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Adoption of mobile technology in hotel sales

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ABSTRACT

Mobile technology has advanced rapidly and significantly, and has shown great promise and potential for hotel use. However, the previous researches have focused mainly on what the impact of mobile technology on hotels is. The way how mobile technology impacts hotel is still under-explored. This study examines the strategic impact of mobile technology on hotels by studying a modern fashionable hotel using the value-focused thinking (VFT) approach. Accordingly, six fundamental objectives are found to contribute to the overall objective of maximizing the hotel's benefits of using mobile technology, including 'increase efficiency', 'increase effectiveness', ' 'provide better customer service', 'maximize company image', 'maximize employee satisfaction' and 'minimize cost'. In addition, a means-ends objective network developed by this study to depict how hotel strategies can be achieved via the use of mobile technology and serve as a conceptual foundation for future research in the area.

KEYWORDS

Mobile technology; Value-focused thinking (VFT); Hotel.
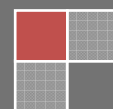
INTRODUCTION

Over the last decade, mobile technology has been becoming a tendency of information technology (IT) and gained importance and popularity in organizations[1]. By extending computing and the Internet into the wireless medium, mobile technology allows users to have anytime, anywhere access to information and applications, which provides greater flexibility in communication, collaboration, and information sharing. The emergence of mobile technology is expected to drastically affect a number of industries and to impact their strategic management[2]. Therefore, this new phenomenon needs to be better understood and warrants more research. However, the previous researches have focused mainly on what the impact of mobile technology on organizations is. The way how mobile technology impacts organization is still under-explored. In fact, to explore the impact of a specific resource, the 'how' approach is more appropriate than the 'what' approach in assessing company performance[3]. This is because a resource changes the processes in an organization, which in turn changes its competitive potential. Therefore, the 'how' approach provides a deeper and more insightful understanding of how a resource helps an organization gain strategic advantages. Accordingly, this study fills the void by examining the application of mobile technology in a hotel that has realized the importance of mobile technology and equipped its sales personnel with wireless Tablet PCs.

REVIEW LITERATURE

Mobile technology can be broadly described as technology, comprising software, hardware and communications specifically associated with mobility[4]. In other words, a form of technology that is not fixed and is capable of being portable. Typical and popular materializations of the hardware include palmtop and mobile telephones, with more sophisticated devices integrating and combining functionality. The term mobility is closely related to ubiquitous computing[5], and nomadic computing[6][5]. introduced the term ubiquitous computing and argued that in order to become ubiquitous, computers need to be more seamlessly integrated into the use environments and into people's everyday lives[7]. discussed the technical challenges of and solutions for nomadic computing. Their expression of the ''anytime and anywhere'' computing became to manifest the essence of mobility—independence of time and place. By the same token,[6] postulate mobility, digital convergence and mass scale as the three main drivers of nomadic information environment. In this environment, services will come to users whenever and wherever needed, through multiple devices at different sites, and on the move. The combination of mobile technology allows access to networks and resources in a manner previously associated with fixed location computing, and led to the flexibility of exploring and adopting new ways of working to achieve corporate goals and objectives.

Users of mobile technology can have access to the Internet and mobile applications whenever the need arises, such as when 'traveling, wandering, and visiting'[8]. Therefore, mobile technology can result in efficiency and productivity as users can make better use of their time and attend to business and social obligations in real-time[8][9]. Given these factors, mobile technology has becoming an accepted part of the technology and information systems infrastructure within organizations. Examples of applications of mobile technology in organizations include mobile access to company Intranet[10], mobile brokerage services[11], mobile payment and banking services[12], and electronic procurement application systems based on WAP using mobile phones and laptops[13].

There is still few research to assess the strategic impact of mobile technology in hotel industry. This research is a step toward this direction to fill the gap. It presents the results of a case study that identifies the values of mobile technology in a hotel and how mobile technology can have strategic impact and implications in the hotel industry.

