performance of the online service (which is a piece of software with pre-defined business rules and behaviours) will not change. Except when there is a major software upgrade, bug, or outage, an online system service will perform much more consistently than a face-to-face service. The difference in the service-levels available between one user and another will rest with the users themselves, and their ability to use the service effectively.

Self-efficacy is defined as the belief that one has the capability to perform a particular behaviour. Computer self-efficacy is defined as "an individual's perception of his or her ability to use a computer in the accomplishment of a job task" (Compeau et al. 1995:193). Computer self-efficacy has been found to influence both perceived usefulness and perceived ease of use in different ways. Chau (1996), found a negative relationship between computer self-efficacy and perceived usefulness, suggesting that more experienced and informed users are harsher critics. Chan found an insignificant relationship between computer self-efficacy and perceived ease of use, but noted that their study was restricted to use of one software package. Other studies (Venkatesh et al. 1997) found a positive relationship between computer self-efficacy and perceived ease of use across six different systems. Since there is no clear consensus about the role of perceived ease of use in IS continuance literature, we retained it as part of our research framework.

In summary, we have identified a set of initial constructs from information systems continuance theory to frame our enquiry. These are prior experience (actual prior use), perceived service quality (conformation-

disconfirmation), future process expectations and outcome expectations, and internet self-efficacy. We also indentified some possible structural relationships based on previous research.

METHODOLOGY

This section describes the methodology applied to our empirical study. Recall that our aim in this was to identify emergent concepts and structural relationships as perceived by the respondents, without prejudice, and compare these to the findings of previous research. Hence, rather than using the constructs identified in the previous section to guide or constrain our data collection, we use a post-hoc comparison to show how our empirical data support the constructs from IS theory presented above.

Our study setting was conducted in the setting of a university online service system, which, through a central portal, offered a number of different services to both staff and students. These included library services, online learning, enrolment and academic records, and access to other services such as the health centre and the recreation centre. Participants were sought who were current or prospective university students at any level from undergraduate to post graduate and post-experience. They did not need to be knowledgeable about computers, but they did need to know how to use the Internet. All 10 (ten) participants were volunteers, recruited through advertisements placed in various locations around campus and on the university's Blackboard system (an online learning environment). We interviewed users of the university online services about their actual use, their perceptions of service quality, and their future expectations. All our respondents had self-identified as being continuing users. As we are interested in identifying the relevance, rather than the relative importance of, concepts, the use of volunteers should not be problematic. While individual concepts may be more or less importance to different groups, and possess different structural relationship in different groups, their existence should be invariant, if they are psychological cognitive states or dispositions.

Detailed Research Design

We conducted our research with a qualitative, constructivist approach, using cognitive mapping. Cognitive mapping is a general approach with different specific forms, e.g. (Ahmand & Ali, 2003; Eden et al. 2004). A mental model is a representation of an individual's internal understanding. Cognitive mapping is a method used to elicit the structure and content of people's internal understanding to provide a mental model. Cognitive mapping makes mental models explicit; expresses mental models graphically; and allows users to express causation and other relationships between constructs in a way that is meaningful to them. As such, cognitive mapping often plays a role in a larger grounded theory effort, but can also be used on its own, if the explication of concepts, rather than a full and generalizable causal theory is sought.

Our initial data was verified with research participants, and then progressively summarised, re-coded and consolidated. This process provides a chain of evidence from the raw data to the discussion, analysis and comparison with existing studies.

We followed the specific cognitive mapping approach used by Ahmad and Ali (Ahmad et al. 2003) of initially capturing the user's own representation of their cognitive map, followed by analysis and consolidation of the individual maps to identify overall trends. This involved three phases: concept identification (raw concepts without relationships), link description (relationships between concepts), and property clarification (reviewing and clarifying concepts and relationships).

