
Conceptualising online banking service value

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Abstract A conceptual framework for perceived value of online banking services is developed. The nature of four value dimensions is explored in the context of online banking services. In two empirical studies the relative importance of each value dimension is measured and the findings indicate that the temporal and spatial dimensions are perceived as more important than traditional dimensions based on outcome and process elements. Sub-dimensions of technical, functional, temporal, and spatial service value are also identified. It is suggested that temporal and spatial flexibility is only one aspect of temporal and spatial value. The paper extends prior research on e-services by conceptualising online banking service value as a multidimensional and hierarchical construct and separating each value dimension into sub-dimensions. It suggests a holistic perspective of service value and a dynamic nature of value dimensions: although the separate value dimensions involve different aspects of the service value, as a whole they fulfil the same need. The paper contributes to marketing research and practice with its approach to how value can be conceptualised for bank services. Explanations for the dynamics of the value dimensions are proposed. *Journal of Financial Services Marketing* (2007) 12, 39–52. doi:10.1057/palgrave.fsm.4760056

Keywords Service value, online banking services, time, location, consumer perspective

INTRODUCTION

The banking industry is currently in the forefront of the developments of technology-based service delivery. Interesting from a value creation perspective is that banks, not consumers, drive the technology-based service usage by pushing customers towards more cost-efficient service delivery channels. For customers this influences banking service value because the service delivery frequently occurs without customer–service employee

interaction. Customers are creating the service themselves through technology-based self-services^{1,2} such as ATMs, internet, or mobile phone. With these self-service technologies, that is ‘technological interfaces that enable customers to produce a service independent of direct service employee involvement’,³ customers can create value without the explicit involvement of the service provider.⁴ It has even been suggested that technology is eliminating interpersonal service encounters altogether.⁵

Consequently, a challenge for the bank sector is how to create service value. Aspects traditionally seen as value-adding are not necessarily valuable. Banking research has, however, focused on describing and measuring service quality rather than

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studying service value.^{6–11} Currently, there is a growing interest towards the quality of technology-based banking services^{12–14} and aspects influencing the adoption and use of them.^{15–20} In service research, the amount of research on e-service value is less extensive compared to research on e-service quality (eg, Santos,²¹ Kaynama and Black,²² Dabholkar,²³ Zeithaml,²⁴ Yang and Jun,²⁵ Surjadjaja,²⁶ Gounaris and Dimitriadis,²⁷ and Zeithaml²⁸). Only few address e-service value^{29–32} and little is known about what specific aspects of online banking services that create value.

The aim is to develop a conceptual framework for online banking service value. Positioned within the Nordic School research paradigm³³ and service management and marketing research, the focus is on service value-in-use from a customer perspective.³⁴ Previous research has suggested a four-dimensional value model based on temporal, functional, temporal, and spatial dimensions.³⁰ More recent research has extended this model with sub-dimensions of the temporal, and spatial dimensions.³⁵ In this paper, the original four-dimensional model is used to create a more holistic approach to online banking service value by exploring first the relative importance of each of the dimensions and then describing the sub-dimensions of each dimension.

The paper contributes to previous research by suggesting a conceptual framework of online banking service value from a customer perspective. Online banking service value is proposed to be a multidimensional and hierarchical construct separated into sub-dimensions. Another contribution is the use of both qualitative and quantitative methods in an explorative study that builds on an abductive research approach.³⁶ The quantitative part of the study conducted as a conjoint task indicates the importance of temporal and spatial dimensions. The qualitative findings in turn indicate that each value dimension is multifaceted and in different ways can increase service value. The practical significance for the banking sector

involves the conceptualisation of online banking service value that emerges from theoretical and empirical analyses. The paper moves the focus of both research and marketing practice from service quality to service value.

SERVICE VALUE

Traditionally, customer perceived value has been seen as the trade-off between benefit and sacrifice,³⁷ where quality is the benefit and price is the sacrifice. Value has been defined as ‘the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given’.³⁸ Recently, by building on the correspondence between quality and value it was proposed that customer-perceived value is formed of technical, functional, temporal, and spatial dimensions that each can have benefit and sacrifice components.³⁰ This conceptualisation, extended from the perceived service quality model,³⁹ was argued to be especially relevant for technology-based self-services. Using this thinking it is possible to conceptualise online banking service value with these four dimensions. Considering a value-in-use perspective^{34,40} and using a comparison of different alternatives as reference point, it is argued that both benefit and sacrifice are embedded in the value dimensions.

Service value has been defined as the perceived outcome of the trade-off of the set of technical, functional, temporal, and spatial dimensions (Figure 1).³⁵ These intertwined service value dimensions represent the value of a specific service offering (what, technical value), created in a wanted way (how, functional value) and that is relevant in a specific time (when, temporal value) and location (where, spatial value). The value of online banking services is empirically measured and qualitatively explored based on this conceptualisation. Two research questions are posed. First, what is the relative importance of the four dimensions? Secondly,

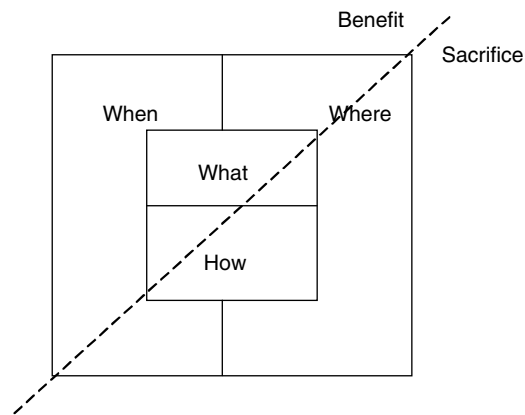


Figure 1 Four dimensions of service value

what are the reasons for the relative importance of the dimensions, that is what sub-dimensions are related to each value dimension?

