Value proposition in m-commerce: exploring service provider and user perceptions

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Abstract. Adoption of mobile services and m-business outcomes has not yet reached expectations. The uncertainties in m-commerce are still many occasioning a need to explore challenges and opportunities. This study provides empirical data on perceptions of value proposition in m-commerce from the supplier as well as the demand side. The first is addressed in an interview study with newspaper publishers that offer mobile services, and the second in a broad survey of 1388 mobile service users. The findings show that there are similarities as well as differences in perceptions of value held by service providers and users of mobile services. Ubiquity and service provider/user relationship were identified as general service characteristics whereas localization, personalization, convenience and socialization were identified to be mobile service value dimensions. The aim is to provide useful insights for service providers to better meet the market demands in consumer m-commerce.

Key words: m-commerce, mobile services, value proposition

1. Introduction

New and improved technology in computing and telecom enable anytime, anywhere access to mobile services in mass-scale through a multitude of devices (Lyytinen & Yoo, 2002). Today, the penetration of mobile phones is very high, in 2006 as high as 110% in both Italy and Sweden [1]. Given this, hopes for lucrative business of mobile services have grown among service providers. However, in spite of this development the mobile service market has not met expectations (see e.g. Carlsson *et al*., 2006; Constantinou *et al*., 2005).

A growing body of research into mobile services and m-commerce has sough to understand the reasons for this disappointing development (Amit & Zott, 2001;

Carlsson *et al*., 2005; Constantinou et. al., 2006; Mallat *et al*., 2006; Pedersen *et al*., 2002; Samtini *et al*., 2003; Sarker *et al*., 2003; Vrechopoulos *et al*., 2003). Among the explanations are usability factors, technological factors and business model related factors. Indeed, the sources of uncertainty are many (Tilson *et al*., 2004). One of these uncertainties is related to the relative novelty of m-commerce, making it very difficult to calculate how people act as a respone to a new services. The rapid introduction of new mobile technology and new services has led to a situation where new appliances and services are experimented with. As people are introduced to new technology uses, initially it is integrated with daily habits. The ubiquity of mobile services challenges peoples old habits, and these are difficult to break (Jessup & Robey, 2002). In turn, as use patterns changes new demands and expectations emerge which leads to uncertainty about what people value and are willing to pay for (Tilson *et al*., 2004)? Thus, understanding value proposition in m-commerce is indeed a pressing issue.

As pointed out by Keen and Mackintosh (2001) there is a need to understand the supply side as well as the demand side of value proposition. In line with this argument this paper will seek to understand value proposition in m-commerce by empirically addressing both sides. With the above in mind, this research is set out to conduct a study that explores the various aspects of value proposition in m-commerce by addressing the research question: *how do content providers define value proposition of mobile services and how are these values perceived by users (consumers).* The study is limited to the value proposition related to services offered to a wide audience on a consumer market. This paper aims at contributing to the understanding of value proposition in m-commerce by providing service providers with useful insights to better meet the market demands.

The context studied here is newspaper organizations offering mobile services to a wide audience. This is a good setting to study since the possibilities and opportunities in m-commerce are especially attractive to these companies (Ziv, 2005). Their core business is information and news services In addition, this industry is undergoing radical change towards a ubiquitous media environment within which mobile services offered in the telecom infrastructure is an important part (Åkesson & Ihlström, 2006). Moreover, as the disappointments described above have been experienced by these organizations this setting is especially interesting to study.

The remainder of this paper is structured as follows. Section 2 presents a brief overview of literature addressing mobility and value proposition in m-commerce. Then, a description of the chosen research approach is given in section 3, and the empirical findings are presented in section 4. This is followed by a discussion of the findings in section 5, and finally, in section 6 some concluding implications will be discussed.

2. Value proposition in m-commerce

Value proposition is a classical concept in marketing and can be understood as the relationship between an offer and customer needs (Porter, 1998). In the case of consumer mobile services the value proposition can be to satisfy user needs of information such as news and stock-market reports or entertainment such as games and music downloads in mobile settings (Clarke, 2001; Camponovo & Pigneur, 2003). Value proposition in m-commerce build on the fundemental benefits of mobility.

The concept of mobility is not limited to user's physical movements, mobility is also related to the interaction people perform (Kakihara, & Sørensen, 2001). There are three dimensions to mobility; *spatiality*, *temporality* and *contextuality*. Spatiality refers to geographical movements of users and resources, temporality to time aspects, and contextuality to physical and social circumstances.

