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Mobile Services for the Hospitality Industry

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Abstract

Mobile services appear to be an obvious choice for travel and tourism as the travellers are on the move, which is the first criterion for mobile services to be relevant. The travel and tourism industry, which is one of the largest and most rapidly expanding industries in the world and one of the significant users of ICT in its operations, will no doubt be an important market place for mobile services. Nevertheless, according to a study we conducted in 2003, only a few of the respondents were using mobile services to support their travel but many expressed their intention to use these services when they become viable for them. The travel and tourism industry has seen many dramatic changes within the last decade because of the possibilities offered through the wired internet. When mobile services start to offer an effective alternative to presently used routines and services it is expected that they will have a profound impact on the business models of the travel and tourism industry. The available mobile services in the hospitality industry are not as many and as value-adding as expected and we contrast them with the travellers' attitudes and expectations in an empirical study. The results and insights collected while studying travellers were later used to build a mobile booking system prototype for a major hospitality chain in Finland.

Keywords: hospitality, mobile services.

1   INTRODUCTION

Mobile services are part of the introduction of new technology possibilities in business and in various industries. The early introduction of mobile commerce (or m-commerce) in the late 1990s created a momentary hype, which turned out to be counter-productive for a serious industrial adoption of the possibilities offered by mobile technology. Scholars and industry representatives turned their attention towards the promise of electronic wireless media, envisaging that the next, or the real, phase of e-commerce growth will be in the area of mobile commerce. Keen and Mackintosh (2001) stress that mobile commerce (m-commerce) is marking the start of another era of innovation in business and that m-commerce will continue to extend the way organizations conduct business, changing the relationships between companies, customers, suppliers and partners. According to Keen and Mackintosh, mobility means freedom, and freedom creates choice and value, something much more than convenience as it may revolutionize the way companies work, buy, sell and collaborate. Keen and Mackintosh go to the core of the possibilities offered by the mobile technology but the next steps to be taken to make use of the possibilities are not well understood as it appears that we need to know much more about the actual value-adding mechanisms of the users of mobile technology.

Although the mobile Internet appears to have much to offer as an instrument of commerce, not much is known about the consumers' willingness to adopt wireless electronic media (for some partial answers cf. Carlsson et al 2002, 2004 and 2005) and about the factors that influence their adoption decisions and value perceptions of mobile services. With a bit of hindsight it appears that the wireless Internet raises many of the same questions as the introduction of the fixed internet. Building successful strategies for the mobile marketplace begins, no doubt, by recognizing the distinctive forces driving the emergence of mobile services. On the Internet, firms can create value for customers in a manner which is different from conventional business. Correspondingly, mobile services possess unique characteristics – Keen and Mackintosh (2001) call them "the mobilisation of knowledge" – when compared to e-commerce, and many statements on an impending m-revolution have, in fact, been triggered by the assumption that mobile services will involve (i) lower barriers and (ii) greater benefits in comparison to both e-commerce and traditional commerce. In view of that, the key question is to find some way to assess the value of mobile applications to prospective users, and to gain an understanding of the factors that may delay the penetration of the mobile Internet on a larger scale.

In diffusion theory (Rogers 1995), adopters are categorized into five groups on the basis of innovativeness: innovators, early adopters, early majority, late majority and laggards. Socioeconomic characteristics such as age, education and social status influence adoption. Those adopting mobile services now are innovators, early adopters and probably also early majority users according to the categorization. Adoption is furthermore affected by technological features such as relative advantage, compatibility, complexity as well as possibilities to try and observe the features. Of these, relative advantage is of greatest importance (Rogers 1995).

Diffusion theory has reached a recognized position in innovation research (e.g. Norman 1998). Experts and academics generally regard it as a useful way to study how innovations transform into consumer use. Nevertheless, as Rogers (1995) points out, diffusion research traditionally has a pro-innovation bias. We know less about ignorance and rejection to adopt innovations than about successful examples of adoption and diffusion. Mobile services are an ideal candidate for rejection. They have not yet accomplished the greatly expected commercial breakthrough with the remarkable exceptions of SMS, ring tones and logos. The (un)acceptance of innovations is a matter of interest in a number of competing theoretical approaches such as the Technology Acceptance Model (Davis et al 1998) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al 2003), but then acceptance is per se seen as a desirable result. The theory of the social shaping of technology (Bijker et al 1994, Williams et al 1996) also challenges diffusion theory. It holds that technology is shaped in a social context. Some technologies survive the shaping better than others and become more widespread.