For concept identification, interviewees described the key elements of their interactions with university online services in their own words, with minimal interruption. Relationships were ignored. The researcher noted key points with the agreement of participants. Then initial link descriptions were built. The interview respondents were asked to identify the concepts that had been explored, and think about which concepts were related and describe the nature of the relationships. Respondents had control over the concepts and relationships, to add and remove as required. Finally, the properties and relationships were clarified. Respondents looked again at each of the concepts and described or explained what they meant. The outcome was a raw cognitive map in post-it note form with hand-written notes and comments (agreed by the interviewee). This type of informal presentation is a standard part of the cognitive mapping method (Ahmad et al. 2003). Each interview concluded when the respondents were unable to add further concepts or relationships to the model.

After all the interviews were completed, common themes were identified and consolidated cognitive maps were developed. Detailed comments from the interviews were analysed to clarify some of the relationships. The consolidated cognitive maps were used to identify patterns and themes arising from the research. Finally, these patterns were compared with existing models information systems continuance literature.

Coding

A qualitative coding system was used. We started with a broad, provisional "start list" of codes, derived from the literature review (Huberman et al. 1998): process quality, outcome quality, self-efficacy, and confirmation/disconfirmation.

Our approach was based on guidelines for coding qualitative data (Huberman et al. 1998), modified to accommodate our cognitive mapping approach, which consisted of the following 4 steps: 1. reading and contrasting individual cognitive maps, initial identification of categories, and frequency of occurrence; 2. initial analysis of cognitive maps and associated interviews for conditions and descriptions of strategies and tactics employed when using online services; 3. consolidation of the individual cognitive maps based on the initial codes to identify themes; 4. drawing patterns and verifying conclusions, and comparing them to existing information systems continuance theory.

RESULTS

The following tables provide selected examples from the interviews which we coded to the initial research constructs derived from literature. The number of the respondent is in brackets.

Outcome quality

Outcome quality is defined as "The perception of the job-related or personal value received". Our respondents described this as an important component of their perceptions of the quality of an online service (Table 1). Both expectations specific to a given service or task were described (e.g. 1, 2, 4, 6); and more general expectations of improvements in job or life performance (3, 5, 7)

Table 1: Examples of outcome quality considerations from participants

The library provides access to databases. Its easy and convenient to find journal articles. You put in the topic/keyword and get exactly what you want. (R1)
I use student records to look at my results and verify that they are official and reliable. I also use it to enrol and change my details. (R3)
I use student records … because I don't like queuing for hours (R3)
I love the library service, the system is very good. Everything is online. I can place holds and they will inform me if the book arrives, and I can renew loans online. I can make interlibrary requests and requests to buy books. (R8)
Technology that enables me to teach better is good. (R2)
Yep because lately I joined the gym so that's kind of valuable for me as a check… you've got a timetable, what time do they open, what time they close, and [you can] make a booking… things like that. (R4)
Yep because lately I joined the gym so [the online service is] …useful for me to manage my fitness (R4)

Process quality

Process quality is described as the customer's perception of the interactions that take place while the service is being delivered. Our respondents considered this to be an important aspect of online service quality (Table 2). It was frequently mentioned in association with human computer interaction and usability issues (1,2,3,4).

Table 2: Examples of process quality considerations from participants

I need to apply for grants, check the status of grants, and apply for conference leave. This relates to my research role. The GMS [Grant Management System] asks for information it should already have, and I don't like the design, I think it won't use information that is required in mandatory fields. There seems to be a poor fit between what I want to achieve and what the system or the people behind it want. This leads to a poor perception of …usability. (R1)
The interface is clunky (R5)
The interface is not very good (R6)
The searching mechanism is not very intuitive, it's a bit inconsistent (R1)

Disconfirmation

Confirmation or disconfirmation is the discrepancy between consumer's perceptions of the services offered by a particular form and their expectations about firms offering such services. Disconfirmation took various forms (Table 3). Some respondents were unhappy with aspects of the specific functionally available (1,2,3). Other were dissatisfied with performance (4,5). One respondent clearly expressed the interplay between expectation and expectation-confirmation, noting that higher initial expectations resulted in a more positive perception if those expectations were confirmed (6).