Still, the most fundamental benefit of mobile services is of course the ability to wirelessly access services in different locations and through mobile devices (Lyytinen & Yoo, 2002). This enables to make use of user's location in service offers. Location-based services add value by utilizing this information and are regarded as a core feature of future mobile services and a possible source for revenue growth (Tilson *et al*., 2004).

Another beneficial feature of mobile services is personalization (Abowd & Mynatt, 2000; Lyytinen & Yoo, 2002; Rao & Minakakis, 2003). Personalization increases personal relevance by making it possible to customize services to personal preferences and interests.

Temporality or time aspects are of course also important for customization. Mobile value can differ depending on time setting (Anckar & DÍncau, 2002). Alerting services and remainder services can be of value in time critical arrangements. Services such as games and entertainment can be of value for killing time or having fun. In situations where dead time slots, such as waiting for flight, efficiency ambitions might be the benefit of using mobile services.

However, benefits of mobile services are perceived differently in different contexts (Mallat *et al.*, 2006). In a study investigating mobile ticketing services for public transportation Mallat *et al.* (2006) found that intention to use mobile services are influenced by use situation circumstances such as availability of other alternatives and time pressure in the service use situation. This indicates that benefits of mobile services are dependent on the situation in which they are used.

In the Telecom industry, the value of mobile services is strongly related to the features described above. NTT DoCoMo [2] presents guidelines including the features; constant updates, that content needs to be clear and comprehensive, and to provide accesses to related information, Further, the services need to be readable, understandable and esthetically attractive. These are the minimum requirements for publishing content in the NTT DoCoMo portal for i-mode

services. NTT DoCoMo has defined that to provide user value at an affordable price services need to provide immediacy, ubiquity, mobility and utility. In other words, the services need to be available when and wherever the user needs them. At Nokia [3], mobile service experience quality is regarded as having two dimensions: reliability and comfort. Reliability is described as the availability (anywhere), accessibility (anytime), and maintainability of the content, network and/or user device application. On the other hand, comfort is described as the quality of content, the bearer service and/or the software features of the device (ease of use).

There is also literature addressing value more specifically related to m-commerce such as m-business value-chains (Camponovo & Pignuer, 2003), a framework explaining customer and network value relation to business viability (Bauman et. al., 2005), and exploration of attributes perceived as important by consumers for making m-commerce choices (Mahatanankoo et. al., 2004). Value proposition has been explicitly addressed with a suggested conceptual framework for m-commerce described as a value life-cycle (Osterwalder & Pigneur, 2003), and a typology for value proposition dimensions (Clarke, 2001). Clarke (2001) summarizes the unique value proposition dimensions related to m-commerce to be: *ubiquity, convenience, localization,* and *personalization* (see Figure 1).

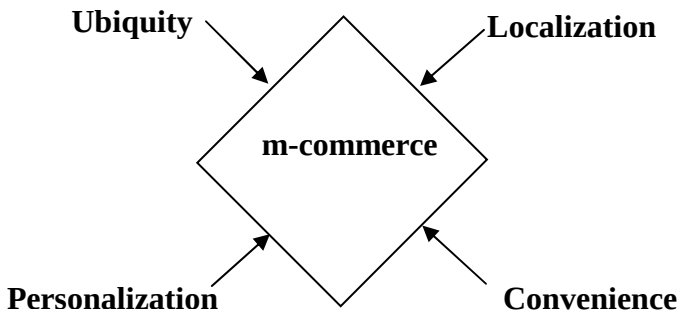

Figure 1. Value proposition of mobile commerce (Clarke, 2001) p. 137.

Ubiquity refers to value offerings that will be provided everywhere and anytime. *Convenience* is related to the factors creating time and place utility for users, i.e. the service can be used at their convenience. *Localization* is about value is on the relevance depending on users geographical position. Finally, *personalization* regards value propositions based on individual preferences. Clarke (2001) suggests this to be a generic topology to understand customer benefits from m-commerce.

