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Introducing Web technology in a small peripheral hospitality organization

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Keywords
Soft systems methodology, Small- to medium-sized enterprises, Hotels, Internet, Online transaction processing, Reservation systems

Abstract
The emergence of global electronic markets on the Internet has been seen as an opportunity for small and medium-sized tourism enterprises to improve their competitive position. However, several barriers hinder small hospitality organizations from capitalizing on IT and the Internet. This paper reports on an action research program of introducing Internet technology in a small hotel located in a peripheral region of Finland. As part of a project funded by the European Union, a complete integrated Web booking and hotel management system was developed, denoting a re-engineering of many business processes. The system, which features customer online (real-time) reservation services was an inexpensive, user-friendly solution specially designed for the purposes of small and medium-sized hospitality organizations with little prior IT knowledge. In the field of online reservation systems, the hotel is a pioneer, as it is the first independent hotel in Finland to offer online reservation services through a non-customized reservation system.

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Introduction

The travel industry appears exceptionally interesting in terms of the possibilities offered by e-commerce. Not only is it one of the rare industries where business-to-consumer Internet commerce is conducted on a large scale already today, it is also an industry with great traditions in the information technology (IT) sector (Standing *et al.*, 1999). Because of its dependence upon the supply and exchange of information throughout the production and distribution chain, the tourism industry has proved particularly suitable for the adoption of IT (Bennett and Radburn, 1991; Sheldon, 1993). Travel services fit extremely well with the new interactive media (McKee, 1999; Werthner and Klein, 1999), as the products are natural candidates for multimedia descriptions (Byerley and Ewers, 1996; Marcussen, 1998).

A feature of the travel industry is that, as mass tourism has developed, so have the large chains and corporations in the accommodation sector. Hotels and motels have reached a stage of development in which a few major companies have come to dominate the international market as a result of an expansion largely achieved through franchising (Holloway, 1983). Still, it is evident that the vast majority of tourism suppliers around the globe, especially in the accommodation sector, can be classified as small and medium-sized tourism enterprises (SMTEs) (Buhalis, 1996, 1999). Due to their scarce resources and deficient marketing and management functions, SMTEs tend to be over-dependent upon intermediaries for promoting and distributing their products, with the middlemen minimizing the SMTEs' bargaining power within the distribution channel (Buhalis, 1996; Werthner and Klein, 1999). As a result, SMTEs face enormous difficulties competing with their larger counterparts (Buhalis, 1999).

Despite the massive growth in the international expansion of global distribution systems (GDSs) (Collier, 1991), SMTEs still remain under-represented in these immense systems, effectively endangering their competitiveness and market share (Buhalis, 1996). According to Werthner and Klein (1999), over 85 percent of the European accommodation providers are not listed on the GDSs serving more than 50.000 travel agents worldwide. As a result of this limitation of the GDSs, not only the SMTEs that are outside this infrastructure are at a disadvantage, but also the prospective tourists, whose choice of service providers is heavily restricted.

It has been suggested that the emergence of global electronic markets on the Internet may provide a comparative advantage for smaller suppliers (Sheldon, 1997; Buhalis and Main, 1998; Werthner and Klein, 1999). According to Buhalis (1999), IT has become the travel industry's key partner, as the Internet has empowered even tiny tourism organizations and destinations, giving them representation in the electronic marketplace. The Internet has also been seen to offer companies in peripheral regions an opportunity to improve their competitive position in relation to firms with more attractive geographical locations in urban centers. This assumption is based on the global character of the Internet and the boundaries of e-commerce not being defined by geography or national borders. However, many hindrances still remain despite the opportunities offered by the new medium, especially as a large majority of the SMTEs worldwide lack either the IT skills or the financial resources (or both) to take advantage of the opportunities offered by the Internet. Moreover, small and medium-sized hospitality organizations (SMHOs) are often located in peripheral regions, where the IT revolution has not always been as fast and profound as in the urban centers. Hence, the perceived barriers to an effective commercial

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use of the Internet are likely to be even higher for peripheral than for urban SMHOs.

