

Classifying Mobile Services

Kristina Heinonen¹ and Minna Pura²

¹ PhD, Assistant Professor, Department of Marketing
Centre for Relationship Marketing and Service Management (CERS)
HANKEN, Swedish School of Economics and Business Administration,
P.O. Box 479, FI-00101 Helsinki, Finland, tel: 09- 4313 3427,
kristina.heinonen@hanken.fi

² Doctoral Candidate, Centre for Relationship Marketing and Service Management (CERS),
HANKEN, Hanken Swedish School of Economics and Business Administration,
P.O. Box 479, FI-00101 Helsinki, Finland, tel: 09- 4313 3559,
minna.pura@hanken.fi

Abstract

Mobile services differ from traditional services in their ability to provide service offerings regardless of temporal and spatial constraints. They are also different from traditional interpersonal services that are delivered face-to-face, or from other types of e-services, such as wireless online services, where the service delivery is linked to a specific fixed local area network or specific location. Although an increasing number of academic studies are starting to focus on mobile services from a service management perspective, rather than a technology perspective, formal classifications or categorizations of mobile services are still scarce. The aim of the paper is to develop a conceptual classification for mobile services that depicts the special nature of mobile services and gives indications how to categorize services from a customer centric perspective. The classification is based on the type of consumption, the context, the social setting, and the relationship and it represents aspects that influence the overall value of mobile services. These issues are described more in detail by breaking them down into classification grids that differentiate mobile services from one another by describing the aspects in a two-dimensional way. We provide examples of existing mobile services in each classification grid. The term mobile service denotes all services that can be used independently of temporal and spatial restraints, and that are accessed through a mobile handset (mobile phone, PDA, smart phone etc.). The proposed conceptual development is a contribution to service marketing research. The resulting classification gives implications for further empirical research in mobile area and helps managers and service developers to differentiate and group their mobile service offerings in a meaningful way that is especially useful for marketing purposes.

Keywords: mobile, wireless, service, classification, value, conceptual development

1. Introduction

Technology developments have created new types of services. Mobile services differ from traditional services in their ability to provide service offerings regardless of temporal and spatial constraints. The benefits of mobile services are often summarized in four factors: ubiquity,

convenience, localization and personalization that differentiate mobile services from online services (Clarke and Flaherty 2003). Mobile services are also different from traditional interpersonal services that are delivered face-to-face, or from other types of e-services, such as wireless online services, where the service delivery is linked to a specific fixed local area network or specific location. Mobile services can be accessed on the move, where and whenever the need arises. Although an increasing number of academic studies are starting to focus on mobile services from a service management perspective, rather than a technology perspective (e.g. Balasubramanian, Peterson, and Järvenpää 2002; Heinonen and Andersson 2003; Nysveen, Pedersen and Thorbjørnsen 2005a,b), formal classifications or categorizations of mobile services are still scarce. Previous studies clearly indicate that specific categorizations are needed and especially categories of mobile services have been called for (e.g. Rodgers and Sheldon 2002). In addition, so far theories used to analyze mobile business stem from information systems literature and often treat mobile services as a category as such compared to Internet and brick and mortar services. Aspects that would allow us to categorize different types of mobile services have remained largely unexplored, and future research has been encouraged in the field (Okazaki 2005).

Service classification schemes have been created in earlier literature with the attempts at offering managerial insights on how to organize and classify services in order to serve customers better (e.g. Lovelock 1983). However, previous service classification models incorporating several fields of industry are quite generic and more specific classifications are needed to depict the nature of the new electronic channels especially in order to identify the specific characteristics of mobile services. Many services classifications stem from traditional service environment that distinguished services from products. Lovelock's (1983) service classification of traditional interpersonal services is one of the notable ones. The goal was to move away from the industry-specific classifications by exploring managerially relevant service characteristics. However, although some of the classification schemes could be used as a model for categorizing mobile services, considering the technology developments there is a need to re-evaluate the traditional service categorizations and to identify the specific characteristics of mobile services.

Some attempts have already been made to develop service categorizations that depict the special nature of electronic services in general (e.g. Angehrn, 1997; Dabholkar 1996; Meuter et al 2000); however, they have not acknowledged the mobile nature of delivering services. For example, Meuter et al's. (2000) categorization of technology-based service encounters based on different technology interfaces that the customer uses to deliver the service and the purpose for using the service does not include services provided through a mobile interface. Hence, existing e-service categorizations do not identify the special nature of mobile services in comparison to other e-services.

Some categorizations of mobile services exist already. However, most mobile service categorizations tend to focus on the providers' perspective rather than the customer or user perspective on the service (e.g. Hyvönen and Repo 2005; Giaglis, Kourouthanassis and Tsamakos 2003; Sullivan Mort and Drennan 2005; Mitchell and Whitmore 2003). Looking more generally at research on mobile services, some previous research emphasize the customer perspective of mobile services as illustrated in Table 1. However, the focus of the studies has been on some specific aspect of mobile services, such as intentions (e.g. Nysveen et al 2005 a,b) or motivations (e.g. Pura & Brush 2005) to use, segments of users, value (Anckar & D'Incau 2002; Van der Hejden 2005) or user acceptance (Van der Hejden et al. 2005), sociability (Järvenpää and Lang 2005; Heinonen and Andersson 2003) and not on classifying mobile services. In addition, several of these publications are conference papers, and further conceptualizations are needed to advance

theory building in the mobile service field. To our knowledge, there are no studies that specifically attempt to provide solid ground for categorizing mobile services. Nysveen et al. (2005b) was one of the first to compare adoption of different types of mobile services, but their grounds for service categorization of services remain to be explored further. Thus, most current suggested categorizations are a by-product of other research agendas and further conceptualizations are needed in this area.