Diffusion theory offers some insights on how and why mobile services are accepted and adopted; the technology and the features of the mobile phones are clearly enablers for the services but it also appears that the technology is not a sufficient driver for the services. A missing element appears to be the fact that the mobile services should be value-adding to the extent that they will change the structure of everyday routines (Keen et al 2001, the Braudel Rule), that is, change the way in which we live our daily lives.

This is then the theoretical basis for our study: if we can find typical value-adding services for business travellers and offer them on a mobile device we may well have the means to improve the productivity of some key routines in the hospitality industry.

Mobile services seem to be an apparent choice for travel and tourism as the travellers are on the move, which is the first criterion for mobile services to be relevant. The travel and tourism industry, which is one of the largest and most rapidly expanding industries in the world and one of the significant users of ICT in its operations, will undoubtedly be a significant market place for mobile services. It can be assumed that travellers' and tourists' lives will be enhanced by smart services accessible via mobile devices anywhere and anytime (e.g. Ghandour et al 2003). Intelligent software technologies will allow mobile services to be personalized and context-aware to improve travellers' and tourists' experiences. Context-aware mobile services will make a difference as the services and contents adapt to both the environment and to personal interests. Thus it is not too unrealistic to believe that a future competitive edge in the travel and tourism industry may be built around innovative uses of new mobile technology and services.

Even if all the previously stated reasons may be both plausible and valid, the acceptance of mobile services may still not happen. The explanations are well known and they are spelled out in the diffusion theory and in innovation research.

The paper is organized as follows: in section two we will work through a short state-of-the-art summary of mobile reservation services in the hospitality industry as a way to find out the status of one of the more obvious mobile services; in section three we will analyze the results of a survey we did with business travellers in order to identify what would be typical value-adding mobile services for them when staying at a hotel; in section four we summarize the study and offer some conclusions on the design of mobile support solutions for business travellers that were used for designing and building a prototype, which will be presented in a forthcoming paper as the hotel chain wants to have a first-mover advantage.

2   MOBILE RESERVATION SERVICES IN THE HOSPITALITY INDUSTRY

In a whitepaper entitled Experience Rules (IBM Business Consulting Services 2003) IBM envisions the move from traditional hospitality and leisure offerings to more personalized, unique travel experiences. According to IBM, the accommodation service providers will be expected to personalise their services with constant precision to each individual customer during the next decade. Today there are very few personally tailored hospitality services that would be attainable in each market segment. But, when certain hospitality services are made available via mobile devices, we will be a step closer to personalization, and, furthermore, travellers will be offered new freedoms.

Freedom is about choice and value for customers and consumers, but the choice has to translate to values that customers are willing to pay for and that companies can afford to provide. Unfortunately, not many accommodation service providers have currently understood that the mobile hospitality services they offer should be value-adding for the customer. For instance, cramming a hotel website into a WAP (Wireless Application Protocol) format is to misinterpret the possibilities the mobile device is offering and offers no reasonable value to the customer.

Switzerland based Hotelguide.com, on the other hand, offers a positive example on how to create a fully functioning as well as mobile room reservation service. The company offers a directory of over 100,000 hotels around the world and the mobile Internet service is accessible through a WAP-enabled phone, PDA and i-Mode. No registration is required prior to browsing available hotel rooms and the service is offered in seven languages. Registered users may easily cancel their reservations anytime, anywhere. The hotel prices are guaranteed to be low rate.

Sino.net is offering a mobile service that helps the user to find hotels in Asia and Australia while on the move. The service is accessible via a WAP-enabled phone, i-Mode, CDMA and wireless PDA. Corporate clients have a possibility to register and thus benefit from special discount rates on selected properties. The hotel directory presents more than 2900 hotels and, according to Sino.net, the user is able to: (i) search hotels by name, city and location; (ii) check hotel prices online; (iii) review descriptions of the rooms, the location of the property and historical information; (iv) call hotels directly to make a booking or to send a reservation request. It is surprising that Sino.net does not provide the possibility to make an online reservation while on the move. The idea of making a phone call or sending an e-mail in order to secure a room for a night or two does not translate to a mobile service, even though those actions were carried out via a mobile device.