According to Buhalis and Main (1998), SMHOs that are not represented in the electronic marketplace will fail to bridge their distance with consumers, and suffer competitive disadvantages. The European Union (EU) has shown a special concern for SMEs in peripheral regions, establishing a regional development fund (ERDF) aimed at giving peripheral SMEs better chances to survive in a world of ever-increasing competition. With funding by the ERDF as a part of a program aimed at promoting the usage of e-commerce among SMEs located in less favored regions of the EU, a research project, running from May 1999 to December 2000, was carried out in the Finnish region of Vakka-Suomi. Within the project, Internet strategies and Web sites were developed for seven small companies in the region. For the participating companies, the project offered a low-cost way to get started with e-commerce, especially as the project was followed up by another EU-funded training project, the purpose of which was to teach all the interested businesses in the region how to plan, use and update their Web pages. For most of the project companies, the Web solutions designed were comprehensive, and hence involved a reengineering of many existing business processes. The project was administered by the Institute for Advanced Management Systems Research at Åbo Akademi University, and carried out by a team of researchers who worked as EC consultants in the project companies. In short, the objective of the Web team was to plan and implement a sound Internet strategy for each of the participating companies in order to improve their competitive position in the new millennium.

The client

Most of the accommodation establishments worldwide are small or medium-sized, belong to local entrepreneurs, are family run, and predominantly employ members of the host society (Buhalis and Main, 1998; Witt *et al.*, 1991; Morrison and Thomas, 1999; Werthner and Klein, 1999). In the small hotel the owner/manager is an entrepreneur who normally combines not only ownership and management, but often also the functions of top and operational management in one person. He may turn for outside advice and help on many matters, but the owner/manager tends to be, to a great extent, his own marketer, buyer, personnel officer as well as the person who organizes and coordinates the hotel facilities and services generally, and who represents the hotel to the outside world (Medlik, 1980).

This account of the typical managerial operations in a SMHO could just as well be a description of Hotel Lannentie, a small-size Finnish hotel/motel located in Uusikaupunki, a small archipelago town (17.500 inhabitants) situated in the Vakka-Suomi peripheral region, approximately 230km northwest of Helsinki. Hotel Lannentie, boasting a total of 35 rooms with 75 beds, is owned by Reijo and Maija Virtanen, who run the company together with an assistant managing director, Mauri Tenhonen. The hotel amenities include a bowling hall, a restaurant, a bar, a nightclub, and a swimming pool with a Finnish sauna as well as a number of small conference rooms.

Prior to the beginning of the project, the use of IT was almost non-existent at Lannentie. Despite the fact that the local commercial school had created a Web site for the hotel in the fall of 1998, it was evident that the Lannentie managers were unaware of the wide range of possibilities offered by Web technology. The Web pages developed by the students were purely informative and static. Since the launch, they had never been updated. Moreover, the reception desk was not equipped with a computer, meaning that all reception procedures were handled in a highly traditional manner, using physical books. The initiative in introducing Internet technology in the hotel was taken by Mauri Tenhonen, who registered the hotel for participation in the project convinced of the fact that the hotel soon would be out of business unless immediate steps were taken to introduce customer service on the Web.

Research methodology

The soft systems methodology (SSM) is an interpretive approach to organizational problem solving which can be used to provide a structure for action research in which desirable change and organizational learning are the aims (Checkland and Holwell, 1998). SSM, which primarily is focused on ill-structured problematical situations in which people try to take purposeful action, is a relevant approach for structuring action research concerned with information systems (Checkland and Scholes, 1990; Checkland and Holwell, 1998). According to Ingram (2000), the soft systems approach is particularly appropriate for the study of hotel operations, as it enables its richness and complexities to be modeled

without preconceptions. In this research, we have applied the SSM as a system development methodology, stressing the importance of the aims for desirable change and organizational learning in the study.