Technical value

Technical value involves *what* the outcome of the service performance is. Traditionally it has been defined as the result of the service process³⁹ or the core service.⁴¹ In addition to the core service, the service offering also includes facilitating and supporting service that differentiates one service alternative from another.⁴² It has been argued that the ability to choose between service alternatives is relevant for e-services.³⁰

Functional value

Functional value denotes characteristics of the service delivery process and involves customer perceptions of the process *how* the service interaction occurs.³⁹ It involves different types of interactions with the service provider and can also refer to the customer's participation in the service process.⁴³ Accordingly, moving the focus on the customer's active role in the service process, the functional dimension involves customers' perceptions of their input in the service process instead of the interaction with the service employee.³⁰ It may be interactions

with the service system, for example a technological interface.

Temporal value

Temporal value represents customer perceptions of time issues *when* the service interaction occurs.³⁰ It contains the value of receiving the service in different time frames. Temporal value related to time allocations, time availability, time orientations, opening hours, and punctuality has been suggested to involve both benefits and sacrifice.³⁵

Spatial value

Spatial value involves customers' perceptions of the physical place and its appearance. It represents how the customer perceives the location *where* the service interaction occurs.³⁰ This dimension is important, as the service delivery of technology-based self-service options can enhance the availability of services. Similar to temporal value, spatial value has been suggested to include both benefit and sacrifice.³⁵

METHODOLOGY

An explorative study was conducted in a Finnish private banking context. One reason for choosing this setting was that banking services involve different types of technology-based self-services, such as ATMs, telephone services or online services. Bill payment services were used because they represent a standardised offering, delivered via multiple channels, offered on a continuum ranging from full service to self-service options, and created in technology-based or interpersonal interactions. Another reason is that in Finland online banking services are largely used to pay bills and the number of users is expected to increase. One of Finland's leading banks has estimated that almost half of all bill payments are performed via internet, and only 3 per cent are performed at branch offices.⁴⁴ The trend is consistent with all

Finnish banks as 66 per cent of all bank customers between 15 and 74 years use online banking services regularly and 64 per cent state that internet is the most common way to pay their bills is.⁴⁵

Online bill payments were studied in two empirical studies applying conjoint analysis and qualitative interviews. Conjoint analysis is a decompositional method for estimating the structure of respondents' preferences in relation to the overall evaluations of a set of predetermined alternatives.⁴⁶ It has been used previously to study consumer evaluations of services (eg, Oppewal and Vriens,¹⁰ DeSarbo *et al.*,⁴⁷ Ostrom and Iacobucci,⁴⁸ Carman⁴⁹). The first study represented a pilot study where the importance of the value dimensions was explored and study design was tested. Then in the following study, in addition to the conjoint study, interviews were conducted to receive qualitative data on what the value dimensions contain.

The four value dimensions were operationalised based on the definitions of the dimensions.^{30,50} The operationalisations were (1) choice of different service alternatives (what, technical dimension), (2) customers' input in the service (how, functional dimension), (3) choice of the time of service delivery (when, temporal dimension), and (4) choice of the place of service delivery (where, spatial dimension). The attributes were not separated into benefit and sacrifice; rather it is argued that when taking a perspective on value-in-use³⁴ and anchoring the evaluation in a comparison of different alternatives, the dimensions can be perceived as both value adding and value decreasing. This is attributable to the fact that in comparison to alternatives, an attribute is theoretically a sacrifice if it is inferior to the alternative. Hence, considering this trade-off, the dimensions have embedded both benefit and sacrifice.

A full profile method where each stimulus is described separately and consists of all attributes and variations of their levels⁵¹ was

used for both studies. After reducing the number of possible profiles with an additive composition rule and a fractional factorial design, the respondents were asked to evaluate the proposed 12 services that they could use. An example of a profile used is:

- I have smaller possibility to choose different services
- My own input in the service is the same as in my normal service
- I have smaller possibility to choose time of service delivery
- I have larger possibility to choose place of service delivery

The conjoint task was conducted as a personal interview. The respondents were verbally instructed and then shown the full profiles. They were asked to first arrange the profiles in preferred and not preferred profiles and then to rank-order each profile from most preferred to least preferred by comparing the profiles to their experience of the service that they currently are using. The respondents were also asked to share the thoughts that arose from the sorting procedure.

After sorting the profiles, the respondents were asked to describe the reasoning behind their sorting procedure. This provided in-depth information on why the dimensions were perceived as important. The findings were coded based on similarities and differences. Different themes for each dimension were identified to illustrate the characteristics of the dimensions. These themes cut across respondents and represent a synthesis of the findings. The qualitative data were grouped according to the value dimensions and themes were created inductively based on different attributes expressed by the respondents. Table 1 summarises the analytical procedure.

Based on the research design and with instructions from the author, senior marketing students collected data for the first study in spring 2002. The convenience sample

Table 1 Analytical procedure of qualitative data

<i>Analysis step</i>	<i>Process</i>	<i>Outcome</i>
Create an analysis structure Create initial codes	Identify relevant empirical data Structure the findings based on the analysis structure	Overview of the data Collect all related topics
Phrase codes according to respondents' wordings Categorisation of themes	Separation into technical, functional, temporal and spatial themes Categorisation based on benefit and sacrifice	Create preliminary themes Create subdimensions
Reduction of codes	Compare and contrast themes	Derive a manageable number of subdimensions

included 40 respondents (45 per cent female) aged between 19 and 76 years (median 27, mode 27). Another study conducted by the author in winter 2002–2003 was based on a critical case sample⁵² where a homogeneous group of respondents was chosen based on their technology experience, age, and usage of online banking. The age dispersion of 37 Finnish online bank customers (54 per cent female) was between 20 and 33 years (median 27, mode 27).