Table 3: Examples of disconfirmation considerations from participants

There are some [library] features that are not very good. The full text doesn't display for some articles, and I would like to be able to search on document texts but I can't. (R1)
The [course records] functionality is limited compared to Blackboard [an online leaning environment] and that affects my perception negatively. (R2)
They just give you the general operation, they didn't provide [information as to] who was going to be available there. So a lot of time you had to go all the way to the office and then find out that you have to wait for at least three or four days. Maybe they [should] consider making bookings available online. (R4)
The availability is variable. (R8)
Some services don't work very well. (R3)
My experience increases my expectation, but it also increases my satisfaction level if my expectations are met. (R6)

Self-efficacy

Self efficacy is an individual's perception of his or her ability to use a computer (in this case an online service) in the accomplishment of a job task. Our respondents reported confidence in their ability to get things done and achieve their service goals (Table 4). This confidence was based on general internet knowledge (1,2, 6), specific experience with the services they use (3, 5), and domain knowledge about the business context of the service (7).

Table 4: Examples of self-efficacy considerations from participants

I have lots of experience teaching this sort of thing [web design], and a lot of relevant knowledge.
Because I am more experienced [with web technology], I can solve problems.
It can be hard to find your way around, you need to know the site fairly well to find what you want.
I have a lot of experience with the site…I can get around problems
I can't really function on the site without knowledge [of the site] built up over time.
I'm a high user of the Internet. Generally this has improved my effectiveness, I find it easier to find things
I have more positive experiences with the university web-site the more I know about the university. I can compare specific content with the overall picture. However sometimes I can't relate the content to my specific question.

Structural relationships

The structural relationships were much more complex and harder to generalise than the individual constructs. An example of an individual cognitive map is shown in Figure 2. This shows a complex set of relationships, with perceptions based on previous use forming a complex set of relationships with perceptions of process and outcome quality. In the diagram "+" indicates the user felt this experience increased their perception of quality, "-" indicates their perception of quality was decreased, and "+/-" indicates an equivocal position. The numbers refer to notes taken during the interview.

This respondent had reservations about the both the quality of the outcomes, *"There are some features that are not very good", and the quality of the process "It feels clunky and not very efficient"*. This respondent was prepared to trade off poor process quality for useful outcomes, and still rated the outcomes as useful even if in some areas the functionality was less than ideal.

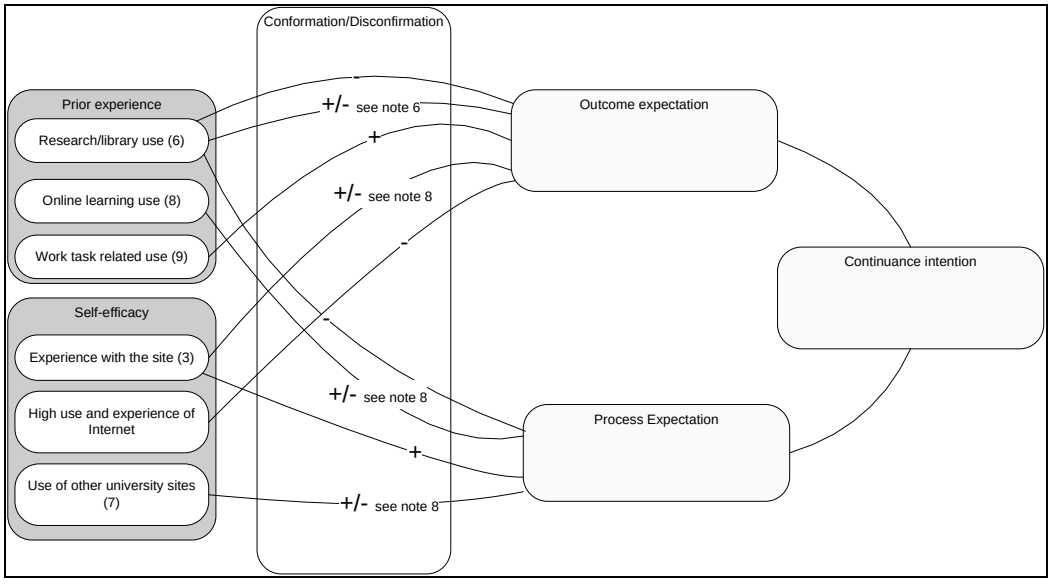

Figure 2: Individual cognitive map example, respondent 7

Consolidated cognitive map: self-efficacy to service quality

The clearest trend across the consolidated cognitive maps was the relationship between the respondents' own skill and experience and their increased perceptions of process and outcome quality. The consolidated cognitive map is shown as Figure 3. The numbers shown represent the total number of participants that reported that relationship and directionality.