Moreover, as indicated in the table 1, there are four main aspects of mobile services that are acknowledged in previous research. However, no previous research has incorporated all the factors. These factors are the type of consumption, the context of use, the social setting, and the relationship between the customer and service provider. These factors are essential when attempting to categorize mobile services from a customer-centric perspective.

Table 1: Mobile Service Research

Authors	Focus	Type of Consumption	Context	Social setting	Relationship
Isoniemi & Wolf 2001	Segments of mobile service users			X	X
Anckar & D'Incau 2002	Value creation in mobile commerce	X	X		
Balasubramanian et al 2002	Mobile commerce		X		
Pura (2003a)	Value of and loyalty to mobile services		X	X	
Pura (2003b)	Nature of loyalty in mobile services		X		X
Heinonen & Andersson 2003	Use of mobile services			X	
Nysveen et al 2005 a,b	Intentions to use mobile services	X		X	
Pura & Brush 2005	Motivations for mobile service use	X	X		
Järvenpää & Lang 2005	Mobile technology			X	
Van der Heijden et al. 2005	User acceptance of mobile information services	X	X		

Following the importance of these four aspects for categorization are illustrated shortly.

1. *What is the type of consumption?*

It has been argued that people use services based on different consumption values (Sheth, Newman and Gross, 1991). Different types of motivations for consumption are often divided into hedonic and utilitarian value (Babin, Darden and Griffin 1994; Chaudhuri and Holbrook 2002). In mobile services, it has been suggested that hedonic and utilitarian value may refer to entertainment needs and efficiency needs (Anckar and D'Incau, 2002; Cotte, Tilottama, Ratneshwar and Ricci, 2006; Pura and Brush, 2005).

2. *What is the temporal and spatial context of service use?*

The temporal and spatial context of service use is another important factor that differentiates mobile services from other types of services (e.g. Anckar and D'Incau 2002; Balasubramanian et al. 2002; Mennecke and Strader 2003; Yoo and Lyytinen 2005). The temporal and spatial context

has been suggested to influence the value of mobile services (e.g. Van der Heijden 2005; Nysveen et al 2005; Pura and Brush 2005, Heinonen, 2006). As such, the criticality of time and space of service use is a factor mostly considered in previous literature (Mennecke and Strader, 2003), and is essential also when categorizing mobile services.

3. What is the social setting in service use situations?

It can be argued that a broader perspective on the use context can be taken that incorporates also other aspects than the time and space, namely the social setting where the service is used. Researchers have acknowledged sociability as a purpose for using mobile technology (Yoo and Lyytinen 2005) and social aspects have been suggested to influence the use of mobile service (e.g. Heinonen and Andersson 2003) or intentions to use (Nysveen et al 2005). The social setting can enhance or inhibit the use of mobile services in a certain situation.

4. What is the relationship between the customer and the service provider?

The type of relationship between the service provider and the customer is a fourth factor that can be used to describe the characteristics of mobile services. It has been argued that mobile services are considered more personal than any other remote service (Kleijnen et al. 2005) and that they can easily be personalized for specific customers (e.g. Watson et al). However, most services offered today are not personalized at all and the relationship with the provider is remote, based only on occasional transactions initiated by the customer and invoiced on the customers' monthly telephone bill. Subscription based services are also available and these entail opportunities for closer relationships with the provider.

The aim of the paper is to develop a conceptual classification for mobile services that depicts the special nature of mobile services and gives indications how to categorize services from a customer-centric perspective. The paper contributes to service marketing research with its classification of mobile services based on the type of consumption, the context of use, the social setting and the relationship with the provider. These concepts are described more in detail by breaking them down into classification grids that differentiate mobile services from one another by describing the aspects in a two-dimensional way. We provide examples of existing mobile services in each category of the classification grid.

The term mobile service is used to describe all services that can be used independently of temporal and spatial restraints, and that are accessed through a mobile handset (mobile phone, PDA, smartphone, GPS etc.). Examples of currently offered mobile services include logos, ring tones, games, address inquiry, account balance inquiry, paying for parking, vending machines, tram tickets, finding the nearest service location, maps, directions, etc.

The paper has the following structure. First, a classification of mobile services is proposed that describes four main aspects of mobile services. Then each aspect is discussed in more detail by providing examples of existing mobile services. Managerial challenges and questions related to each aspect are also discussed. The article is concluded with a discussion on practical and theoretical implications related to the proposed classification. The resulting typology gives implications for further empirical research in mobile area and helps managers and service developers to differentiate and group their mobile service offerings in a meaningful way that is especially useful for marketing purposes.

2. Literature Review

We use the previously discussed four aspects raised by earlier research when developing a classification of mobile services. They are aspects that influence the value of mobile services. It is proposed that core of the mobile service represents the type of consumption related to the specific mobile service. The next consideration is the context when and where services may be used, i.e. the temporal and spatial context of use, followed by the social setting in which they may be used, and finally, the relationship between the customer and the service provider. The framework for classifying mobile services is summarized in Figure 1.