There are some strengths and weaknesses in the study design. The paper is explorative in nature where the objective was to develop a conceptualisation of online service value and deepen the understanding of the phenomenon. The goal was not to statistically confirm the conceptualisation. Conjoint analysis provides data on individual level, as well as on aggregate level and hence a smaller sample size than traditional quantitative techniques can be used.⁵¹ Moreover, a mixed-method model design was used for studying service value and this enabled a triangulation of the results. An abductive research design approach was used³⁶ and it involved that the analysis moves between theoretical and empirical reasoning with the goal to deepen the understanding about the topic. Qualitative and quantitative techniques were used in a parallel manner to deepen the conceptualisation with subdimensions of value based on interviews and to measure the relative importance of the dimensions with conjoint analysis.

It is plausible that there may be additional themes not present in these data. The respondents, however, raised issues related to each value dimension without explicit stimulus from the interviewer, and hence this indicates the relevance of each theme. Alternative approaches would have been to use a critical incident technique that has been used broadly to investigate consumer perceptions and behaviour^{53–55} and quality in a banking context.⁵⁶ A drawback, however, is the focus on extreme cases without including the importance or the frequency of the incident. In this respect, using semi-structured interviews that allowed the respondent to freely express different aspects in the service enabled a more realistic service evaluation.

EMPIRICAL FINDINGS

The choice of the place of service delivery (where) was found to be the most important attribute in the first study; the importance averaged across respondents was 33 per cent (Table 2).^{30,57} The choice of the time of service delivery (when) was second most important. In comparison, the two traditional dimensions thus represented lower value. The customers' input in the service (how) was more important than the choice of different service alternatives (what). The difference in the relative importance between the dimensions was, however, not particularly large.

Table 2 The relative importance of the value dimensions

	Study1 (%)	Study 2 (%)
Spatial dimension	33	40
Temporal dimension	29	28
Functional dimension	23	16
Technical dimension	15	16

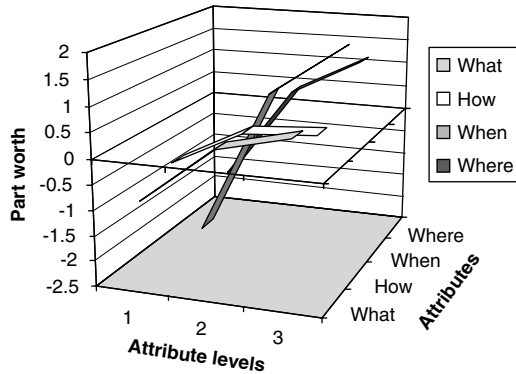


Figure 2 Attribute level part worth

The findings from the second study indicate again that time and location are the two most important dimensions. The temporal dimension as most important represents more than the combined importance of the technical and functional dimensions. The spatial dimension received a relative importance of 28 per cent. The technical and functional dimensions received the same importance weights (16 per cent).

The level part worths represent another perspective on the value dimensions as presented in Figure 2. In the second study none of the attribute level part worths are linear; rather, the form of the level part worths is saturating. The utility increases slower from level two to level three. The decrease from the current level to the lower level is highly negative. This suggests that the current level is satisfying, and improvements offer less additional value compared to a decrease in value for an inferior service.

Next, the reasons for the relative importance of the dimensions are

qualitatively discussed. Sub-dimensions to each value dimension are presented.

Technical value

Four themes related to technical value were identified. *Content* denotes the design of the service. It creates value if the design of the service is fit for the customers' needs and if it is clearly understood and up-to-date. A standardised bundle of advertisements and general information or lack of convergence to other services represent a sacrifice. The service must be customised according to needs; however, the risk is that the service becomes too customised.

I am not interested in what the bank has to offer because I can get information on stuff other than payments from work. I want basic services, not insurance and buying and selling stock. (p. 3305)

It is convenient because you can see, if you have many accounts, all your accounts. It is totally different from an ATM, where you cannot see, or if you go to a bank then you have to ask for the information. (p. 1908)

Price represents both the cost efficiency and monetary cost of using the service. Most respondents noted that it is a benefit if the price level is fair or cheaper than the alternatives. A sacrifice included tangible monetary costs for using the service and supporting service costs, such as cost for technology support. Some respondents would have expected lower service price because of their high input in the service process.

They charge me for not having to do their job any longer, and I think it is wrong. They charge me for a service that they do not have to do. The machines count automatically, and it goes via automated machines. (p. 2611)

Tangibles denote the physical evidence of the service. Necessary tangible parts of the service, such as identification numbers, can

be value decreasing as they are needed in order to be able to use the service process. Also, the fact that the service outcome is less tangible when the service is performed electronically is both a benefit and sacrifice.

The service shows information a certain period backwards, I do not know how long, but you cannot go backwards as far as you like. If I want to check something from the beginning of the year I cannot get it from the service. (p. 607)

Reliability involves the dependability of and trust in the service provider and service outcome. It relates to the fact that the service is based on sensitive information that must be handled carefully. Secure image represents a benefit and this is partly communicated through the physical evidence and partly through a functioning service process. Data secrecy is a sacrifice that involves the risk that an external party may get access to the information or that information disappears.

Because stuff is saved in the computer's memory I was against using [this service]. (p. 2104)

There is always a risk that the account information disappears. (p. 2617)

Functional value

Functional value involved three themes. *Process ease/functionality* denotes the ease of use and routinisation of the service process such as clarity, instructions, and simplicity. A downside is that an easy and routine service may also be experienced as technical execution. This represents a sacrifice, as there is a risk that the customer does not take the process seriously.