Given this portrayal, it can be acknowledged that values of mobile services are unique. Consequently, value proposition is difficult to communicate to the intended audience (Ostwalder & Pigneur, 2003). Offering mobile services is certainly a complex adventure for service providing organizations. The goal with this study is to contribute to reducing this complexity. In this paper, the typology

by Clarke (2001) will serve as a typology to analyze publishers and users perceptions of mobile service value. In this paper the aim is to investigate what publishers intended values are and how users that have adopted mobile services and regularly use them value, rather than explaining what drove them to use mobile services in the first place. Therefore the typology by Clarke (2001) is suitable. First, this typology is generic in that it addresses the benefits described above, second it addresses mobile service value from an m-commerce perspective in that these values are seen as value dimensions of a mobile service from a consumer perspective rather than as dimensions of the mobility concept.

3. Research approach

The research presented in this paper was carried out within a two-year European research project exploring future mobile news services, DigiNews (ITEA 03015), finished at mid-year 2006.

In order to explore content provider as well as user perceptions the study needed to adapt methods suitable for different contexts. Therefore, we have taken a multi method approach (Mingers, 2001). Using multiple methods in m-commerce research has been recommended by Leher and Watson (2001). First, newspaper staff involved in new digital media and development of future services and business models were interviewed. Second, the findings from interviews were used as a basis for a broad survey studying how users perceive value propositions. In both studies, mobile services offered by the newspaper organizations were addressed such as news services and information services.

3.1 Interview study with content providers

The selection of respondents was done on the basis of engagement in the development of new services and business models. The interviews covered topics related to the scope of the project, however the reporting in this paper is limited to topic of mobile services and value proposition. In total, there were 18 interviews with newspaper staff (see Table 1 on the next page).

Newspaper	Title	Date	Abrev.
Norrköpings Tidningar	Editor-in-chief new media	Aug 25th 2004	NT1
Östgöta Correspondenten	Business developer	Aug 25th 2004	ÖC1
Sydsvenskan	Marketing manager	Sep 16th 2004	SS1
Sydsvenskan	Layout director	Sep16th 2004	SS2
Sundsvalls Tidning	Quality Assurance Manager	Oct 6th 2004	ST1
Sundsvalls Tidning	Editor	Oct7th 2004	ST2
Sundsvalls Tidning	Web publisher	Oct 7th 2004	ST3
Aftonbladet	Editor-in-chief new media	Oct 20th 2004	AB1
Aftonbladet	Layout director	Oct 20th 2004	AB2
Göteborgs-Posten	Development director	Oct 27th 2004	GP1
Göteborgs-Posten	Managing Development Editor	Oct 27th 2004	GP2
Sundsvalls Tidning	CEO	Nov 24th 2004	ST4
Concentra Media	Head of research	Mar 23rd 2005	CM
Norrköpings Tidningar	Head of Editorial Department	Apr 27th 2005	NT2
De Telegraaf	Director of new media	Nov 22nd 2005	DT1
De Telegraaf	Development officer	Nov 22nd 2005	DT2
De Telegraaf	Editor	Nov 22nd 2005	DT3
Le Monde	Chief Operations Officer and Managing Director	Feb 3rd 2006	LM

Table 1. Overview of interviews and respondents

The 18 interviews were 60-90 minutes long and followed a semi-structured interview guide aiming at consistency between the interviews. While allowing individual perspectives to emerge the interview guide provided a systematic way of delimiting topics discussed in the interview (Patton, 2002). The interviews were all recorded and transcribed. The data collected in the interviews was coded and sorted according to the generic typology of value proposition dimensions as described by Clarke (2001) i.e. *ubiquity*, *convenience*, *localization*, and *personalization*. There were data that did not fit into this typology, which was analyzed to find common patterns. This resulted in the emergence of a fifth dimension of value proposition, here named *socialization*.

3.2 Survey of mobile service users

A questionnaire was presented at the web sites of three Swedish newspapers; Aftonbladet, Göteborgs-Posten and Sundsvalls Tidning, during April 2006 (see Table 2).

Newspaper	*URL*	*Unique visitors/day*	*No. of respondents*
Aftonbladet	aftonbladet.se	1.200.000	3757
Göteborgs-Posten	gp.se	41.500	135
Sundsvalls Tidning	st.nu	14.500	447

Table 2. Newspapers hosts for questionnaires and number of respondents

Web samples can be regarded as representative as traditionally collected samples because of the heterogeneity of the online population (Buchanan & Smith, 1999). There is of course a risk of respondents submitting several questionnaires, therefore we blocked for more than one submission per IP number.