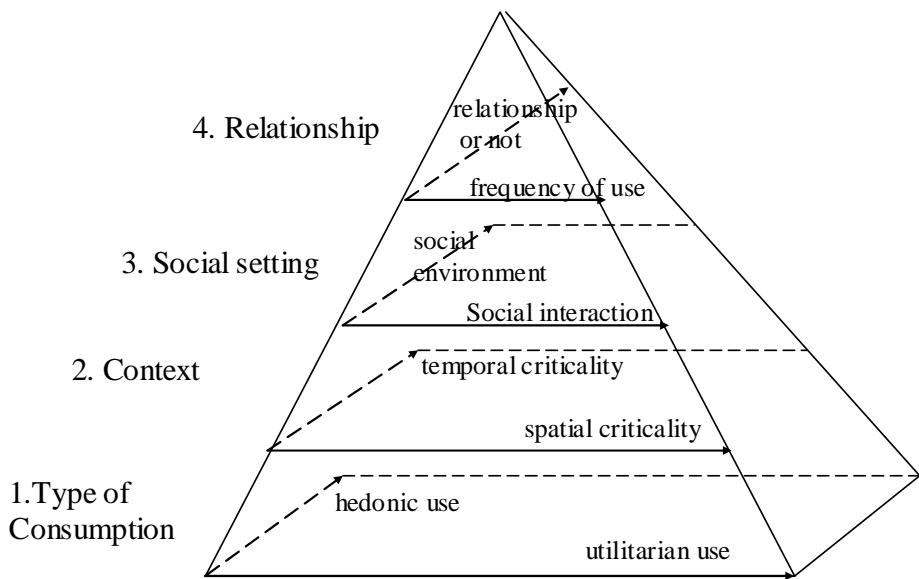


Figure 1: Classification of Mobile services

These aspects represent factors that distinguish mobile services from other types of electronic or interpersonal services. Thus, all four levels should be taken into account when designing mobile services, pricing services, and segmenting services into bundles that offer similar value propositions, which thereby can be marketed to the potential users with similar marketing communication. The four levels are related to each other and each level contributes to offering value-in-use to the customer.

2.1 Type of Consumption

Research has suggested that services can be classified based on the relative importance of the hedonic and utilitarian value they generate for customers (Babin, Darden and Griffin 1994; Chaudhuri and Holbrook 2002). Utilitarian value refers to extrinsic motivation that exists in goal directed service use (Babin, Darden and Griffin 1994). Hedonic value means intrinsic motivation that exists in experiential, fun and enjoyable service use as such (Novak, Hoffman, and Duhachek 2003). Similar categorization into goal directed and experiential services has been used also in mobile field (Nysveen, Pedersen, and Thorbjornsen 2005b; Okazaki 2005). Thus this categorization also reflects the division to efficiency needs and entertainment needs. The use of new technology to access the services can be seen as fun and exiting as such and thus services

create both utilitarian and hedonic value. However, we have attempted to give examples that can describe the hedonic vs. utilitarian nature of different mobile services.

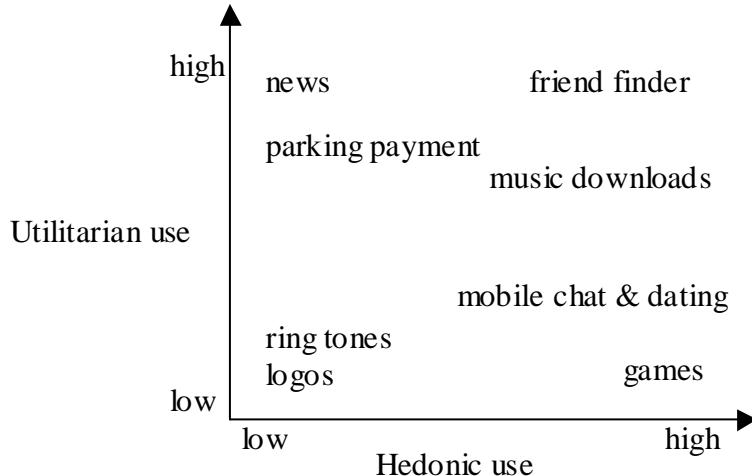


Figure 2: Consumption types

Information based services e.g. news, weather reports, timetables, traffic information, and search services (address and number inquiry, nearest service location, search for stolen vehicles, routes etc.) are examples of services that create high utilitarian value and help users to achieve a goal effectively and conveniently. Highly hedonic services that create fun experiences and are used for the sake of the experience are entertainment oriented services e.g. mobile chat, games and music downloads. Finding examples to the category that presents low value both on utilitarian and hedonic aspects is a not an easy task. But, may include many of the most popular services offered currently by the majority of mobile service providers: logos, ring tones, pictures that may be perceived “nice to have”, but something that you can also manage without.

To date, mobile services are quite often marketed as a bundle of services that people can use via their mobile services, sometimes even referred to as “the Internet in the pocket”. However, this type of homogenous communication undermines the real potential of using mobile services for different needs and preferences. Different types of services should be marketed based on their potential value to the customer. The hedonic vs. utilitarian categorization of the service types gives implications on how to communicate the value of some specific services or service types to the customers. The following questions should help marketers to understand hedonic and utilitarian services.

- Which consumption type; efficiency or entertainment/experience is relatively more important in the service offered? I.e. does the service help to save time and reach a goal effectively or is it mainly entertaining for its own sake?
- Can task oriented and experience oriented users be separated from each other?

Hedonic value is often gained from entertainment related services and thus can be communicated as fun and enjoyable service experience. Utilitarian services represent information based services like weather reports, time tables and search services that aim at achieving a task effectively, maybe saving time and finding information easily. Therefore the communication of the value of these services should also reflect the effectiveness, saving time and effort, good

value for money compared to alternatives and convenience of accessing the service regardless of temporal and spatial constraints. It has also been suggested that people tend to be willing to pay more for entertainment related content. But no agreement has been reached on which; the utilitarian or hedonic service offering would bring more revenues to the companies in the future.