You learn quite quickly the system. Of course the first time you log on you think that aha it is a new bank, and that this was this and that was that, and where can I find the accounts and where can I find receipts

and where do I find the transactions and so on. But then once you are accustomed it is quite easy. (p. 2111)

The danger is that it is too easy. You lose control over it. You say that it is good and it is easy and then you enter it. I think that I once paid a bill two times. It says something about how easily one takes it. (p. 819)

Process support involves the input from the service organisation in the self-service. It is a benefit when the service organisation offers assistance and technical support. But a sacrifice is that the customer may be dependent on this external input in the service process such as competence and service recovery and may not be able to use the service correctly or at all.

I think that they create the possibility and maintain the system. In that way they serve the clients. But it is not that direct, more indirect, perhaps it is better. (p. 2914)

I think it is easier to clear it with a person first, and get more easily the information directly by asking. (p. 1302)

Customer input denotes the customer performing the service independently of company input. A self-service naturally gives the customer increased control and ability to influence the service process. A downside is that the self-service requires effort such as physical activity needed to perform the service as well as mental effort in terms of accuracy and self-reliance. Another sacrifice is that customers are to a larger extent responsible of the service outcome compared to a traditional interpersonal service, for example because little input from the service employee customers must rely on themselves to make sure that the outcome is accurate. This suggests that the role of the service provider is to create a service arena that enables and facilitates the service process.

I want to do it myself and then I know I do it correctly. The bank personnel have

probably paid many more bills than I and do it probably as good as I do, at least, if not better. But on a personal level it is still a stranger for me, I trust myself more than her. (p. 411)

I do a lot, it is much work to go through and enter all the codes and everything. (p. 1112)

Temporal value

Temporal value was linked to temporal latitude and time use. *Temporal latitude* denotes the possibility to pay bills independently of temporal restraints, including objectively measurable access, that is opening hours, and perceived access, that is the perceived choice of time of service delivery as well as perceived spontaneity and immediacy. Temporal restrictions in the service design result from service delivery problems, for example that the service, if not used for some time, is closed by itself, or regular updates closing down the service.

I can do it whenever I want to. I am not bound to the bank's opening and closing hours. (p. 205)

I noticed that especially with my bank that if I have the page open too long it throws me out. (p. 2114)

Time use, that is the efficiency of time spending was another temporal value theme. It is value-increasing when the tasks associated with service delivery can be conducted quickly, focused, and swiftly. The online service also enabled a more efficient and relaxed service process compared to going to the bank. Time spent on service delivery is, however, also time spent away from other activities. The service process is a sacrifice for example when the customer's roles are interfered, that is the time used for the service delivery interrupts or complicates other activities.

I can use the time that I put on life administration for something considerably more important. And more enjoyable and agreeable. Not waste time on such infrastructural things. (p. 1208)

I think that it is more peaceful to pay with the computer than at an ATM because there is always someone behind you or a few steps away waiting. Somehow you can calmly go through [the bills] and see that it went correctly and then confirm. I think it is nice, calmer to pay online. (p. 1511)

Spatial value

Three spatial value themes were identified. *Spatial latitude* related to spatial flexibility and restrictions of service use, such as own choice of service site and service delivery at multiple locations. The location where the service is used can also be combined with other activities. A restriction to the service access, however, relates to necessary equipment, internet connections, and computer setups.

I like to work a lot with the computer with other projects so it goes there quite rapidly with other things. (p. 2002)

Earlier I used an ATM but there are so few ATMs where I live now, only downtown and at the bank. (p. 1502)

Personal location involves the presence of other customers at the service location and influencing the service process. Because the customer can choose the service location, many disturbing factors such as other customers or service personnel can be removed. The interference from other people is, however, a sacrifice, for example that people disturb the service process, access private data from the cache memory of public computers, or that the information is publicly visible.

I would not do banking things at a public place. I want to keep it to myself. I see the place issue as a private space. (p. 1027)

It is more private. It feels safer to do it at home. Nobody looks over your shoulder. (p. 1105)

Service facilities denoted the perceived functionality of and distance to tangible elements in the service location. The location needs to be fit for purpose and fresh, and enables organisation and own adaptation of activities. Sacrifice involved perceived complexity of physical access, planning needed, and inconvenience related to tangibles, that is that passwords and codes are at another location when needed.

The ATMs are in bad condition, with the large use, it is nicer to be at home at your own computer. (p. 3222)

Conceptual model of online banking service value

A conceptual model of online banking service value is now proposed based on the findings (Figure 3). It extends previous research by illustrating online banking service value as a multidimensional and hierarchical construct and separating each value dimension into sub-dimensions.

Accordingly, four dimensions are included in online banking service value. Technical value includes content, price, tangibles, and reliability, and that value includes process ease/functionality, process support, and customer input. Temporal value involves temporal latitude and time use and spatial