The value-adding elements in hotel reservation services may also be formed by combining existing independent services as was demonstrated by Tiscover; the company acquired a significant share of the online reservation platform, NetHotels.com in 2004. Tiscover, a market leader in destination management systems plans to offer synergistic solutions for tourism organisations by giving them access to 35000 hotels online served by NetHotels.com.

2.1 Mobile reservation services by hotel chains

Back in 2001, OpenGrid expanded its FastBook™ solution to enable Hilton customers to wirelessly (i) find a U.S Hilton®, Conrad™ or Hilton Garden Inn® hotels; (ii) review property description; (iii) display availability and rates; (iv) reserve a room; (v) retrieve/cancel a reservation and (vi) access their Hilton HHonors® loyalty program profile (members only). A year earlier Swissôtel Hotels & Resorts had introduced their world-wide WAP service that allowed users to access hotel-specific information, locate the nearest hotel, receive directions to the facility as well as review weather reports. Another hotel chain that launched a WAP solution in the year 2000 was Thistle Hotels. Thus it could be assumed that mobile services should be quite visible by 2005.

In order to find out the current status of mobile reservation services offered by accommodation providers we made a limited ad hoc query by browsing the websites of major international and national hotel chains after which we contacted the hotels' customer service via email. In the first place we contacted those hotels who on their web site said that they have or have had a mobile reservation system in place.

The findings were quite surprising, as today there are only two major hotel chains that offer a (limited) mobile reservation service: InterContinental Hotels Group and Accor Hotels (table 1). IC Hotels Group offers a wireless reservation system for its Priority Club® members residing in US or Canada (fig. 1). Once the members have created their profiles online, they can check room availability, make reservations, extend stays or change their room preferences via WAP-enabled phones or PDAs. The wireless solution offered by Accor Hotels presents users with a possibility to browse the worldwide directory of Accor Hotels, to obtain hotel-specific information, to check availability and to make a reservation by placing a phone call.

HOTEL GROUP	Offering currently a mobile reservation service	Service functional in Scandinavia	Planning to offer in future
Accor Hotels	yes/no	yes	
Best Western International	no reply	no reply	no reply
The Hilton Family/Hilton Worldwide	no	no	yes
InterContinental Hotels Group	yes	no	
Marriott International	no	no	no information
Radisson Hotels & Resorts Worldwide	no	no	no information
Radisson SAS Hotels & Resorts	no	no	no information
Raffles International Hotels and Resorts	no	no	no information
Sokos Hotels	no	no	no information
Thistle Hotels	no	no	no information

Table 1.   Hotel chains offering a mobile reservation service usable through a WAP-enabled mobile phone

Figure 1.   WAP screen shots of wireless reservation service by InterContinental Hotels Group

2.2   Mobile check-in services by hotel chains

In 2001, a mobile guest check-in system called "StarWalker" was pioneered at the Sheraton Hotel in Parsippany, NJ (Starwood Hotels & Resorts Worldwide Inc.). The mobile system enabled the hotel clerks to check-in customers and produce room keys wirelessly at any location of the hotel thus improving the customer service by reducing waiting time. The "StarWalker" solution was created by Symbol Technologies Inc., Galaxy Hotel Systems by Starwood Hotels & Resorts Worldwide Inc., IBM and Computerized Security Systems (CSS)-Saflok® and it armed the hotel clerks with a Symbol SPT 1970 pocket-sized pen computer integrated with Spetrum24® WLAN and a mini Symbol PEP (Portable Encoding Printer).