The questionnaire was divided in four parts concerning background data, business models for digital news services, preferences for future electronic news, and value of mobile services. The fourth part about mobile services was only presented to mobile service users. The respondents that had given an age under 15, those who did not complete or answered the questions contradictorily were excluded form the dataset. The dataset contains 3626 respondents of whom 1388 (38.3%) are mobile services users and 2238 (61.7%) do not use mobile services.

The questions about mobile services were constructed from the five value proposition dimensions identified from literature and the analysis of data from newspaper publisher organizations. This resulted in 31 statements with a 7-grade Lickert scale.

The responses to the questionnaire were analyzed using SPSS v14.0. The analysis focused on calculation of mean scores and standard deviations for each statement. The goal was to generate an overview of what seems to be of importance for user perceptions of value within each value proposition dimension.

To validate the typology of value proposition dimensions, a factor analysis was used. This provided a classification of how users perceive value and allowed the elimination of items with low factor loadings. Further, this approach allowed us to explore new relationships of value proposition dimensions. For sample sizes 350 and larger the significance level for a factor loading is 0.30 or above (Hair *et* a*l*., 1995). In the factor analysis 15 items with low factor loadings (>0.3) or cross-factor loadings were eliminated to ensure the factors to be unidimensional and distinct.

4. Findings

First, the results from the interview study are presented followed by the findings from the survey.

4.1 Intended value proposition

Background

The newspaper organizations in this study differ in size and scope. Some are small local newspapers, some are large nationwide newspapers. However, they have a common branch interest in exploring the opportunities of mobile services and in assuring their position as content providers in mobile media, for the

user/consumer market as well as the advertiser market. The prior is the interest discussed in this paper.

Some offer simple news headlines or SMS based alerting services and some offer advanced services such as personalized sport services and location-based guide services. These services are offered through different operator portals or even by-passing telecom operators by software downloadable directly to the user's phones.

When discussing the over all challenges with mobile service offerings the newspaper organizations emphasize the challenge of ensuring user value greater than the technical challenges. Another critical issue emphasized is the revenue split between the different stakeholders in the telecom value-chain, nevertheless this topic is out of the scope of this paper. Hereafter, the findings from the interviews related to value proposition dimensions are reported.

Ubiquity

The respondents in this study agree that future users will expect services to be available at any location at any time which will require 24/7 publishing. The interviewees regard this as one of the most important opportunities, to provide services to their local or national audience while on travel or on vacation as well as commuting to work.

To offer this value, the understanding is that content must be relevant to users situation. Some of the respondents with the most experience from offering mobile services recognize the challenge of predicting uses perceptions of relevance and thereby being able to integrate relevance in the service offer. They have experiences from successful services such as real-time news and sports results, but there are also services that have been less successful and have been drawn back such as real-time auction services. Relevance is regarded as a very important aspect of value by the respondents meaning that relevance is related to individuals as well as groups of people sharing some common interest. To add relevance to mobile services, targeting of audiences is regarded to be the key as illustrated by this comment:

> "Well you can target with device or with content? Initially we asked - Who has a mobile phone? and maybe adapt content to that group of people. Or you can think - Who needs this content? then publish it where you reach these people."

Convenience

To offer convenience value analyzing how a user or a group of users can benefit from a service to their own convenience is essential. One aspect of added value discussed is how to support people's everyday life with services offering utility and experiences that the users desire. This can be services of communication and information utility or services that entertain as well as provide e.g. a learning experience. This means that the newspapers are expanding their service repertoire into new areas as this comment shows:

> "Since we started to think in user experience we have considered going into new areas. There are some new areas we like to go in to that we are not in today. Dating services, entertaining services, local services, now we have different categories or types of services. Notification and alerting services – must come first – before the news is published. People want to be the first who knows…Entertainment, games, movie selections etc, and information services like, weather, you name it."

A big challenge for offering these values is regarded to be the limitations of the devices, especially the limited screen size. Part of the convenience value is regarded as the ability for users to get a good overview of service offerings as well as the contents within a service.