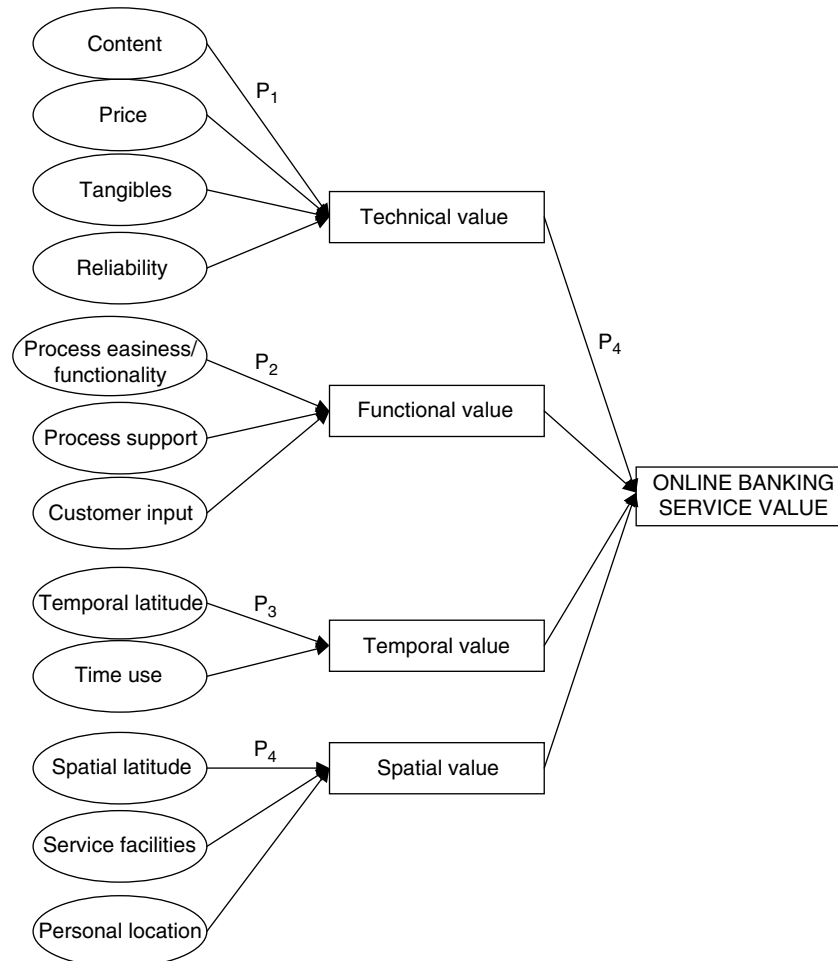


Figure 3 Conceptual model of online banking service value

value includes spatial latitude, spatial characteristics, and personal location. This model illustrates the multi-faceted nature of online banking services.

DISCUSSION AND CONTRIBUTION

The paper contributes to service marketing and banking research with the proposed conceptualisation of online banking service value. It focuses on the trade-offs between benefit and sacrifice and thus extends prior research on bank service quality. A conceptual model of online banking services was developed and the relative importance of four value dimensions was explored with two explorative studies based on a conjoint analysis and qualitative findings. The paper extends prior research on e-services by conceptualising online banking service value as a multidimensional and hierarchical construct and separating each value dimension into sub-dimensions. It suggests a holistic perspective of service value and a dynamic nature of value dimensions: although the separate value dimensions involve different aspects of the service value, as a whole they fulfil the same need.

Two studies were conducted: the first study represented a pilot study where the importance of the value dimensions was explored and study design was tested, the other study involved, in addition to the conjoint study, interviews to receive qualitative data on what the value dimensions contain. The findings were similar with minor differences indicating that the temporal and spatial dimensions — when and where — were perceived as most important value-adding aspects of online bill payments. The mutual order between the two most important dimensions differed in the studies. This may be attributable to the level of operationalisation as an attribute that is operationalised with more levels usually receives higher utility. The spatial dimension, operationalised with three levels, received higher utility than the temporal dimension,

operationalised with two levels, in the first study. In the second study, all dimensions had three levels, and the temporal dimension received higher utility than the spatial dimension.

The technical and functional dimensions — what and how — were less important. In fact, the temporal and spatial dimensions dominate service value, even to the point that the combined utility of the technical and functional dimensions is smaller than the utility of the temporal dimension.

The qualitative findings indicated that one main driver of online service value is temporal and spatial flexibility, and this explains the high utility of the temporal and spatial dimensions. Some of the sub-dimensions of technical and functional value also denote flexibility and convenience similar to the temporal and spatial dimensions. The service involves technical value if it supports customers' activities, by attending to specific needs, and being clear and trustworthy. Functional value is also related to this aspect of enabling value creation, that is ease of use, little effort, and support from the service employee.

All dimensions are according to the data dissatisfiers or qualifying criteria.⁵³ However, especially the temporal and spatial dimensions are highly sensitive to changes as lower levels of the dimensions reduce significantly service value, while higher levels do not provide much additional value. In other words, the temporal and spatial dimensions involve a more dramatic effect of performing lower than the normal standard. In contrast, the technical and functional dimensions involve lower levels of sensitivity, and changes in the performance do not influence the value in such a significant way. It is more difficult to improve the service value by manipulating these dimensions, but in contrast it is less likely that a decrease in the normal standard will cause a clear negative effect.

Following previous research,^{58,59} it can be suggested that the importance of the dimensions may evolve. It can be argued that

while the temporal and spatial dimensions are currently most important, the technical and functional dimensions may potentially be value-adding in the future. This is attributable to the fact that although the respondents did not find the dimensions as important as the temporal and spatial dimensions, technical and functional value included more sub-dimensions compared to the temporal and spatial dimensions. In the future, the traditional value dimensions can be used to increase the total value of the e-service.

Temporal and spatial value was also linked to other factors than flexibility. This provides basis for the asymmetry and dynamism of the dimensions and it represents a future potential in the service value. It is suggested that temporal and spatial flexibility provides hygiene level of value. Temporal efficiency and site appropriateness in turn create additional value. This means that the value of online banking service may be moving away from merely availability to more deep-seated elements of time and location.