2.2. Temporal and Spatial Context

Balasubramanian et al (2002) proposed a space-time matrix for tasks that could be done in the mobile environment. Other researchers have also used time and location to conceptualize products and services based on the relative immediacy of the task of the user and the relative location of the user when the service is used (e.g. Heinonen, 2004a,b; Mennecke and Strader, 2003; Pura, 2003b). We use a similar approach and introduce a classification scheme based on temporal and spatial criticality. In this scheme, temporal criticality depicts a time dimensions how urgently the customer needs the service. Spatial criticality indicates if the use situation is either location non-critical, i.e. if the service can be used anywhere, e.g. at work or at home where there are other alternatives to the mobile device such as fixed Internet connections. Alternatively, the use location can be critical, i.e. the customer is on the move using the service at the street or at other places where there are no other alternatives to the mobile service or location-based information is needed.

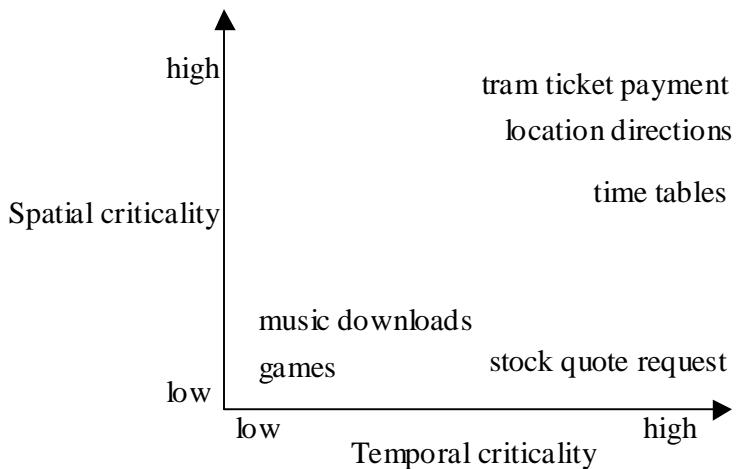


Figure 3: The temporal and spatial criticality of service

Examples of services used in situation that is critical both on time and location of the user are e.g. tram ticket purchase with mobile payment, because it must be paid at a specific time at a specific urgent situation on the move. Bus stop specific mobile timetables and route guidance is also considered highly time-critical. In contrast, low spatial-critical services are e.g. games and stock quote requests. In this category the need to get information is time-critical, but may be acquired e.g. at home or an office or any location.

The spatial and temporal criticality in which the customer is when using the service represents an important characterisation of mobile services. The time when and place where the customer uses the service is far more complicated and less obvious to predict compared with traditional interpersonal services or online services. This classification scheme helps managers understand the context of service use:

- In what type of situation is the service used? How critical is the time of delivery?

- Are there other alternative services that can be used? Is the customer moving or in one and the same place when using the service?
- What opportunities are there to influence the temporal and spatial context; when and where the service is used?
- Where the marketing communication should be placed if the services are mainly used in low vs. highly critical spatial situations?

The fact that there may be other alternative services that the customer can use influences pricing and service design. Mobile services that are offered as the only alternative can be priced higher than services that are competing with other service delivery alternatives. Correspondingly, when there are other service alternatives the mobile service must be priced competitively.

Moreover, this classification scheme has implications for service design. It is even more important that services aimed for urgent or highly critical spatial context are designed in a simple way so that the customer can use the service easily without extra effort or time needed. On the other hand, services aimed at less time and place critical contexts where the customer has more time to use the service can be designed with additional service elements to increase the value of the service. Furthermore, it is easier to reach customers in a state when they have time to read instructions and marketing communication. They may also have access to other channels, e.g. digital television, Internet, radio, magazines that can serve as cross-marketing channels. In contrast, services used in a urgent situation need to rely on logical user interfaces, and customers' recall of how to access the services. Point of sale advertising, mobile portals or relying on mobile word-of-mouth may prove to be more effective marketing means in that case. Moreover, marketers need to acknowledge that the customers' location may change even during a mobile service use session, network availability may pose some problems e.g. if sitting in a train. Ability to save information for later use or for continuing to use the service at a later stage may therefore be a useful feature.

2.3 Social Setting

Social setting is expected to have a greater influence on the usage of mobile services in the mobile environment than Internet, because mobile services are often used in a social environment that involves interpersonal influence (Sullivan Mort and Drennan 2005). The type of social setting in which mobile services are normally used is very important in defining what kind of interactivity or possibility of lack of interactivity is offered by specific mobile services (Okazaki 2005). There may be different needs or motivations to interact with other consumers. Many mobile services can be used irrespective of the social group present, such as mobile chatting or checking for weather reports.

The social environment, in which the user is when the need to use the service arises, is depicted by the continuum: alone vs. in group in the Figure below. The social environment in a group may motivate to socialize with people by playing multiplayer games, location-based games that involve social interaction. Alternatively, mobile services also create opportunities for socialization in situations when people are alone. In contrast, mobile services are also often used in group, because they can be used discretely without disturbing others, e.g. ordering tickets or paying for parking during a meeting at work.

The other axis in the figure depicts the aimed state of social interaction through the mobile service, named social interaction. For example, mobile banking can be used in either a group or

alone, but because of the private nature of the financial information, the consumer probably wants to create a more personal space to use the service and wishes to be left alone (low social interaction). Similarly, one reason for using mobile services in e.g. public transportation is the need to create a personal space for social interaction, communicating with friends discretely in mobile chat rooms without disturbing others or playing a game in order to kill time. In contrast, people who use mobile chat services or search the whereabouts of their friends or family members seek social interaction (high social interaction).