Localization

The most important aspect that these interviewees agree on is that news and other services should be locally anchored. This is of course regarded as very important by the smaller local newspapers as this is the core of their business. However, making use of user's physical location is an opportunity that is discussed with mixed feelings. There is a tension between usefulness of location information and the integrity of the user. For example, the risk of advertising based on location being perceived as SPAM is one issue mentioned. There is a fear that this could violate the reputation of newspapers as respective service providers, which would be damaging to the whole branch. To avoid integrity problems some newspapers have tried pull advertising via sms or digital coupons, i.e. the user has actively agreed to the advertising. However, few users choose to request for these types of advertisements. Rather than recognizing an individual's position, some of these respondents believe that localization can be used to bundle news services relevant to a geographical area, thereby not in conflict with personal integrity. This could be combined with a fixed set of services related to user's home area, always available wherever they are. Consider the following comment on positioning possibilities:

> "For mobile news there is a possibility of working with GPS. Depending on where you are the news content changes. If you are in New York for example you would get the New York news but also the biggest news from home."

Another aspect of localization that is regarded important is adaptation to the time of day at the location where the user is. Some services and information have different relevance during the day. Adapting services and advertising to time of day is referred to as day-parting and is an important part of the 24/7 publishing strategy for most of these newspapers.

Personalization

The majority of the respondents regard personalization as a very important dimension of the value proposition as the mobile phone is a personal device. To make the most of this value dimension it is not enough to know where the users

are and what type of phone they have, information about the individual in possession of the phone is also required about private recreational as well as work related preferences. There have been attempts to make users define their profiles and their device properties on web-sites to make possible to personalize services and advertising to their preferences. However, this has not been as successful as hoped for. People often think they will appreciate personalized services when asked, but when there is an effort required to build up the profile the user does not take the time. In addition, the format of how news is presented will change due to personalization. The selection of news has traditionally been based on the thought of what is interesting to everybody. In this discussion the individual's interest is central as illustrated by this quote:

> "If we can recognize the person who is reading we can get closer to people. News is getting more and more individual. For example, foreign news is loosing interest, more local is more interesting. ..We believe in getting closer not further, narrowcasting… The value of real or traditional news is diminishing. Alerting is therefore high on the agenda, far more personalized."

However, there are respondents that are skeptic to personalization. Especially when it comes to news there are limitations to how personal news services can be if you still want to enjoy the experience of news. Part of that experience is considered to be the talk about the news with others. There is also a tension between personalization and news publishing interests. Some of the respondents do not want the user to be able to choose *not* to read the head news or choose *not* to be exposed to advertising. There is a limit to how much personalized they will allow their content to be.

Socialization

As illustrated above, the relations to the audience are developing to be another in mobile media than in traditional media. The relational and social aspects are considered to be central. In tradition, newspaper organizations have built relationship on the trustworthiness and seriousness of the newspaper brand. The brand is not only regarded to be manifested in the newspapers name but also in the visual appearance, the journalistic competence, and in the tone of voice, and their dialogue with their audience. All of these newspaper organizations have a long tradition of publishing news and have over time built strong brands. All respondents agree that bringing the brand in the mobile services is crucial to be able to enforce the relationship with the audience. This aspect is considered to be an important value for users. As illustrated by this quote, this is a strategy for long term relationships with their audiences:

> "It is more important to build relations to your readers today. We are going from mass media to relation media…We must add stickiness to our brand, it is about not only bringing the news but also to help people with added services on very cheap basis. If you can stick those services to your brand, then you will be a friend, a family and friendship is worth a lot."

Another aspect of socialization is people's willingness to contribute with content. People have a desire to be seen and to share experiences, ideas, opinions etc., not only with people they know, that can be done by private communication such as phone calls, mail and sms, but also sharing with a wider community, more public such as moblogs. Therefore these respondents expect that mobile users are willing to contribute with user generated content. Some of these respondents see an opportunity in supporting this community building. However, there are also representatives of a more hesitant attitude to supporting community building, with regards to independent news reporting as shown by this statement:

> "I believe in communities and memberships business wise, but is that our role? The newspaper can not sell out its independency."

Summary

The representatives from the newspaper organizations recognize the dimensions of value proposition as described by Clarke (2001), but also another dimension, here named *socialization*. Figure 2 summarizes the value proposition dimensions used to study users response based on the outcome of the analysis of the interview material.