METHOLOGY

Case study research

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident'[14]. As the aim of this research is to study the strategic impact of mobile technology applied in the hotel industry where few studies exist, case study approach is well-suited for this research. Case study allows the researchers to understand the nature and complexity of the process that is taking place and answer the 'how' and 'why' questions. Hence, it is an appropriate methodology for this research. Interviews are an essential source of case study information[14]. To identify the values of mobile applications, this research conducted interviews based Keeney's value focused thinking (VFT) approach.
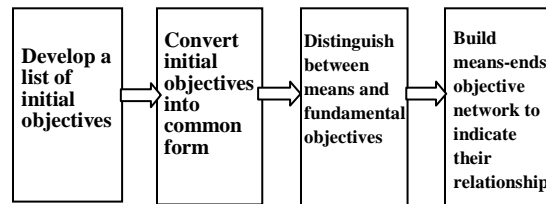
Value-focus thinking

The value-focused thinking (VFT) approach was developed by[15]. VFT fundamentally involves deciding what is important and how to achieve it. It provides a systematic approach for articulating and organizing values, which leads to a more complete set of alterative solutions and a clearer understanding of how each alternative contributes to the achievement of objectives[15].

Value are made explicit by the identification of objectives, which are statements about what one desires to achieve. There are two kinds of objectives: fundamental and means. Fundamental objectives, as the name implies, refer to the objectives underlying the essential reasons for the problems/situation on hand. Means objectives are those whose attainment will help achieve fundamental objectives[15].

VFT focuses on identifying the fundamental values the decision maker cares about in a certain decision context and determining how the fundamental values can be achieved through a hierarchical structure, that is, linkages between the fundamental values and means to achieve these values. The goal of VFT is to identify a means-ends objective network, which not only depicts the fundamental objectives and means objectives, but also the relationships between the objectives.

Model of value-focused thinking

Many decisionmakers think that it is crucial to list all objectives, but they are not specific about how to do it or how to use the objectives to guide the thinking. Value-focused thinking provides a model to do it[15]. As shown in Figure 1, first, develop a list of initial objectives, second, convert initial objectives into common form, third, distinguish between means and fundamental objectives, fourth, build means-ends objective network to indicate their relationship.

Figure 1 : Model of value-focused thinking

1 Develop a list of initial objectives. This step begins by asking the subjects questions about the values of mobile technology in relation to their job and hotel strategy. Such questions include: "What are the benefits of using mobile technology in your job?" "How does mobile technology help to achieve your hotel strategy?" The responses provide a list of potential objectives and a basis for further probing. Several techniques that can help stimulate the identification of possible objectives include: "wish list", "problems and shortcomings", "alternatives" and "consequences".

2 Convert initial objectives into common form. The initial list of objectives will come in many forms. For example, make customers happy with our service, able to do job quicker. It is more suitable to develop some consistency in these expressions. This is done by converting each item into a corresponding objective. An objective consists of a decisions context, an object, and a direction of preference that one wants to strive toward. For example, if one states that "Using mobile technology, I can provide better services to our customers." This objective can be converted to "Maximize customer service." "able to do job quicker" listed above becomes "Maximize efficiency."

3 Distinguish between means and fundamental objectives. After collecting the list of objectives, this step distinguishes between fundamental objectives and means objectives. To separate means objectives from fundamental objectives, the "why is that important (WITI)? "test can be given to these objectives to ascertain whether they are means objectives or fundamental objectives. There are basically two possible type of responses. One answer is that the objective is one of the essential reasons for interest in the situation. Such an objective is a fundamental objective. The other response is that the objective is important because of its implications for achieving some other objective. In this case, it is a means objective.

4 Build means-ends objective network to indicate their relationship. The final step in the VFT approach is to build the means-ends objectives network. This network provides a model of the specific interrelationships among the means objectives and their relationships to fundamental objectives.