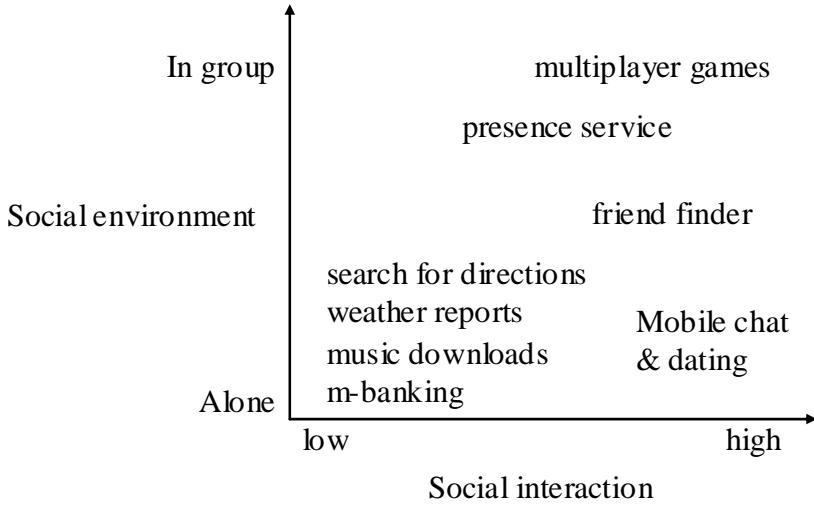


Figure 4: The social setting

Similar conceptualization has been previously mentioned by Nysveen et al. (2005b), who differentiate between machine-interactive and person-interactive services. In our opinion, machine-interactive services, i.e. interactivity between the medium and the user, are services that aim at low social interaction and thus people wanting to be alone. In contrast, person-interactive services that occur between people through a medium are in our model services that aim at using services in a highly social setting or that aims at interaction with other people either through the mobile media or in real environment, e.g. playing multiplayer mobile games in a group

The social setting is the core of the benefit offered by newly launched “presence” services that enable the person to specify criteria how he/she wished to be contacted at a specific time and social setting. For example, the user can tell others wishing to contact him/her that I am now at a meeting but can read text messages. Others can check who else is available for free time socializing or work related negotiating at that specific time or how some particular person is best reached in near future. This way they can acknowledge the other persons social setting and proceed in an appropriate manner. Managerially relevant questions with regard to the social and conditional setting are:

- Is the service used in order to be alone and create personal space or to socialize with other people?
- What opportunities are there to influence customer via the social interaction of other users?
- Under which social setting are services normally used?

Social setting of mobile service usage situations has implications on marketing strategies. Social pressure from friends and family may exist when using services especially in group use situations. Moreover, services used for socializing purposes have high interaction with participants and therefore marketing efforts should seize the opportunity of using these networks of customers interacting with each other. The interaction may even result in sharing downloaded digital content and received messages (Maier, 2005; Van Camp, 2005) Motivating current customers to spread positive word-of-mouth is often an essential part of service providers marketing strategy in mobile environment (Barnes, 2002).

2.4 Relationship between the customer and the service provider

The relationship between the customer and the service provider represents another distinct aspect of mobile services. Mobile services are especially effective in reaching individual customers. The customer relationship can be separated into discrete transactions or continuous relationships. Discrete transactions can be seen as episodes that represent a set of different interconnected actions and on the other extreme there is a continuous relationship based on a set of interconnected sequences (Holmlund 1997). Whereas episodes constitute a customer's discrete transactions, a continuous relationship often involves some kind of agreement between the customer and service provider. For mobile services this means that continuous relationships are mainly related to services that are based on a contract. For example, mobile check-in requires a membership in an airline loyalty program. Services like checking for account balances, getting an SMS from the library when books are due, or an SMS reminder the day before the dentist appointment, or ordering a security alert message to a mobile phone if someone happens to break in the summer cottage all involve a subscription with a specific company and represent therefore continuous relationships.

In contrast, many services are offered primarily to unidentified occasional users. For example customers without prior relationships with a specific company can use m-payment for vending machines and public transportation, order logos, logos or weather reports. These types of services represent discrete transactions. The discrete use of services is often a benefit sought compared to other service channels for people who wish not to reveal their identity or use services discretely without others noticing (e.g. adult entertainment, chat services, searching for others' taxed income information, car owner information based on the registration plate etc.) Avoiding personal contact has also been stated as a motive for using mobile services, which offers new perspectives on how to market these services. They may often be an alternative to other channels that require personal interaction. In the mobile context people can act anonymously and plan better what to say and how to respond to others comments than in personal interaction situations (Aminuzzaman 2005). Thus, a viable option of seeing services as connecting people is to market some mobile services as a planned choice of avoiding personal contact and offering a way to interact anonymously and discretely with the service provider.

This type of behavior is often also based on occasional use that is not supported by monthly subscription services. Furthermore, discrete services can be used without permission from the other part. In contrast, many subscription based services require registration or given consent to others (e.g. permission for friends or service provider to track the persons location, presence status, registration for using chat services or payment services). These types of services require more analytic consideration and cannot be used quite as spontaneously, at least for the first time.