Even this, however, was a complex relationship. Seven out of ten respondents felt that their knowledge and experience of the site improved their outcome expectations and overall perception of the service quality – both of the process and the outcomes. This is an interesting result, as according to the expectation disconfirmation model underlying much of the service quality literature, higher expectations should lead to lower perceptions of quality. However, these expectations were equivocal. Experience tended to raise expectations overall (1, 3, 4), but also increased the users' outcome expectations (2,3,4), despite some level of dissatisfaction with the process (2,3).

Table 5: Examples of structural relationships from participants

My experience increases my expectation, but it also increases my satisfaction level if my expectations are met".
I am generally in a hurry…. and I [would like it to be] it to be simple and quick with high responsiveness. The actual software is frustrating. However, I am also more likely to know the system .It generally meets my expectations,
I am probably more critical, and have higher expectations as a result [of my experience]… I have to make a lot of compromises, but I become accustomed to what we have.
I'm a high user of the Internet. Generally this has improved my effectiveness…My broad experience with other sites increases my expectations overall, and decreases my perceptions of service quality.

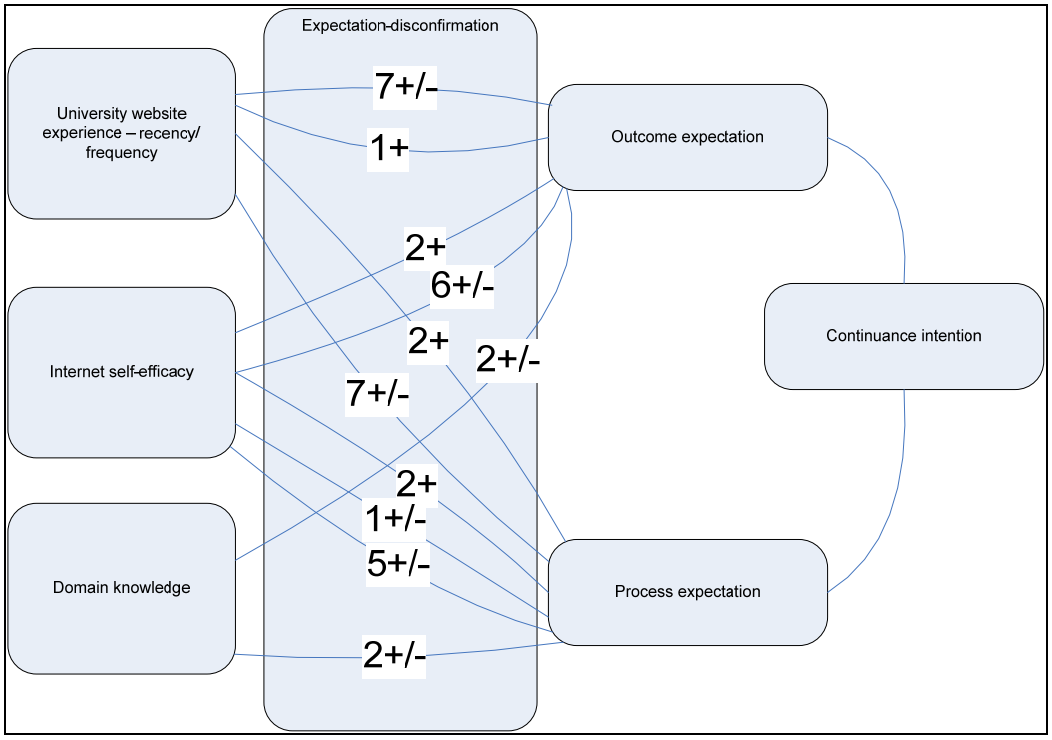

Figure 3: Consolidated cognitive map

DISCUSSION AND INTEGRATION WITH EXISTING THEORY

Expectation disconfirmation

Five of our respondents described expectation-disconfirmation directly. Our research supports the wide use of expectation disconfirmation theory to explain online service quality, from both a marketing and an information systems perspective. However, our data suggests that continuing users modify their expectations of specific service (and consequently their perception of its quality) based on their past experience of the service. They are

frequently well aware of its limitations, and may be irritated by them, but will continue to use the service if they can obtain useful outcomes. This is consistent with the findings of IS continuance theory.