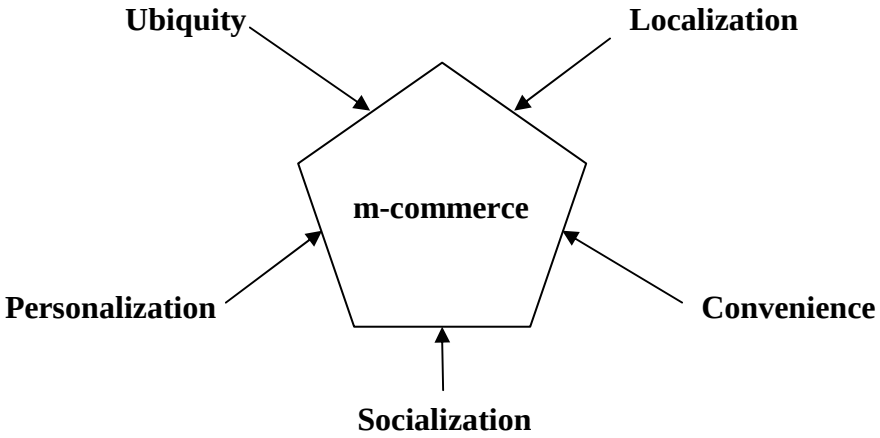

Figure 2. Value proposition of m-commerce according to Clarke (2001) p. 137, with the addition of socialization.

4.2 User perceptions of value proposition

Background

The dataset used in this analysis was based on the 1388 respondents that regularly use mobile services. In Table 3 on the next page, an overview of the demographics of the respondents is presented.

No of respondents		*All*		*Men*		*Women*	
Total		1388	(100%)	978	(70.5%)	410	(29.5%)
Age range		15-77		15-77		15-69	
Average age		36.1		36.4		34.7	
Std. dev.		12.65		13.12		11.38	
Type of	2G	786	(56.6%)	709	(72.5%)	77	(18.8%)
mobile phone	3G	514	(37.0%)	247	(25.2%)	267	(65.1%)
	Do not know	79	(5.7%)	18	(1.8%)	61	(14.9%)
	Missing	9	(0.7%)	4	(0.4%)	5	(1.2%)

Table 3. Background data of data sample

As shown in Table 3, men are overrepresented in the sample. It is interesting to notice that the average age among women is lower and that the penetration of 3G phones is as high as 65.1% among the women while 25.2% among the men. To give an idea of the services the respondents have experience from they were asked what types of services they use (see Table 4).

Service	*No*	*Percentage*
Downloaded ring tones	1430	39.4%
News services	1185	32.3%
Information services (phone numbers, maps etc.)	1120	30.9%
Bank services	688	19.0%
Time tables (busses, trains etc)	621	17.1%
Sports results	605	16.7%
Downloaded music	537	14.8%
Traffic information	512	14.1%
Downloaded music videos	231	6.4%
Ordering services (flowers, tickets etc)	178	4.9%
Payment of parking fee	174	4.8%

Table 4. Mobile services that the respondents use

As demonstrated in Table 4, downloading ring tones, news services, and information services are used by more than 30% of the respondents. To explore how the users respond to the value proposition they were asked to grade statements on a 7 grade Lickert scale (1 = disagree and 7 = agree). In Table 5 on the next page, the findings are summarized organized according to the five dimensions in Figure 2.

Ubiquity	*Mean*	*Std. dev*	*Localization*	*Mean*	*Std. dev.*	*Personalization*	*Mean*	*Std. dev.*
U1 Access everywhere	6.24	1.13	L1 Locally anchored	4.37	1.62	P1 Adapted to personal interests	5.34	1.56
U2 Access anytime	5.80	1.37	L2 Location adapted	4.14	1.77	P2 Share personal news experience	5.21	1.60
U3 Access on travel	4.89	1.87	L3 Position relevance	4.30	1.63	P3 Adapted to personal private needs	5.13	1.54
U4 Access to same services when and where ever needed	4.50	1.74	L4 Personal position adaptation	4.06	1.70	P4 Adapted to recreational interests	5.06	1.57
U5 Access outside home	3.52	2.15	L5 Adapted to time of day at the location	3.91	1.83	P5 Adapted to personal work related needs	4.56	2.05
Convenience	*Mean*	*Std. dev*	*Socialization*	*Mean*	*Std. dev.*	*Totals*	*Mean*	*Std. dev.*
C1 Provide clear overview	5.96	1.31	S1 Engage in dialogue with service provider	5.02	1.86	Personalization	5.02	1.21
C2 Make my everyday easier	5.17	1.56	S2 Share my opinions	4.62	1.87	Ubiquity	4.78	0.85
C3 Communi-cation utility	5.02	1.98	S3 Brand of service provider	4.53	1.76	Convenience	4.30	0.95
C4 Learning utility	4.57	1.95	S4 Relation to service provider	3.88	1.77	Localization	4.11	1.25
C5 Experience (e.g. surprising, exiting)	4.01	1.87	S5 Content from other users	3.34	1.75	Socialization	4.00	0.06
C6 Getting information first	3.73	2.07	S6 Contact with other users	3.18	1.76			
C7 Information utility	3.19	1.91	S7 Contribute with content	3.02	1.96			
C8 Enter-tainment needs	3.02	1.91	S8 Community feeling	2.68	1.60			