Hotel Background

The hotel that we studied is a innovative and fashionable hotel and the main clients of this hotel are high technological companies. There are 22 sales representatives in sales division of this hotel. They work closely and interact regularly with customers, persuade them to stay in their hotel, collect feedback from customers regarding their products, promote their products and provide customer service. This hotel is also very 'customer-oriented' (as is also reflected in its mission statement—to provide authentic hospitality by making a difference in the lives of the people we touch every day). Therefore, providing excellent services to customers is an important component of the hotel's strategy.

Before the hotel introduced Tablet PCs and deployed them among the sales force, the sales representatives had to carry heavy paper documents with them during their visits to customers. The hotel used to print sales manuals and product catalogs on a periodic basis, provide hardcopies of product updates whenever there was a change. Also, in the past, sales representatives did not have access to computers or the Internet while visiting customers. As such, they had to wait until they were back at their offices or homes before sending follow-up emails to customers, updating customers' records, and sending out customers' product requests.

To enhance the efficiency of sales representatives and to provide better services to customers, the hotel adopted mobile technology in the sales division in March, 2010. Every sales representative is now equipped with a Tablet PC to support their daily activities. The sales representatives now carry Tablet PCs with them to the customers' sites instead of bulky paper documents as in the past. Now, the sales representatives in this hotel are mobile—meaning that they spend most of their working hours traveling (between their hotel and customers). The main reason for the hotel to adopt Tablet PCs is to gain strategic advantages over its competitors. This hotel is, therefore, an excellent site for studying the strategic impact of mobile technology in hospitality industry.

Data collection

Using the VFT approach, 16 sales representatives were interviewed regarding their use of mobile technology to support both their jobs and hotel strategies. The sample size was determined by the 'point of saturation', which is a standard stopping rule for qualitative research. Each interview lasted about 50–60 min. The interviews were audio-recorded and notes were taken by the researcher during each interview.

RESEARCH RESULTS

The means and ends objectives were derived from the transcripts of each interview. These objectives derived from the transcripts were converted into a common form containing 78 means objectives and 11 candidate fundamental objectives. After carefully reviewed: the final set of objectives includes 25 means objectives and 6 fundamental objectives, and are shown in TABLE 1 and TABLE 2. The means-ends relationships between the objectives were derived based on the subjects' responses to the "Why Is That Important?" test. The means-ends objectives network is depicted in Figure 2.

TABLE 1 : Fundamental objectives

Fundamental objectives	Evidence from interviews
Maximize efficiency	Sales representatives can do their job quicker. Sales representatives can get most of their daily job done while their visiting customers.
Maximize effectiveness	Tablet PC enables sales representatives do their job better. Tablet PC can improve the quality of product demonstration.
Maximize customer service	Equipped with Tablet PC, sales representatives can search for hotel information easily and answer queries on the spot. Sales representatives can be more responsive to customers in answering their questions.
Maximize company image	The use of Tablet PC enable the sales representatives to be more knowledgeable and enhances their professional image. Using Tablet PC shows that this hotel is really leading and cutting edge.
Maximize employee satisfaction	Equipped with Tablet PC, sales representatives can reduce their overall workload while getting the same amount of work done. Sales representatives are less likely to bring work home with them, thus increasing their overall quality of life.
Minimize cost	Hotel can reduce cost of printing paper document. Hotel can save cost in distributing sales manuals and hotel catalogs.

DISCUSSIONS AND IMPLICATIONS

The overall objective for mobile applications is to maximize the overall benefits to the hotel. We identified six fundamental objectives in this study—maximize efficiency, maximize effectiveness, maximize customer service, maximize company image, maximize employee satisfaction, and minimize cost. According to our subjects, these objectives are the fundamental reasons and main drivers for rolling out Tablet PCs to the sales personnel in the hotel.

Maximize efficiency and maximize effectiveness are the main reasons for deploying mobile technology to hotel sales representatives. With the help of Tablet PCs, sales representatives are able to have access to hotel product information through the Internet. They can check or serch for information easily at the customers' sites and provide quicker responses to customers' queries and submit customers' requests on the spot. In addition, equipped with Tablet PCs, sales representatives are able to deal with their daily tasks (such as sending e-mails to customers) between appointments and scheduled activities, and during any slack or dead time. In this way, their work efficiency and effectiveness are significantly improved.