Process and outcome expectation

Our study suggests that perceived online service quality is not a single construct with five dimensions as described by Parasuraman et al. (1988). Instead, the distinction between process and outcome quality was clearly evident in our data. Our interviewees frequently described a willingness to trade-off process for outcome benefits. Slow and unreliable connections, or "clunky" interfaces would be tolerated if the desired outcomes could be achieved. This is an important finding that is highlighted by the fact that in our case, the users were to a certain degree "captives" of the service provider. While the university provided similar services offline, service recipients were of course unable to simply use another provider. This indicates that a concpetualization of service recipients as IS users may be appropriate in at least some contexts.

Self-efficacy

Although self efficacy tended to increase perceptions of service quality, we found evidence of a more complex relationship than that modelled by Hsu et al. We found some support for the notion that more experienced and informed users are harsher critics (Chau 1996), and for a positive relationship between computer self-efficacy and PEOU/effort expectancy which was dropped by Hsu et al (2004) following the lead from Bhatterchajee's (2001) study.

The user has a much greater role in serving themselves in online services than in face to face services. This means that the user's own contribution is an essential antecedent for the quality of the service they receive. Our research suggested for online services, that confidence in one's ability to get the most out of the service is more broadly-based than simply internet self-efficacy, as suggested by IS continuance theory. Our respondents reported a range of knowledge and skills which contributed to their perceptions of the service quality they were able to obtain. These included specific knowledge and experience with the service itself, Internet self-efficacy, and general knowledge of the business domain in which the tool was operating.

We suggest that self-efficacy is an important antecedent of perceptions of process and outcome disconfirmation and subsequent expectations, but both the nature of the construct itself, and its structural relationships, require further research. For example, actual self-efficacy might influence the received service, and consequently the perception of that service, while perceived self-efficacy (as a belief) may have a direct effect on the perception of the service.

However, we caution the reader that our findings on self-efficacy, as well as the other constructs and their relationships, are self-reported reflective findings. An observational or experimental study might find that subjects behave in fact differently. Hence, this study, which relies on self-reports, should not be viewed as a rigorous test of relationships, but a generation of theory and comparison with existing work.

Structural relationships and Continuance models

Our cognitive mapping approach suggested that although many of the constructs from IS continuance theory had clear support; the structural relationships in existing models had likely been oversimplified in the interests of parsimony. We suggest that previous authors may have been hasty in dropping process quality/expectations as a determinant of perceived continuance intentions, and that the self-efficacy construct is itself more complex, and has more complex relationships, than previous authors have suggested.

CONCLUSION

Our major conclusion from this research is that information systems researchers studying user perceptions of online services should not feel obliged, as a matter of course, to look back to services marketing literature, and SERVQUAL in particular, for the provenance of their research models. In some key points, both streams of research have similar provenance (for example, expectation disconfirmation theory), but beyond those similarities, our study suggests that core information systems theory has stronger explanatory power than services marketing theory for this phenomenon.

We have provided evidence for an alternative explanation of service recipient's perceptions of an online service and consequent behavioural intention of continued service use. This initial qualitative work was used to support theories for further, quantitative, empirical testing. Rather than offering a fusion or integration of these theories, we suggest that the explanatory power of our present conceptualisation of the online service, and the conceptualization of the marketing tradition can be rigorously tested and compared.

We suggest that the study of the nature and determinants of perceptions of online service quality is overdue for a fresh examination. Information systems continuance models constructs and models offer more stable nomological net as an alternative to consumer behaviour models from marketing.