Analytic service use could include e.g. ordering a magazine with a mobile phone, paying a bill, downloading music or using presence services.¹

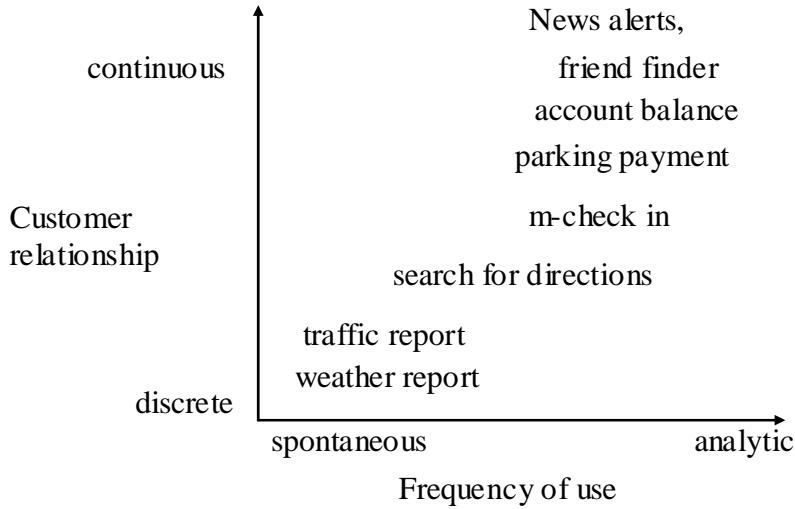


Figure 5: Relationship

The frequency of use can be linked to spontaneous and mobility needs (Anckar and D'Incau 2002) and need for planning and improvising (Järvenpää 2005). The frequency of use is another perspective on the service relationship. The spontaneous and analytic axis reflects the assumption that some mobile services are often used spontaneously, when the need arises in a specific situation, e.g. a real-time weather report may be found necessary while sailing and when the weather conditions are changing. These types of services may be accessed via other channels in normal situations, but when other channels are not available, mobile services are used. This means that some services are used infrequently and sporadically while other services are used regularly and may be based on more analytic consideration. An example of services that require more analytic consideration are subscription based services, e.g. news alerts that are invoiced on monthly bases or tracking services that require consent from the tracked person.

This classification scheme has several implications for managers. Customers who have an ongoing relationship with a specific service provider are more attractive to companies than customers that use services in an ad hoc manner. Obviously, it is less expensive to cross-sell to existing customers than to attract new customers. However, it is important to understand that there may also be customers that have an ongoing relationship who still use the service infrequently, while there are unidentified users who may use the service regularly.

The transaction vs. relationship nature of service use requires further analysis. Some research results in the loyalty of m-services indicate that customers who are restricted by a contract to stay with a service provider are more likely to switch service providers after the contract period is over, than those who do not have a contract (Libai and Nitzan 2005; Fullerton 2005). Thus, subscription based services may create a falsified feeling of loyal customers that are only committed to use the same service provider because of constraints that prohibit them to change providers. Fullerton (2005) even claims that customers' feelings of being stuck in the relationship tend to override the positive feelings of attachment to the provider.

¹ See for more information on presence applications e.g. <http://europe.nokia.com/nokia/0,,62553,00.html>

Moreover, the discrete transactions are very important as they also potentially represent a door opener to more frequent use of services, and can be used to increase the awareness of the service provider. Mobile services represent a new range of services for many customers, and by offering customers the possibility to try new mobile services and thus indicating the potential benefit of the mobile device is expected to be successful.

It is important to offer a range of different services that are easily at hand, but which not necessarily invade the user's privacy. The spontaneous nature of mobile service situations makes it hard to anticipate when and where mobile services are used and how they should be marketed so that people remember how to access the services when the need arises. Point-of-sale advertising e.g. at tram stops informing how to pay the tram ticket with the mobile phone are good examples how the use of mobile services can be promoted on the spot. But most importantly, marketers need to explore new options for service use, and especially strive to create a continuous need for many types of services. To determine the best strategy, marketers need to consider the following issues:

- How does the service support the different phases of customer relationship e.g. new customers vs. current customers?
- How can companies reach unidentified customers that engage in discrete transactions?
- How do customers prefer to pay for the services?
- Is the usage situation regularly occurring or does the need occur mostly spontaneously when the situational context changes on the move?
- Privacy issues; does the service use require permission from others?

In addition, a much debated issue in the literature is how to invoice services so that customers feel they gain value for the money. Many companies have ended up in offering alternatives to access the services either with transaction-based invoicing on the phone bill, a short trial subscription for free or for a small amount of money or a monthly subscription. The choice depends on the nature of the service and no definite recommendation can be made. (Munnukka, 2005) However, service providers should also acknowledge that the best payment way for the service provider that creates steady and secure cash flows (subscription based or payment from a service account) may not always be the preferred way from the customer's point of view. Invoicing per usage on monthly phone bill is regarded convenient and may even motivate people to use mobile services (Pura, Viitanen and Liljander, 2003).

3. Discussion and Contribution

This paper extends past classification schemes of traditional interpersonal services and e-services by examining the characteristics of mobile services from a customer perspective. The proposed four-level framework for classification of mobile services is also developed with a managerial relevance. The classification represents aspects that influence the value of mobile services. A typology of mobile services was proposed on the basis of four research questions that are considered essential in differentiating and grouping mobile service offerings in a meaningful way that is especially useful distinguishing managerial implications for marketing purposes. We introduced four different classification schemes that can be used to understand the consumption type, use context, social setting, and customer relationship. These classification schemes illustrate the distinct characteristics of mobile services that should be considered in the planning and evaluation as well as marketing mobile services. The focus was on what can be offered and how

customers perceive the value of these offerings. This service and customer oriented perspective on mobile services was hence achieved through classifying the value creation opportunities through the mobile situations and motivations of the current and potential service users.