The other fundamental objective identified is maximize customer service. Equipped with Tablet PCs, sales representatives are able to have access to sales manuals and product catalogs through the Internet whenever the need arises. They can check or search for hotel information such as room rate and available rooms easily at the customers' sites and answer queries on the spot. When customers request for room or hotel products, they can make reservations and confirm reservations with customers on the spot, which helps to reduce the time taken for customers to receive the answer. The sales representatives can also send follow-up emails to customers using their Tablet PCs during the slack time between appointments or visits. Therefore, the sales representatives can be more responsive to customers in answering their questions, processing their requests, and following up with customers. These enable them to provide better customer service.

Another fundamental objective is maximize company image. As the main clients of this hotel are high technological companies, the sales representatives feel that using Tablet PCs help them appear more confident and knowledgeable. The use of this new, cutting edge technology by sales representatives showcases the hotel's ability and willingness to be 'innovative' and at the 'cutting edge' in sharing and disseminating knowledge among salespersons, and in supporting better communication with customers. Also, the use of Tablet PCs has enabled the sales representatives to be more knowledgeable about the products and enhances their professional image, which in turn improves the image of the hotel.

According to the subjects, the fundamental objective, maximize employee satisfaction, is one of the main drivers of the hotel's decision to deploy this new technology. The sales representatives are more satisfied with their job as the use of mobile technology not only eliminates the need to carry heavy paper documents as part of their job, but also helps to streamline the process involved in sales and marketing, and enables the sales representatives to have most of the work done

while interacting with customers rather than at the end of the work day. Thus, they are less likely to bring work home with them, and increase their overall quality of life. In addition, the mobile technology enables them to utilize their time better and reduce 'slack' or 'dead' time, and helps to create a sense of belonging to a hotel by enabling them to

Table 2 : Means objectives

Means objectives	Evidence from interviews	Means objectives	Evidence from interviews
Maximize coverage area	It is important to increase coverage area of mobile service. It would be nice that wireless connection is available everywhere.	Enable e-mail follow-up with customers anytime, anywhere	Sales representatives can do follow-up with customers whenever they have some time while doing sales call. Sales representatives can send emails to customers during the waiting time for another appointment.
Maximize connectivity	I would like to have constant signals to ensure reception. Stable connection is important.	Maximize ease of searching information	It is easer to search for product information via Tablet PC. Sales representatives can use Tablet PC to search for hotel electric catalog and hotel information.
Maximize battery life	I always bring extra batteries with me to increase operating duration of Tablet PC. It is necessary to increase length of uninterrupted.	Maximize real-time response to customer's queries	When customers have questions about our products, sales representatives can answer these questions quickly via Tablet PC. Because information is readily available and easy to search, sales representatives can respond to customers' queries almost real-time.
Maximize ease of use of devices	Ensure mobile devices are simple to use. Ensure mobile devices are user-friendly.	Able to submit customer's product request on the spot	Sales representatives can make reservations on the spot and submit it electronically using the Tablet PC. When customers have special request, sales representatives can submit the requests right away in front of the customer.
Enable multi-media presentation at customer site	Sales representatives can show PowerPoint slides, audio, and video using Tablet PC. Sales representatives can do multi-media presentation to customers.	Maximize electronic recording of customer feedback on the spot	Sales representatives can record customers' feedback about hotel products or services during their visiting customers using my Tablet PC. Sales representatives can take notes, or even audio-record the customers' opinions and feedbacks.
Maximize information transfer/sharing	Easier to transfer files to colleagues. It is easer to share information among colleagues.	Maximize sense of belonging	Using Tablet PC makes sales representatives feel that they are in the team. They can connected with their colleagues anytime. Tablet PC makes sales representatives feel that they are not along. They can talk to others and get help from them.
Maximize accessibility of Internet	Able to use Tablet PC at anytime, anywhere. Able to use Tablet PC on the move.	Minimize printing cost	By making everything electronic, hotel can save on the printing cost. Company can inform sales representatives about product changes without sending paper documents.
Maximize real-time availability of information anytime, anywhere	Sales representatives can provide product information whenever they need it. Sales representatives can have hotel catalogs with them when they carry their Tablet PC.	Maximize use of employee time	Tablet PC can help sales representatives use their time better when they are doing sales call. Sales representatives can send follow-up emails to customers while doing sales call which turns idle time into working time.
Able to input information to mobile devices on the spot	Tablet PC allows sales representatives to take notes during conversation with customers and save it as a file. Sales representatives can type the notes or reminder into the Tablet PC while in customers' offices.	Improve responsiveness to customers	After using Tablet PC, sales representatives respond to customers more quickly. Sales representatives have been more responsive to customers with the help of Tablet PC.
Maximize quality of product demonstration	With the multimedia features of Tablet PC, Sales representatives can demonstrate to customers hotel new products better. Sales representatives can show customers the video that accompanies the product.	Minimize wait time of product information	By submitting customers' reservations on the spot, they can get the answer quicker. There is less wait time for customers to get the product confirmation.
Maximize communication within hotel	Communication with colleagues is more convenient after using Tablet PC. Communication speed within hotel is improved through Tablet PC.	Maximize accuracy of information	Using Tablet PC can ensure correctness of information. Tablet PC can maintain up-to date information.
Maximize collaboration with colleagues	Sales representatives can do brainstorming using Tablet PC. Sales representatives can help each other to solve some problems through Tablet PC.	Maximize professionalism	With the help of Tablet PC, customers feel that sales representatives are more professional in this hotel. By using Tablet PC, sales representatives are perceived by customers to be more capable and knowledgeable.
Minimize the need to carry bulky paper document to customer site	It is paperless to use Tablet PC. Sales representatives used to carry catalogs to customers' office but all the information is in Tablet PC now.		