3   DOMESTIC BUSINESS TRAVELLERS AND HOTEL SERVICES

The commercialisation of mobile services is approaching a critical stage in Europe. The development of mobile services – or mobile commerce or mobile Internet – has been intense for years but adoption has not progressed as expected (cf. Carlsson et al 2004 and 2005). In 2002, there were over nine million domestic travellers in Finland and in 2004 the trend continued; during January–August nearly 7 million travellers had already stayed over-night in an accommodation facility. Close to 40% of the conducted internal travelling in 2002 was for business purposes and similar results are predicted to occur in 2004 as well. Though corporate customers are not representing the majority of the domestic travelling, they nevertheless form an important market segment that thrives on efficiency and time-management. In order to serve better and thus to enhance accommodation (brand) loyalty among business travellers, their expectations of effortless and customised service need to be fulfilled. Since mobile phones have become an everyday commodity in Finland and the Finnish mobile phone market has become a so-called replacement market in which GPRS-supported services are replacing GSM-based, consumers and especially business users are gradually learning to make use of 3 G+ services.

3.1   Empirical study

In August-September 2003, we conducted an explorative empirical study with the aim to find out the habitual patterns of business travellers during a guest cycle (pre-arrival – arrival – occupancy – departure) as well as to gather their opinions about possible mobile hospitality services. Furthermore, the aim was to determine whether introducing mobile hospitality services would create added value for the business travellers.

The study was carried out with a web-based questionnaire. We used a convenience sample of business travellers by choosing companies, which represent industry in the ICT as well as companies from related industries. The aim was to get responses from frequent travellers who are expected to be advanced users of mobile technology. In this way we expected to get some ideas of what would be value-adding mobile services for them; the size of the sample was 71.

The domestic business travellers were defined by the number of domestic travel days and hotel stays per year. In general the respondents reflected a somewhat traditional picture of a business traveller:
- the room reservations and alterations are mainly taken care of by the company secretaries or travel managers,
- checking-in to the hotel is largely carried out in the reception area with the necessity of filling in the travel card, and
- checking-out is mostly done when actually leaving the hotel with a request to have the accrued charges separated into two different invoices.

The gender distribution of the respondents was 73.2% males and 26.8% females. Half of the business travellers (BTs) participating in the survey (50.7%) were between the ages of 36 and 50. The most common occupation among BTs was senior manager (31.0%) followed by manager (26.8%). 18.3% of the respondents informed us that they have 31-50 domestic travel days per year (fig. 2). Consequently, we may say that every sixth respondent was an active business traveller. All the survey participants had a mobile phone and nearly all the devices in use (97.1%) were provided by the employer. As the respondents marked down the model of their mobile device, we were able to determine its range of functionality, i.e. whether the device was a simple one enabling only text messages (SMS) and phone calls or whether the device supported advanced features like video conferencing and mobile Internet. Out of 60 respondents 42 had a more advanced mobile device, i.e. at a minimum they were able to access WAP via GPRS. In other words, 70% of the BTs had a device at hand that would have enabled the use of mobile hospitality services, provided that the services had been available. Therefore, not having the "right" mobile device could not be seen as a barrier hindering the possible future use of mobile hospitality services. Another question is whether the respondents had been employing their devices to their full potential and were at ease with using mobile services. But, we will return to this question later.
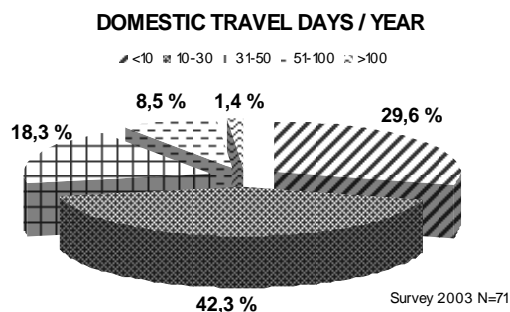
DOMESTIC TRAVEL DAYS / YEAR

Figure 2.   Domestic travel days/year

3.2   Habitual patterns

In order to map the most common behaviour patterns among the respondents (the BTs), they were asked to choose among the alternatives describing their habitual ways of making a room reservation, checking-in, checking-out and dealing with the hotel charges. It was found out that, in most cases, the actual room reservation is not executed by the respondents themselves, but by their secretary. This is understandable due to the strict travelling policies applied by the major companies worldwide. What is interesting though is that if the room reservation should be altered while on the move, 53.5% of the BTs (N=71) will call their secretary and 32.4% will contact the hotel directly (fig. 3). This, in most cases, results in increased activity in the Reception area.
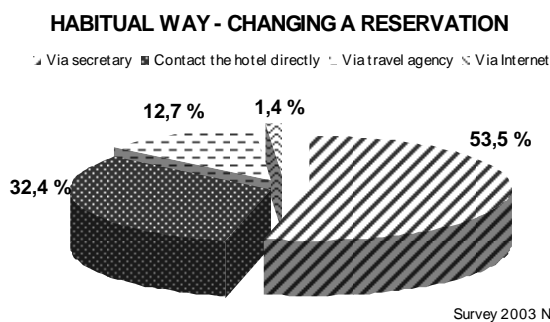