This article was conceptual and aimed at theory generation through literature review and examples of existing mobile services. The contribution involves the resulting theoretical conceptualisation of mobile services. We have not focused on specific service industries, and the given example services are from a range of different industries. The resulting classification schemes attempt to give a holistic view of mobile services from a value-in-use perspective. The classification scheme differs from existing research on mobile services in the respect that emphasis is moved away from the prevailing focus on what mobile applications and networks are technologically possible to develop. The proposed categorisation schemes combine the managerial focus on what can be offered with how customers perceive the use of mobile services. In fact, one of the main academic contributions is the emphasis on the customer perceptions on the value-in-use of mobile services. Also, rather than only taking into account the temporal and spatial context that has been included in many studies on mobile services, this paper considers an extended context focused on the social setting in which the service is used as well as the type of relationship with the service provider.

4. Managerial Implications

The proposed classification schemes of mobile services contribute to marketing practice in several ways. The proposed categorisations have implications for communication, design, and pricing of mobile services, and for segmenting customer using the services. They provide insights for marketers how to differentiate mobile services based on criteria that are relevant from a customers' point of view.

It should be noted that the mobile service examples mentioned in the classification grids may be placed in several places depending on the use situation and the individual customer's preferences. Therefore, specific categorizations of unique mobile services are not as relevant as categorizing the opportunities for value creation from a customers' point of view according to the four suggested classification grids. Thus, in the end, the customers will evaluate the overall value of the services based on the type of consumption, the context of use, the social setting and the relationship with the provider. The classification framework helps service providers to assess the critical success factors of mobile services compared to other electronic channels from a customer-centric viewpoint and as such, the classification schemes can be used to develop strategies to create value in the mobile channel.

Specifically, the managerial questions related to each classification scheme can be used to evaluate potential customer reactions to specific mobile services and to understand the types of mobile service that customers are likely to try and use. Moreover, focus was on specific characteristics of mobile services that differentiate them from other electronic services. Existing services were given as examples for each classification scheme. However, because the focus is on different characteristics that describe mobile services, the classification schemes can be used to explore new avenues for mobile services and create new types of services.

5. Limitations and Future Research

Future research needs to empirically explore the proposed conceptualization in order to validate the proposed classification schemes. Although future research may need to structure the

classification schemes according to industries, we feel that it is important to move beyond the traditional industry specific classification towards a more generalisable and ultimately more descriptive categorization of mobile services.

Acknowledgements

The authors would like to thank the Foundation for Economic Education for the financial support, and the reviewers who have commented on the previous versions of this paper.

REFERENCES

- Aminuzzaman, S. (2005), "Is Mobile Phone a Socio-Cultural Change Agent? A study of the Pattern of Usage of Mobile Phones Among University Students in Bangladesh", Conference Proceedings of the International Conference on Mobile Communication and Asian Modernities II, Information, Communications Tools & Social Changes in Asia, in Beijing October 20-21, pp. 72-82.
- Ankar, B. and D'Incau, D. (2002), "Value creation in mobile commerce: Findings from a consumer survey", *Journal of Information Technology Theory & Application*, Vol. 4 No.1, pp. 43-64.
- Angehrn, A. (1997), "Designing Mature Internet Business Strategies: The ICDT Model", *European Management Journal*, Vol. 15 No.4, pp.361-369.
- Babin, B. J., Darden, W. R. and Griffin, M. (1994), "Work and/or fun: Measuring hedonic and utilitarian shopping value" *Journal of Consumer Research*, Vol. 20 No.4, pp. 644-656.
- Balasubramanian, S., Peterson, R. A., & Järvenpää, S. L. (2002), "Exploring the Implications of M-Commerce for Markets and Marketing", *Journal of the Academy of Marketing Science*, Vol. 30 No. 4, pp. 348-361.
- Barnes, S. (2002) "Wireless digital advertising: nature and implications", *International Journal of Advertising*, Vol. 21 No. 3, pp. 399 -421.
- Chaudhuri, A. and Holbrook, M. B. (2002), "Product-class effects on brand commitment and brand outcomes: The role of brand trust and brand affect", *Brand Management*, Vol. 10 No.1, pp. 33-58.
- Clarke, I. and Flaherty, T. (2003), "Mobile Portals: The Development of M-Commerce Gateways" In Book Mobile Commerce: Technology, Theory, and Applications, (Eds, Mennecke, B. E. and Strader, T. J.) Idea Group Publishing, Hershey, pp. 185-201.
- Cotte, J., Tilottama, G. C., Ratneshwar, S. and Ricci, L. (2006), "Pleasure or utility? Time planning style and web usage behaviors", *Journal of Interactive Marketing*, Vol. 20 No.1, pp. 45-57.
- 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.
- 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.
- Fullerton, G. (2005), "How commitment both enables and undermines marketing relationships", *European Journal of Marketing*, Vol. 39, No.11/12, pp.1372-1388.