Table 5. Mean scores and standard deviations of items as perceived by users.

As can be seen in Table 5, many of the items score higher than the mid-point (=4). In summation, the personalization items score the highest, followed by ubiquity. Convenience, localization and socialization score around 4 or slightly above.

In order to examine if these five dimensions are valid according to user perceptions a principle component factor analysis was conducted. Initially all items were included. The items that scored lower than 0.3 or loaded on more than one component by 0.3 or higher were eliminated in an iterative process. The final principle components analysis (varimax rotation) suggests a four-factor solution based on 16 items. This four factor solution (see Table 6 on the next page) after five iterations accounted for 58% of the total variance. The sample met the

necessary thresholds for conducting a factor analysis (Hair et. al., 2005), KMO Measure of Sampling Adequacy = 0.86.

		Component			
		F1	*F2*	*F3*	*F4*
C7	News experience	0.804			
C6	Getting information first	0.780			
C8	Entertainment needs	0.760			
C5	Emotional experience	0.684			
S6	Contact with other users		0.818		
S9	Community feeling with other users		0.758		
S5	Content from other users		0.747		
S7	Contribute with content		0.580		
P4	Adapted to recreational interests			0.816	
P3	Adapted to personal private needs			0.775	
P1	Adapted to personal interests			0.768	
P2	Share news experience with others			0.363	
L3	Position relevance				0.801
L2	Location adapted				0.795
L5	Adapted to time of day…				0.655
L1	Locally anchored				0.457

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations.

Table 6. Factor solution of user's perceptions of value proposition.

As can be seen in Table 6, the four factors correspond to four of the dimensions in the model that was tested (see Figure 2); *convenience*, *socialization*, *personalization*, and *localization*. The dimension ubiquity did not come out as a distinct factor. None of the items related to the dimension ubiquity are included the solution. These items loaded high on all of the dimensions and were thereby eliminated.

From the localization dimension, the item of adoption to the personal position was excluded and for personalization the item of personalization to work related needs. The items C1 (provide clear overview) and C2 (make my everyday easier) loaded high on all factors indicating that these benefits are not related to one dimension. The socialization items regarding the relation to service provider loaded relatively low over all factors. The items related to socialization with other users are the ones included in the factor solution. The outcome of this analysis is summarized in Figure 3 on the next page.

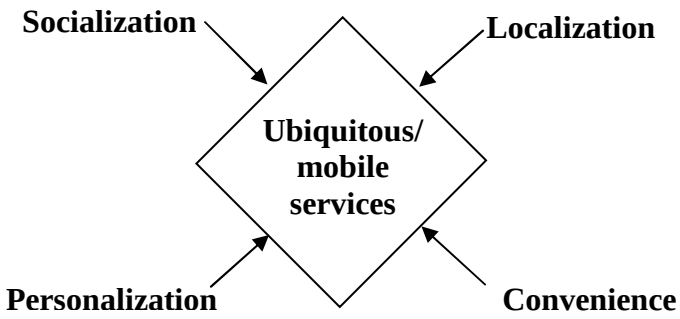

Figure 3. Dimensions of mobile service value according to user perceptions.

As can be seen in Figure 3, the outcome of this study is that ubiquity is a general aspect of mobile services and that socialization can be added as a dimension of m-service value.