Communicate and collaborate with their colleagues more easily and readily. Hence, employee satisfaction has significantly increased. Minimize cost has been identified as another fundamental objective in using mobile technology. This fundamental objective can be achieved through cost saving in printing and distributing paper documents such as sales manuals and product catalogs.

The means objectives derived from this study as well as the relationships between them illustrate how the fundamental objectives can be achieved. The means objectives not only include features or functions of mobile technology, but they also suggest possible applications for sales management in hotel.

Among all the means objectives, accessibility and real-time availability of information anytime, anywhere were emphasized by almost all interviewees. Accessibility is a key requirement for wireless applications: being able to use them anytime, anywhere, and while on the move are important criteria. The main duty of sales representatives is to visit clients. They need mobile and wireless devices to provide them with access to information whenever the need arises and regardless of location. Without these basic requirements, mobile applications would not be working to the hotel. In addition, these two objectives are the means to achieve a number of other objectives.

The subjects we interviewed also highlighted the unique features or functions provided by mobile technology that have made mobile applications valuable. These features/functions include accuracy of information, real-time response to customer's queries, ease of searching information, collaboration with colleagues, quality of product demonstration, and multi-media presentation. These are the means that lead to the rest of the objectives in the means-ends objective network.
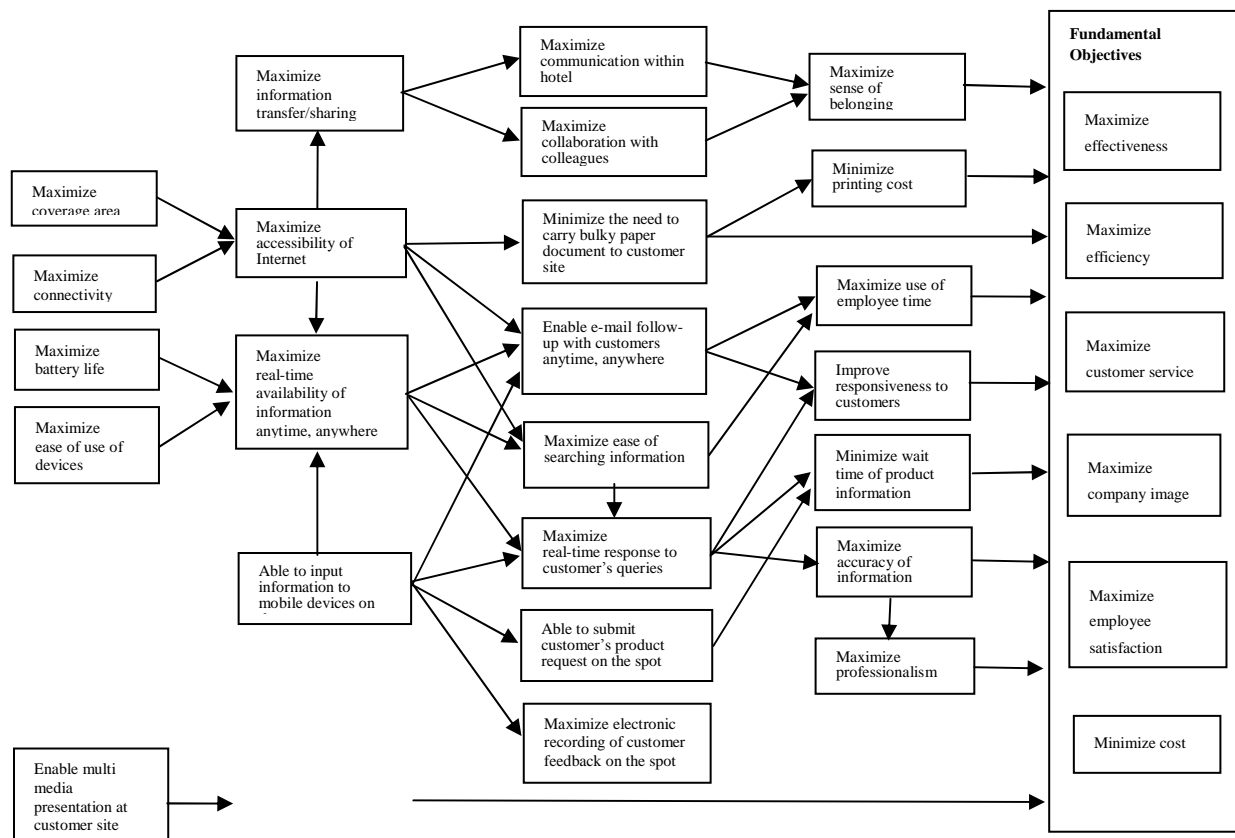

Figure 2 : The means-ends objectives network

CONCLUSIONS