HABITUAL WAY - CHANGING A RESERVATION

◻ Via secretary ▨ Contact the hotel directly ⌐ Via travel agency ⬉ Via Internet

12,7 %   1,4 %   53,5 %
32,4 %

Survey 2003 N=71

Figure 3.   Habitual way of altering a room reservation

It was also interesting to find out that of 71 respondents only five are using the possibility of checking-in at the hotel by just signing a pre-filled travel card. Most BTs (88.7%) are following the traditional routine: giving their name – filling in the travel card – verifying the room reservation – receiving the room key. Also, 90.3% of the BTs use the traditional way to check themselves out from the hotel; they verify the hotel charges at the actual check-out process. Only three respondents out of 71 actually check themselves out beforehand, i.e. during the previous day/evening. When we take into consideration the fact that nearly 40% of the BTs also request two separate hotel bills – one for business charges, one for personal ones – the Reception area is very likely to be full of activity during the check-out hours, especially in the mornings.

The BTs were also enquired about the importance of the factors that make a stay-over successful. Besides the effortless room reservation (65.2%, N=69), check-in (50.0%, N=70) and check-out (54.3%, N=70), the security at the hotel (59.4%, N=69) and the breakfast served (54.3%, N=70) were considered as value-adding aspects during the guest cycle.

3.3   Attitudes

The BTs have used the Internet effectively for travel and tourism purposes. They have checked reservations, timetables, etc. (70.4 %, N=71), made reservations for flights (52.1%, N=71), for hotel rooms (42.3%, N=71) and for trains (19.7%, N=71). All in all, the BTs found the web services vital, since they provided the information needed. The airline homepages were listed among the best functioning sites; the hotel web pages were greeted with less enthusiasm. Hotels were criticised, among other things, for not reading their emails.

While on the move, the mobile device provides access to the Internet services via WAP or the Mobile Internet. For business travellers in general the mobile services provide yet another mean to stay connected with the office as well as to effortlessly manage their travelling. We asked the respondents whether they had been using mobile services for travel and tourism purposes.

Out of 71 BTs, four had made a reservation for a room, six for a flight, five for train tickets and 15 had checked reservations, timetables, etc. via their mobile device. The general opinion among those pioneers was that the services were not yet completely functional and not well thought through.

The BTs were also asked to mark down the factors they found to be important in a mobile reservation service. As figure four shows, the two most important factors listed by BTs are changing and cancelling a reservation without complicated operations. Essential is also the possibility to make a guaranteed reservation with a credit card. The fourth significant factor mentioned is to be able to receive an electronic confirmation for a reservation together with the option to save that note in one's mobile device. This "send-it-to-my-mobile" -service is already provided by PocketThis in some European countries.
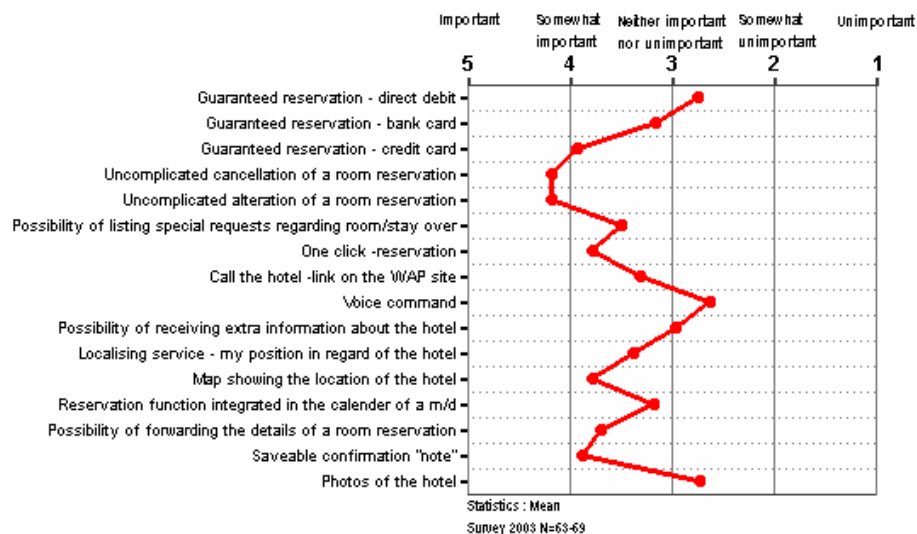