LIMITATIONS AND FURTHER RESEARCH

The empirical study was focused on online bill payments characterised as routine online transactions. It is reasonable that the results are applicable for other similar transactional services, such as buying airline tickets online as the respondents mentioned that they wanted flexibility in their activities in general, not merely in relation to banking activities. Further studies, however, need to explore the importance of the dimensions for more complex services. Does the same structure of the value dimensions apply when considering knowledge-intensive services such as loan applications? Time and location may be less important for services that require much input from the service provider, and the customer may trade-off temporal and/or spatial flexibility for more information and assistance.

This conceptualisation applied for e-services may also be used for traditional

service contexts. It is plausible that the time and location of the service process are relevant for traditional services, such as retailing services where temporal and spatial accessibility may be increasingly important. Although the *degree* of the relative importance of the value dimensions may vary, the *existence* of the value dimensions is possible in different contexts, due the abstract nature of the dimensions. Future research needs to compare e-services with traditional interpersonal services to identify differences in the value perceptions.

Although the proposed sub-dimensions of each value dimension are present in this specific context, further studies with larger samples are needed to quantitatively validate and generalise the findings from this study. The conceptualisation and the proposed hypotheses can be directly used. Here it is relevant to carry out a non-convenient survey of a large sample of online bill payment service users and analyse the data with structural equation modelling. Future research also needs to qualitatively explore possible themes across different services in order to identify and operationalise further value dimensions and subdimensions. Other themes may be relevant for different services; for example, it is probable that emotional aspects related to the functional dimensions are relevant for more experience-based services, such as online entertainment services. It is also necessary that the value dimensions are operationalised with specific attributes based on a contextually and managerially relevant evaluation of service elements.

MANAGERIAL IMPLICATIONS

The paper has implications for developing e-services and segmenting customers. Understanding online banking service value from a customer perspective is relevant for managing and supporting both the bank's and the customer's value creation processes. The four-dimensional value model can be used

for monitoring and measuring service value. The conceptual framework indicates that it is no longer sufficient to only focus on the process and outcome aspects of service delivery; rather service marketers must put considerably more attention on the context in service design. In other words, time and location can be used to differentiate the service and create additional value for customers. The bank can support the customer in creating value in different ways by facilitating the customer's interaction with and use of the bank's products and services at all contact points.

The four-dimensional value model can also be used to understand differences in user segments according to the preference for different value dimensions. For example, some customers value extensive service offerings in order to have alternative paths for their activities and are unlikely to value the temporal and spatial benefits provided by online services. In contrast, other customers may want a streamlined service and value the temporal and spatial flexibility provided by the digital service delivery channels. By assessing the relative importance of the value dimensions, different customer segments that are likely to value the service can be identified, described, and ultimately pursued. In practice, temporal and spatial dimensions are communicated to customers that value time and location flexibility. The technical dimension in turn may be accentuated for customers that value core service attributes, such as a number of different service alternatives.

Moreover, the traditional technical and functional dimensions need more focus. Although the temporal and spatial dimensions currently dominate service value, the findings indicated that the technical and functional dimensions involve many sub-dimensions that potentially create value. This suggests that e-services must evolve from representing merely flexibility and convenience to providing full service. Managers need to acknowledge that the future potential in creating value-adding

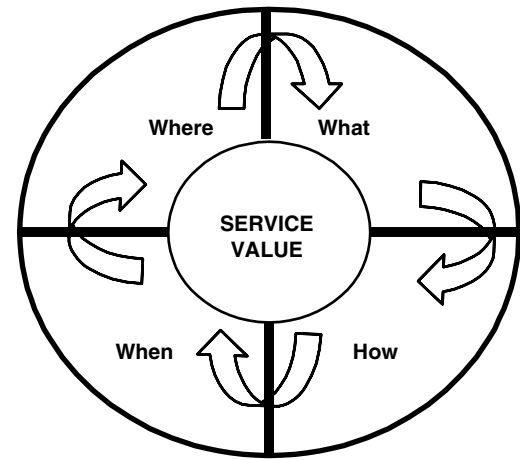


Figure 4 Dynamic nature of service value

e-service may come from the technical aspects of the service. Designing a compelling package of customised service elements can create a competitive advantage. Depending on the service lifecycle and/or the consumer's stage in the adoption process, the focus thus needs to be on different value dimensions.

The dynamic nature of customer perceived value can be illustrated in the following way (Figure 4). Moving from a strong focus on technical aspects of the service outcome, through a focus on functional aspects of the service process, the digitalisation of services created an environment where temporal aspects dominated e-services. Currently, a focus on spatial aspects can be seen especially in mobile and wireless services. In the future, the focus could be moved back to the starting point but still accounting for the full circle of the total service offering based on all four dimensions.

Hence, managers need to consider the total service offering of four value dimensions. All dimensions should be monitored and developed as they together represent total service value. The findings indicated that although the separate value dimensions involve different aspects of the service value, as a whole they fulfil the same need. For example, the technical and

functional dimensions complement the temporal and spatial flexibility that customers seek in online banking services.