We suggest that the relative predictability of the behaviour of technology artefacts, and the essential role of the user in serving themselves from a smorgasbord of available services are significant points of differences from face-to-face services. Our interviewees rated their own ability to use the online services available effectively as the biggest single contributor to acceptable service quality.

Although technology self-efficacy is a well-established construct in information systems research, our study suggests that it may be more nuanced than previous studies suggest. Participants' general knowledge of the business domain, their internet self-efficacy, and importantly, their beliefs about their own skills and abilities with the specific services they use regularly were all influential in forming beliefs about the quality of the service.

Overall, it seems that continuing use tends to increase expectations of process and outcome quality. If organisations can only get their stakeholders to use, and keep using, their online offerings, they will build the skills and experience they need to achieve a quality experience.

REFERENCES

Ahmad, R., and Ali, N.A. "The use of cognitive mapping technique in management research: Theory and Practice," *Management Research News* (26:7) 2003, pp 1-15.

Barnes, S., and Vigden, R. "An Intergrative Approach to the Assessment of E-Commerce Quality," *Journal of Electronic Consumer Research* (3:3) 2002.

Bhattacherjee, A. "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly* (25:3) 2001.

Brady, M.K., and Cronin, J.J.J. "Some New Thoughts on Conceptualising Percieved Service Quality: A Hierarchical Approach," *Journal of Marketing* (65) 2001.

Chau, P. "An Empirical Assessment of a Modified Technology Acceptance Model," *Journal of Management Information Systems* (13:2) 1996.

Compeau, D., and Higgins, C. "Computer Self-Efficacy: Development of a Measure and Initial Test," *MIS Quarterly* (June) 1995.

Davis, F., Bagozzi, R., and Warshaw, P. "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," *Management Science* (35:8) 1989.

Eden, C., and Ackermann, F. "Cognitive mapping expert views for policy analysis in the public sector," *European Journal of Operational Research* (152) 2004, pp 615-630.

Grönroos, C. "A service quality model and its marketing implications," *European Journal of Marketing* (18:4) 1984, pp 37-44.

Hsu, M.H., Chiu, M.C., and Ju, T.L. "Determinants of continued use of the WWW: an integration of two theoretical models," *Industrial Management and Data Systems* (104:9) 2004, pp 766-775.

Huberman, A.M., and Miles, M.B. "Data Management and Analysis Methods," in: *Collecting and Interpreting Qualitative Materials*, N.K. Denzin and Y.S. Lincoln (eds.), Sage, Thousand Oaks, 1998, pp. 179-210.

Oliver, R.L. "Measurement and evaluation of satisfaction processes in

retail settings," *Journal of Retailing* (57:25-48) 1981.

Parasuraman, A., Zeithaml, V., and Berry, L. "SERVQUAL: A Multi-Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing* (64:Spring) 1988.

Parasuraman, A., Zeithaml, V., and Berry, L. "Refinement and reassessment of the SERVQUAL scale," *Journal of Retailing* (64:1) 1991.

Parasuraman, V., Zeithaml, V., and Berry, L. "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing* (49) 1985.

Parasuraman, V., Zeithaml, V., and Berry, L. "Reassessment of Expectations as a Comparison Standard in measuring Service Quality: Implications for Further Research," *Journal of Marketing* (58) 1994.

Venkatesh, V., and Brown, S. "A longitudinal Investigation of Personal Computers in Homes: Adoption Determinants and Emerging Challenges," *MIS Quarterly* (25:1) 1997.

Venkatesh, V., Morris, M., Davis, G.B., and Davis, F.D. "User Acceptance of Information Technology: Towards a Unified View," *MIS Quarterly* (27:3) 2003, pp 425-478.

Zeithaml, V., Berry, and Parasuraman "The Nature and Determinants of Customer Expectations of Service," *Journal of the Academy of Marketing Science* (Winter) 1993, pp 1-12.

Zeithaml, V., Parasuraman, A., and Malhorta, Y. "Service quality delivery through websites: A critical review of extant knowledge," *Journal of the Academy of Marketing Science* (30:4) 2002, pp 262-375.

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