Figure 4.   Important factors in a mobile reservation service

3.4   Mobile reservation service

The BTs conveyed a quite positive attitude towards a possible mobile reservation service; no major barriers were listed (fig. 5). "The lack of price comparisons" and "Not been able to express one's wishes via a mobile device" were seen only as minor barriers. The latter obstacle can easily be removed with technology that enables two-way communication while making a reservation on the move. The attitude reflecting the third obstacle mentioned, "No need for an alternative", is also likely to diminish when the mobile device is being used to its full potential and the business travellers become acquainted with the mobile reservation service. This mobile service should be easy to use and should work without problems from day one.

The benefits (fig. 6) seen by the respondents in using a mobile reservation service were the possibilities to use it anytime and anywhere as well as to have an alternative to the more "traditional" ways of making a room reservation. Understandably, special offers received via a mobile device were not considered important by the BTs; the travelling is conducted for business reasons only and thus paid by the company. But, interestingly, the respondents additionally considered the difficulty of making price comparisons between hotels via a mobile device to be a minor barrier (fig. 5). Therefore, one could assume that receiving special offers to one's mobile device would, in fact, provide the information needed and thus ease the evaluation of prices.
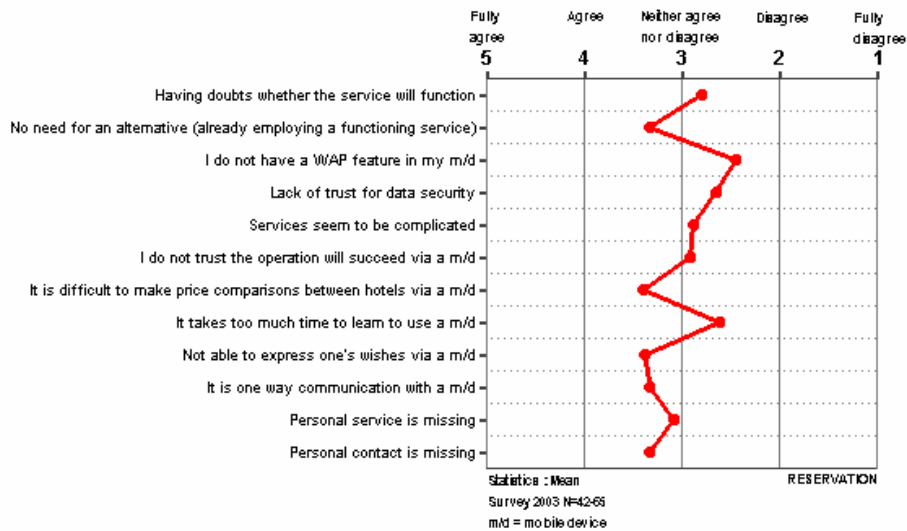
Figure 5.   Barriers for using a mobile reservation service
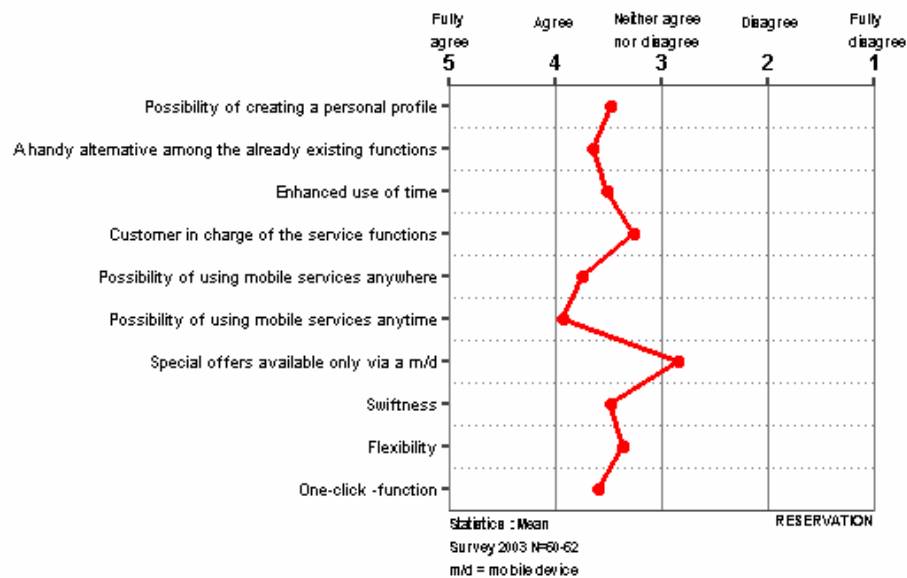