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REFERENCES AND NOTES

- 1 Dabholkar, P. A. (1994) 'Technology-based service delivery: A classification scheme for developing marketing strategies', in Swartz, T.A., Bowen, D.E. and Brown S.W. (eds) 'Advances in Services Marketing and Management', JAI Press Inc., Greenwich, pp. 241–271.
- 2 Meuter, M. L. and Bitner, M. J. (1998) 'Self-service technologies: Extending service frameworks and identifying issues for research', in Grewal, D. and Pechmann, C. (eds) 'AMA Winter Educator's Conference Marketing Theory and Application', American Marketing Association, Chicago, pp. 12–19.
- 3 Meuter, M. L., et al. (2000) 'Self-service technologies: Understanding customer satisfaction with technology-based service encounters', *Journal of Marketing*, Vol. 64 (July), pp. 50–64.
- 4 Gummesson, E. (1993) 'Quality management in service organizations: An interpretation of the service quality phenomenon and a synthesis of international research', Research report nr 1, ISQA Service Quality Association.
- 5 Bitner, M. J., Brown, S.W. and Meuter, M. L. (2000) 'Technology infusion in service encounters', *Journal of the Academy of Marketing Science*, Vol. 28, No. 1, pp. 138–149.
- 6 Bahia, K. and Nantel, J. (2000) 'A reliable and valid measurement scale for the perceived service quality of banks', *International Journal of Bank Marketing*, Vol. 18, No. 2, pp. 84–91.
- 7 Avkiran, N. K. (1994) 'Developing an instrument to measure customer service quality in branch banking', *The International Journal of Bank Marketing*, Vol. 12, No. 6, pp. 10–18.
- 8 Holmlund, M. and Kock, S. (1996) 'Relationship marketing: The importance of customer-perceived service quality in retail banking', *The Service Industries Journal*, Vol. 16, No. 3, pp. 287–304.
- 9 Johnston, R. (1997) 'Identifying the critical determinants of service quality in retail banking: importance and effect', *International Journal of Bank Marketing*, Vol. 15, No. 4, pp. 111–116.
- 10 Oppewal, H. and Vriens, M. (2000) 'Measuring perceived service quality using integrated conjoint experiments', *International Journal of Bank Marketing*, Vol. 18, No. 4, pp. 154–169.
- 11 Aldlaigan, A. H. and Buttle, F. A. (2002) 'SYSTRA-SQ: A new measure of bank service quality', *International Journal of Service Industry Management*, Vol. 13, No. 4, pp. 362–381.
- 12 Joseph, M., McClure, C. and Joseph, B. (1999) 'Service quality in the banking sector: The impact of technology in service delivery', *Journal of Bank Marketing*, Vol. 17, No. 4, pp. 182–191.
- 13 Jun, M. and Cai, S. (2001) 'The key determinants of Internet banking service quality: A content analysis', *International Journal of Bank Marketing*, Vol. 19, No. 7, pp. 276–291.
- 14 Zhu, F. X., Wymer, W. J. and Chen, I. (2002) 'IT-based services and service quality in consumer banking', *International Journal of Service Industry Management*, Vol. 13, No. 1, pp. 69–90.
- 15 Marr, N. E. and Prendergast, G. P. 1993 'Consumer adoption of self-service technologies in retail banking: Is expert opinion supported by consumer research?', *The International Journal of Bank Marketing*, Vol. 11, No. 1, p. 3.
- 16 Lockett, A. and Littler, D. (1997) 'The adoption of direct banking services', *Journal of Marketing Management*, Vol. 13, No. 8, pp. 791–811.
- 17 Barzak, G., Ellen, P. S. and Pilling, B. K. (1999) 'Developing typologies of consumer motives for use of technologically based banking services', *Journal of Business Research*, Vol. 38, pp. 131–139.
- 18 Al-Ashaban, A. A. and Burney, M. A. (2001) 'Customer adoption of tele-banking technology: The case of Saudi Arabia', *International Journal of Bank Marketing*, Vol. 19, No. 5, pp. 191–200.
- 19 Curran, J. M. and Meuter, M. L. (2005) 'Self-service technology adoption: Comparing three technologies', *Journal of Services Marketing*, Vol. 19, No. 3, pp. 103–113.
- 20 Karjaluoto, H. (2002) 'Selection criteria for a model of bill payment: Empirical investigation among Finnish bank customers', *International Journal of Retail & Distribution Management*, Vol. 30, No. 6, pp. 331–339.
- 21 Santos, J. (2003) 'E-service quality: A model of virtual service quality dimensions', *Managing Service Quality*, Vol. 13, No. 3, pp. 233–246.
- 22 Kaynama, S. A. and Black, C. I. (2000) 'A proposal to assess the service quality of online travel agencies: An exploratory study', *Journal of Professional Services Marketing*, Vol. 21, No. 1, pp. 63–88.
- 23 Dabholkar, P. A. (1996) 'Consumer evaluations of new technology-based self-service options: An investigation of alternative models of service quality', *International Journal of Research in Marketing*, Vol. 13, pp. 29–51.
- 24 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*, Vol. 28, No. 1, pp. 67–86.
- 25 Yang, Z. and Jun, M. (2002) 'Consumer perception of e-service quality: From Internet purchaser and non-purchaser perspectives', *Journal of Business Strategies*, Vol. 19, No. 1, pp. 19–41.
- 26 Surjadjaja, H., Ghosh, S. and Antony, J. (2003) 'Determining and assessing the determinants of e-services', *Managing Service Quality*, Vol. 13, No. 1, pp. 39–53.
- 27 Gounaris, S. and Dimitriadis, S. (2003) 'Assessing service quality on the web: Evidence from business-to-consumer