5. Discussion

Mobile technology and mobile services is regarded as a new arena for profitable content offerings. To succeed with this agenda content providers need to understand how their intended value is perceived by users. This paper reports a multi method (Mingers, 2001) research study with the objective of exploring dimensions of value proposition in m-commerce. The dual approach included an interview study with staff from newspaper organizations followed by a broad survey among mobile service users in order to address both the supplier and the demand side. Value proposition is complex and difficult to communicate to the intended audience (Ostwalder & Pigneur, 2003) as there are many uncertainties of what users want (Tilson, et. al., 2004) and how they will react (Jessup & Robey, 2002). Adressing the challenge of unrevieling the uncertainties related to value proposition in m-commerce, this paper aims at contributing with an understanding from the supply side as well as the demand side (Keen & Mackintosh, 2001).

The results indicate that there are common views as well as differences between the intended value proposition and user perceptions. Drawing in the typology by Clarke (2001) this study shows that the dimensions localization and personalization are valid for the supplier as well as the demand side. Convenience was a valid dimension according to user perceptions, however the items related to “making every-day life easier” and “overview of offerings” were excluded. As these items loaded high on all dimensions and were perceived as important in regards of mean scores, it can be presumed that these items are important for all value dimensions. These benefits are, it would seem, related to the use situation as suggested by Mallat *et al.* (2006). The items of the dimension ubiquity scored high means but did not form a distinct factor. On the contrary, they loaded high on all factors. This indicates that ubiquity is not a dimension of value proposition but

rather a metaphor for what is the benefit of a mobile service as such. The items related to ubiquity are what define how a mobile service distinguishes from others and thereby enables the value dimensions localization, personalization, convenience and socialization.

The dimension socialization that was identified in the analysis of the interviews proved valid also for users. Interestingly, the items related service provider relations were excluded from the socialization dimension in the factor solution, even though they scores high means. This indicates that service provider relation is important independently of value dimension and thereby highlights a difference between the service provider intentions and the user's perceptions. The items included in the socialization dimension are all related to other users or communities of users, which has not been paid very much attention in previous research. This finding is in line with the discussion by Kakihara and Sørensen (2001) in that mobility also is related to the interaction people perform and not only to their physical movements. Further, this finding is also supported in that socially oriented services such as blogs, community journalism and content sharing are gaining more and more interest from users. Users seem to value having the possibility to access these services ubiquitously at their own convenience, i.e. independently of spatial, temporal and contextual mobility.

However, even though these values are recognized by users the fact remains that adoption is very slow. One may ask if practitioners and researches are too impatient and expect too much of users. Users seem to need time to change their habits as suggested by Jessup and Robey (2002), and the relative advantages of ubiquity need to be comprehended and experienced before the value propositions can be appreciated.

6. Conclusions

In this paper perceived value of mobile services has been explored from a service provider as well as a user perspective. Summing up, the findings show that: (1) there are similarities as well as differences in perceptions of value held by service providers and users of mobile services; (2) sociability is an extra category of the value proposition not identified by Clark; and (3) that ubiquity and service provider/user relationship are general service characteristics rather than distinct contributions to the value of a mobile service.

These findings suggest that the typology by Clarke (2001) can be reconsidered. Rather than regarding ubiquity to be a dimension of value, ubiquity can be considered as an enabler of value dimensions. In addition, the results suggest that socialization is a valid dimension of m-service value from the supplier as well as from the demand side.

Contributing to m-commerce research, this study highlights that there are common as well as differing views of value proposition between the supply side (service providers) and the demand side (users). As discussed in this paper, the understanding of value and benefits of mobile services is often related to aspects of mobility as such. These aspects are all important to mobile services. However,

in order to understand how service providers and users perceive mobile service value, sociability is a value that needs more attention. We also need to recognize what the general characteristics of mobile services are and what the values that can be prescribed to individual services are. This could have significant implications and drive further adoption of m-commerce. As this study reviles the current user perceptions of value it also contributes to practice in that it helps service providers to better understand the m-service market.

There are several limitations to this study. Firstly, the selected setting for the interview study is limited to news publishing organizations and therefore they might be oriented towards some issues not representative for other content providers. Secondly, this study has not explored if there are value dimensions not yet reviled from a user perspective. As new devices and new services are entering the mobile service market, new value perceptions not previously considered might emerge.

Still, there is more to learn about what makes mobile services successful. Future research in this area could possibly investigate the sociability dimension deeper, differences between early and late adapters and attempt to revile underlying driver factors, and barriers of adoption and diffusion of mobile services to increase understanding in this area.

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