Figure 6.   Benefits for using a mobile reservation service

3.5   Mobile check-in service

The barriers listed by the BTs for a possible mobile check-in service all relate to the personal aspect of the service (fig. 7). In the BTs' opinion, the two-way personal contact with the service provider would suffer if the check-in is done with a mobile device. Therefore, when offering a mobile check-in service, the technical solutions implemented should support two-way communication in the place of a clinical, semi-automated self-service.
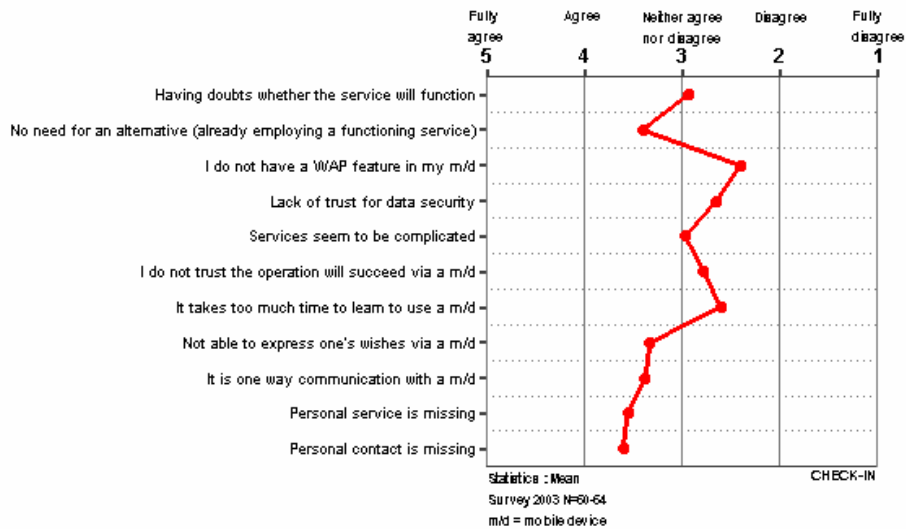
Figure 7.   Barriers for using a mobile check-in service

Being able to remotely check-in to the hotel has its advantages though; one doesn't need to be in the Reception area in order to become a hotel guest and get "signed-in". The respondents also valued the simplicity, flexibility, swiftness and mobility that the mobile check-in service would provide.