- portals', *Journal of Services Marketing*, Vol. 17, No. 5, pp. 529–548.
- 28 Zeithaml, V. A., Parasuraman, A. and Malhotra, A. (2005) 'E-S-QUAL: "A multiple-item scale for assessing electronic service quality"', *Journal of Service Research*, Vol. 7, No. 3, pp. 213–233.
- 29 Chen, Z. and Dubinsky, A. J. (2003) 'A conceptual model of perceived customer value in e-commerce: A preliminary investigation', *Psychology & Marketing*, Vol. 20, No. 4, pp. 323–347.
- 30 Heinonen, K. (2004) 'Reconceptualizing customer perceived value — The value of time and place', *Managing Service Quality*, Vol. 14, No. 2/3, pp. 205–215.
- 31 Lin, C. -H., Sher, P. J. and Shih, H. -Y. (2005) 'Past progress and future directions in conceptualizing customer perceived value', *International Journal of Service Industry Management*, Vol. 16, No. 4, pp. 318–336.
- 32 Mathwick, C., Malhotra, N. K. and Rigdon, E. (2001) 'Experiential value: Conceptualization, measurement and application in the catalog and Internet shopping environment', *Journal of Retailing*, Vol. 77, No. 1, pp. 39–56.
- 33 Grönroos, C. (1991) 'Scandinavian management and the Nordic School of Services — Contributions to service management and quality', *International Journal of Service Industry Management*, Vol. 2, No. 3, pp. 17–25.
- 34 Edvardsson, B., Gustafsson, A. and Roos, I. (2005) 'Service portraits in service research: A critical review', *International Journal of Service Industry Management*, Vol. 16, No. 1, pp. 107–121.
- 35 Heinonen, K. (2006) 'Temporal and spatial e-service value', *International Journal of Service Industry Management*, Vol. 17, No. 4, pp. 380–400.
- 36 Kovacs, G. and Spens, K. (2005) 'Abductive reasoning in logistics research', *International Journal of Physical Distribution & Logistics Management*, Vol. 35, No. 2, pp. 132–144.
- 37 Monroe, K. B. (1990) 'Pricing: Making Profitable Decisions', McGraw-Hill, New York.
- 38 Zeithaml, V. A. (1988) 'Consumer perceptions of price, quality and value: A means-end model and synthesis of evidence', *Journal of Marketing*, Vol. 52 (July), pp. 2–22.
- 39 Grönroos, C. (1982) 'Strategic Management and Marketing in the Service Sector', Swedish School of Economics and Business Administration, Helsinki.
- 40 Vargo, S. L. and Lusch, R. F. (2004) 'Evolving to a new dominant logic for marketing', *Journal of Marketing*, Vol. 68 (January), pp. 1–17.
- 41 Holmlund, M. (1997) 'Perceived Quality in Business Relationships, in Marketing and Corporate Geography', Swedish School of Economics and Business Administration, Helsinki.
- 42 Grönroos, C. (2000) 'Service Management and Marketing a Customer Relationship Management Approach', 2nd edn, John Wiley & Sons, Chichester.
- 43 Kelley, S. W., Donnelly, J. H. and Skinner, S. J. (1990) 'Customer participation in service production and delivery', *Journal of Retailing*, Vol. 66, No. 3, pp. 315–335.
- 44 Hankkila, T. (2003) 'Pankkien internetpalvelujen käyttö kovassa kasvussa' [High Growth of the Use of Internet Bank Services], Kauppalehti, Helsinki, Finland, 23.2003, p. 6.
- 45 Survey on Saving and Use of Credit. (2005) 'Survey on Saving and Use of Credit', Finnish Banker's Association, Helsinki.
- 46 Green, P. E. and Srinivasan, V. (1978) 'Conjoint analysis in consumer research: Issues and outlook', *Journal of consumer research*, Vol. 5 (September), pp. 103–123.
- 47 DeSarbo, W. S., et al. (1994) 'On the measurement of perceived service quality: A conjoint analysis approach', in Rust, R. T. and Oliver, R. L. (eds) 'Service Quality: New Directions in Theory and Practice', Sage Publications, Thousand Oaks, pp. 201–222.
- 48 Ostrom, A. L. and Iacobucci, D. (1995) 'Consumer trade-offs and the evaluation of services', *Journal of Marketing*, Vol. 59 (January): pp. 17–28.
- 49 Carman, J. M. (2000) 'Patient perceptions of service quality: Combining the dimensions', *Journal of Services Marketing*, Vol. 14, No. 4, pp. 337–352.
- 50 More information on the design as well as the operationalisation of the conjoint study can be found in a previous article where the same data have been used³⁰.
- 51 Hair, J., Anderson, R., Tatham, R. and Black, W. (1998) 'Multivariate Data Analysis', 5th edn, Prentice Hall, Upper Saddle River.
- 52 Patton, M. Q. (2002) 'Qualitative Research & Evaluation Methods', Sage Publications Inc., Thousand Oaks.
- 53 Johnston, R. (1995) 'The determinants of service quality: Satisfiers and dissatisfiers', *International Journal of Service Industry Management*, Vol. 6, No. 5, pp. 53–71.
- 54 Roos, I. (1998) 'Switching Paths in Customer Relationships', Swedish School of Economics and Business Administration, Helsinki.
- 55 Voima, P. (2001) 'Negative Internal Critical-incident Processes: Windows on Relationship Change, in Marketing and Corporate Geography', Swedish School of Economics and Business Administration, Helsinki.
- 56 Olsen, M. J. S. (1992). *Kvalitet i banktjänster: Privatkunders upplevda problem med banktjänster — en studie med hjälp av kritisk-händelse-metoden*, Doktorsavhandling vid Stockholms Universitet och Centrum för Tjänsteforskning (CTF), Karlsbad [Quality in banking services: customer's perceived problems with bank services — A study with the aid of critical incident technique], Doctoral thesis, The University of Stockholm and Center for Service Research (CTF), Karlstad, Sweden.
- 57 A detailed presentation of the findings from the conjoint study was published previously,³⁰ and the results are presented only briefly in order to be able to discuss the conjoint findings relative to the qualitative findings.
- 58 Galloway, L. (1999) 'Hysteresis: A model of consumer behaviour?', *Managing Service Quality*, Vol. 9, No. 5, pp. 360–370.
- 59 Nilsson-Wittel, L. and Fundin, A. (2005) 'Dynamics of service attributes: A test of Kano's theory of attractive quality', *International Journal of Service Industry Management*, Vol. 16, No. 2, pp. 152–168.