Mobile technology has advanced rapidly and significantly, and has shown great promise and potential for hotel use. As demonstrated in this study, mobile technology can be used as a strategic tool in hotels. This study examines the strategic impact of mobile technology on hotels by studying a modern fashionable hotel using the VFT approach. The use of the qualitative approach provides us with deep insights on the strategic implications of using mobile technology to support sales and marketing in this hotel. In this case study, six fundamental objectives are found to contribute to the overall objective of maximizing the hotel's benefits of using mobile technology. The main drives for the hotel to adopt mobile technology are to 'increase efficiency', 'increase effectiveness' and 'provide better customer service', which are three key dimensions of competitive advantages. In this hotel, mobile technology has been adopted and applied in the hotel as a strategic tool to achieve competitive advantages.

One of the major contributions of this study is the development of a means-ends objective network that depicts how fundamental objectives can be achieved through means objectives, that is, how hotel strategies can be achieved via the use of

mobile technology. The relationships between means objectives and fundamental objectives demonstrate how mobile technology strategically impacts the hotel.

In addition, a means-ends objective network that can serve as a conceptual foundation for future research in the area. For researchers, this network presents a framework and model for understanding and explaining the strategic implications of mobile technology in hotels. For practitioners, the means-ends objective network presents a 'roadmap' that can help them achieve hotel strategies and gain competitive advantage when adopting and implementing mobile technology.

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