3.6   Mobile check-out service

The barriers presented in figure eight are nearly identical with the ones in figure seven. In both cases the respondents saw that the two-way personal contact would be reduced (or would be absent completely) should one check-in or -out by using a mobile service. As stated before, these barriers can be reduced with a good service design and by implementing proper technical solutions.
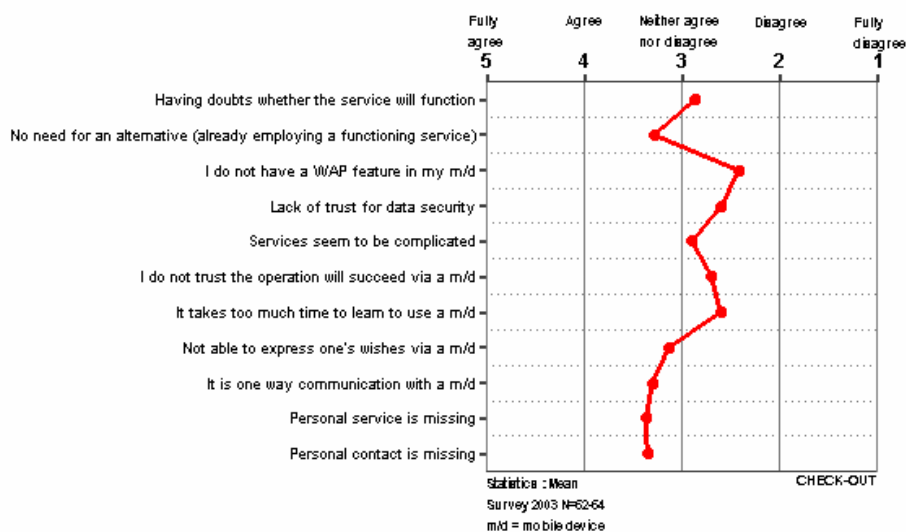

Figure 8.   Barriers for using a mobile check-out service

There were some benefits experienced among the survey participants regarding the possible mobile check-out service. The service was seen to provide simplicity, swiftness and flexibility on departure as well as to give an option to perform the check-out while on the move, e.g. on the way to the airport. The advantages are the same that were mentioned when evaluating the possible mobile check-in service.

The attitudes reflected by the survey participants towards possible mobile hospitality services were in principle positive. Since the business travellers value straightforward and foreseeable routines that enhance their use of time, the uncomplicated alteration of a room reservation as well as its cancellation were seen as important factors in a mobile reservation service. The need to be able to avoid unexpected events while on the move was also highlighted by the conveyed benefits for using the mobile hospitality services. Therefore, being able to remotely alter a room reservation or to check-in and -out from the hotel adds more freedom to the travel routines, thus creating added value for the business travellers.

Though positive about the concept of mobile hospitality services, the respondents were concerned that employing the mobile hospitality services would diminish or remove completely the two-way personal contact. With proper technical solutions this barrier can be eliminated and a feeling of collaborative personal service conveyed. Furthermore, no technical barriers hindering the use of possible mobile hospitality services were found, since the respondents evaluated the mobile services as uncomplicated to operate. In addition, most of the BTs had already a device enabling the use of mobile services.

4   CONCLUSIONS

Mobile services are part of the introduction of new technology possibilities in business and in various industries. According to Keen and Mackintosh, mobility means freedom, and freedom creates choice and value, something much more than convenience as it may revolutionize the way companies work, buy, sell and collaborate. Keen and Mackintosh go to the core of the possibilities offered by the mobile technology, but the next steps to be taken to make use of the possibilities are not well understood as it appears that we need to know much more about the actual value-adding mechanisms of the users of mobile technology.

Mobile services appear to be an obvious choice for travel and tourism as the travellers are on the move, which is the first criterion for mobile services to be relevant. The travel and tourism industry, which is one of the largest and most rapidly expanding industries in the world and one of the significant users of ICT in its operations, will no doubt be an important market place for mobile services.

A survey of the state-of-the-art in mobile service in the leading hotel chains of the world reveals that not much has been done to build mobile service functionality for the key traveller supporting services of the hospitality industry. This is despite the fact that many of them claim to offer wireless services for the traveller.

Business travellers, on the other hand, show a positive interest in getting to use mobile services if and when they become available. The key argument appears to be the possibility to enhance the productivity of working time by making routines straightforward, time-saving and foreseeable, and to work in such a way that necessary routines for checking-in and checking-out are as simple as possible, but that mobile service support is available, too, making the stay in a hotel as frictionless as possible. Another important argument for business travellers is the possibility to react to and act upon changes and events which occur during a business trip; these may cause considerable amounts of time to be spent on work with making changes, which should be more or less trivial, unless there is a tailor-made mobile support to help with these changes. The most important concern was that the human dimension would disappear, that is, that the friendly personal touch, which is part of the brand image for many hotels, would be replaced with highly efficient robotic support systems. The features of collaborative personal service should be better understood before they are worked into the smart mobile systems

solutions; understanding the collaborative features still remains a challenge for both researchers and systems designers.

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