- Giaglis, G. M., Kourouthanassis, P. and Tsamakos, A. (2003), "Towards a Classification Framework for Mobile Location Services" In Book Mobile Commerce: Technology, Theory, and Applications, (Eds, Mennecke, B. E. and Strader, T. J.), pp. 67-85.
- Heinonen, K. (2004a), "Time and Location as Customer Perceived Value Drivers", Marketing Department, Doctoral Thesis. Swedish School of Economics and Business Administration, Helsinki.
- Heinonen, K. (2004b). "Reconceptualizing customer perceived value - the value of time and place." *Managing Service Quality*, Vol. 14 No. 2/3, pp. 205-215.
- Heinonen, K. (2006), "Temporal and spatial e-service value", *International Journal of Service Industry Management*, Vol. 17 No.4, forthcoming.
- Heinonen, K. & Andersson, P. (2003) "Swedish mobile market: Consumer perceptions of mobile services", *Communications & Strategies*, Vol. 49 (1st quarter), pp.151-171.
- Holmlund, M. (1997). Perceived quality in business relationships. Doctoral dissertation No. 66, Swedish School of Economics and Business Administration, Helsinki.
- Hyvönen, K., Repo, P. (2005), Mobile services in the quotidienne of Finns (Mobiilipalvelut suomalaisen arjessa), Vox consumptoris – Kuluttajan ääni, Kuluttajatutkimuskeskuksen vuosikirja 2005, Savion Kirjapaino Oy, Kerava.
- Isoniemi, K. & Wolf, G. (2001): Three segments of mobile users, Proceedings of the Seamless Mobility Workshop, September 15-16 in Stockholm, Sweden.
- Järvenpää, S., Lang, K., Takeda, Y., Tuunainen V. (2003), "Mobile Commerce at Crossroads" *Communications of the ACM*, Vol. 46 No.12, pp. 41-44.
- Järvenpää, S., Lang, K. (2005) "Managing The Paradoxes of Mobile Technology", *Information Systems Management*, Fall, pp. 7-23.
- Kleijnen, M., de Ruyter K., Andreassen T. (2005), "Image Congruence and the Adoption of Service Innovations", *Journal of Service Research*, Vol.7, No.4, pp.343-359.
- Libai, B. and Nitzan, I. (2005), "Customer Profitability over Time in the Presence of Switching Costs", Paper presented at 14th Annual Frontiers in Services Conference, in Arizona, October 6. – 9.
- Lovelock, C. H. (1983). "Classifying services to gain strategic marketing insights", *Journal of Marketing*, 49 (Summer), 9-20.
- Maier, M. (2005), "Song Sharing for Your Cell Phone" *Business 2.0*, Vol. 6 No.2.
- Mennecke, B. E. and Strader, T. J. (2003), *Mobile Commerce, Technology, Theory and Applications*, Idea Group Publishing, Hershey.
- Meuter, M. L., A. L. Ostrom, R. I. Roundtree & M. J. Bitner (2000), "Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters". *Journal of Marketing*, Vol. 64, No. 3, pp. 50-64.
- Mitchell, K. and Whitmore, M. (2003), In Book "*Location Based Services: Locating the Money*"(Eds, Mennecke, B. E. and Strader, T. J.) Idea Group Publishing, Hershey, pp. 51-66.
- Munnukka, J. (2005), "Dynamics of price sensitivity among mobile service customers", *Journal of Product & Brand Management*, Vol. 14 No.1, pp. 65-73.
- Novak, T. P., Hoffman, D. L. and Duhachek, A. (2003), "The Influence of Goal-Directed and Experiential Activities on Online Flow Experiences", *Journal of Consumer Psychology*, Vol. 13 No.1 & 2, pp. 3-16.
- Nysveen, H., Pedersen, P. E. and Thorbjørnsen, H. (2005a), "Explaining intention to use mobile chat services: moderating effects of gender", *Journal of Consumer Marketing*, Vol. 22 No.5, pp. 247-256.

- Nysveen, H., Pedersen, P. E. and Thorbjørnson, H. (2005b), "Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons", *Journal of the Academy of Marketing Science*, Vol. 33 No.3, pp. 330-346.
- Okazaki (2005), "New Perspectives on M-Commerce Research", *Journal of Electronic Commerce Research*, Vol. 6 No. 3, pp. 160-164.
- Pura, M. (2003a), "Linking Perceived Value and Loyalty to Mobile Services", Paper presented at ANZMAC 2003, in Adelaide.
- Pura, M. (2003b), "Measuring Loyalty to Mobile Services", Paper presented at The Third International Conference on Electronic Business (ICEB), in Singapore.
- Pura, M. and Brush, G. (2005), "Hedonic and Utilitarian Motivations for Mobile Service Use", Paper presented at SERV SIG Research Conference, in Singapore 2.-4. June.
- Pura, M., Viitanen, J. and Liljander, V. (2003), "Customer Perceived Value of Mobile Services", Paper presented at 32th EMAC Conference, in Glasgow.
- Rodgers, S. and Sheldon, K. (2002), "An improved way to characterize internet users", *Journal of Advertising Reserach*, Vol. 42 No.5, pp. 82-94.
- Sheth, J., Newman, B. and Gross, B. (1991), *Consumption Values and Market Choices, Theory and Applications*, South-Western Publishing Co.
- Sullivan Mort, G. and Drennan, J. (2005), "Marketing m-services: Establishing a usage benefit typology related to mobile user characteristics", *Database Marketing & Customer Strategy Management*, Vol. 12 No.4, pp. 327-341.
- Van Camp, S. (2005) "15 Minutes With" *Adweek Magazines' Technology Marketing*, May, Vol.1.
- Van der Heijden, H., Ogertschnig M., van der Gaast L. (2005), Effects of Context Relevance and Perceived Risk on User Acceptance of Mobile Information Services, In Proceedings of the Thirteenth European Conference on Information Systems (ECIS), Regensburg, Germany.
- Watson, R.T., Pitt, L.F., Berthon, P, and Zinkhan, G.M. (2002), U-commerce: Expanding the universe of marketing, *Journal of the Academy of Marketing Science*, Vol.30 , No.4, pp. 333-347.
- Yoo, Y., Lyytinen K. (2005), "Social aims of ubiquitous computing: Exploring critical interactions between mobility, context and technology; Editorial", *Information and Organization*, Vol.15, pp. 91-94.