SSM is characterized by a method of building models of purposeful activity in order to explore a problematical situation coherently. Building such models normally requires a careful concise description of the purposeful activity, or the "root definition" (RD) (Checkland and Holwell, 1998). Figure 1 shows a human activity system built by taking the general project mission statement as if it were an RD, which, then, would be formulated as: "Web systems solutions for each of the project companies based on a careful investigation of their specific needs, goals as well as the company and project resources". The activity system contains a large number of sub-activities, each of which could itself be used as an RD, and this process could go on to more and more detailed levels if necessary.

Having accomplished the tasks 1-4, an RD-specific for the Lannentie project was developed, formulated as: "An information system, designed for the special needs of SMHOs, that facilitates the reservation and reception procedures of the staff, including Web services that allow for fast and convenient self-bookings by e-customers". From this RD follows, of course, a sub-activity of determining "the special needs" of SMHOs in general, and Lannentie in particular. Figure 2 shows the commonly perceived barriers in peripheral SMHOs to launching Internet services, and some potential solutions to these problems. These issues are discussed next.

Problem exploration: barriers to introducing IT in SMHOs

Although the Web has been seen as an opportunity for SMTEs to reach customers in a business that is essentially global in character, many barriers still inhibit SMHOs from fully capitalizing on IT and the Internet. Of these obstacles, four stand out as especially important:

1 lacking financial resources;
2 lacking IT knowledge/experience;
3 resistance to change; and
4 peripheral location.

Figure 1
An activity model built from the project mission statement

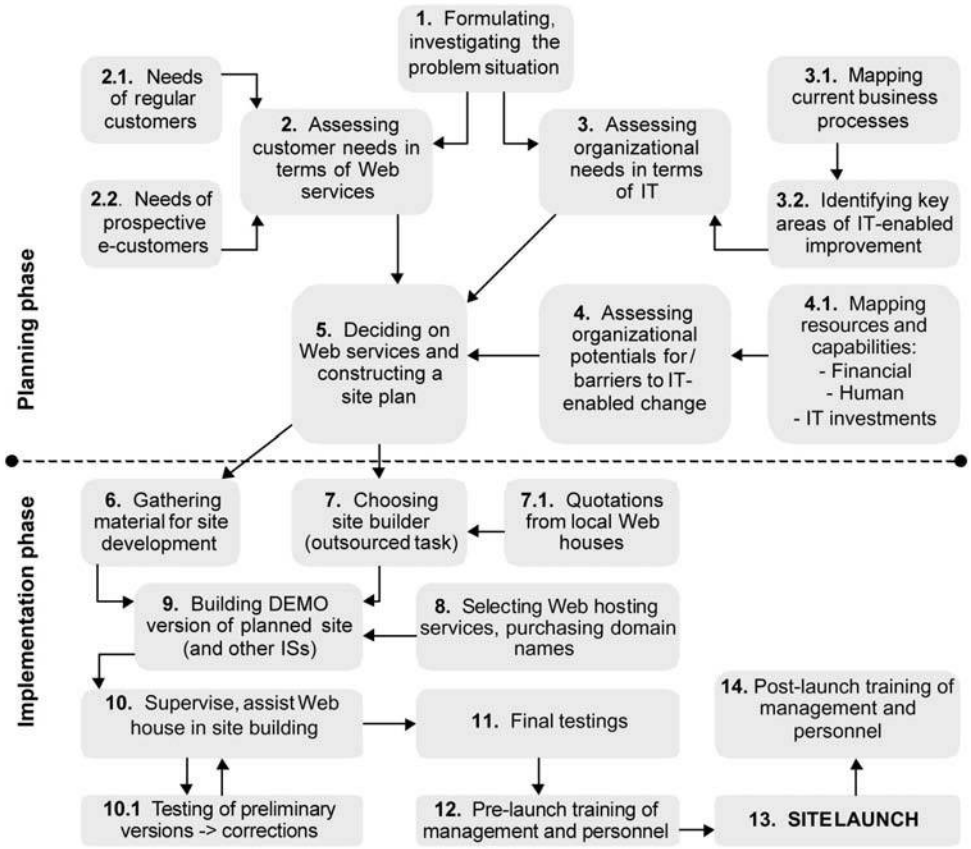

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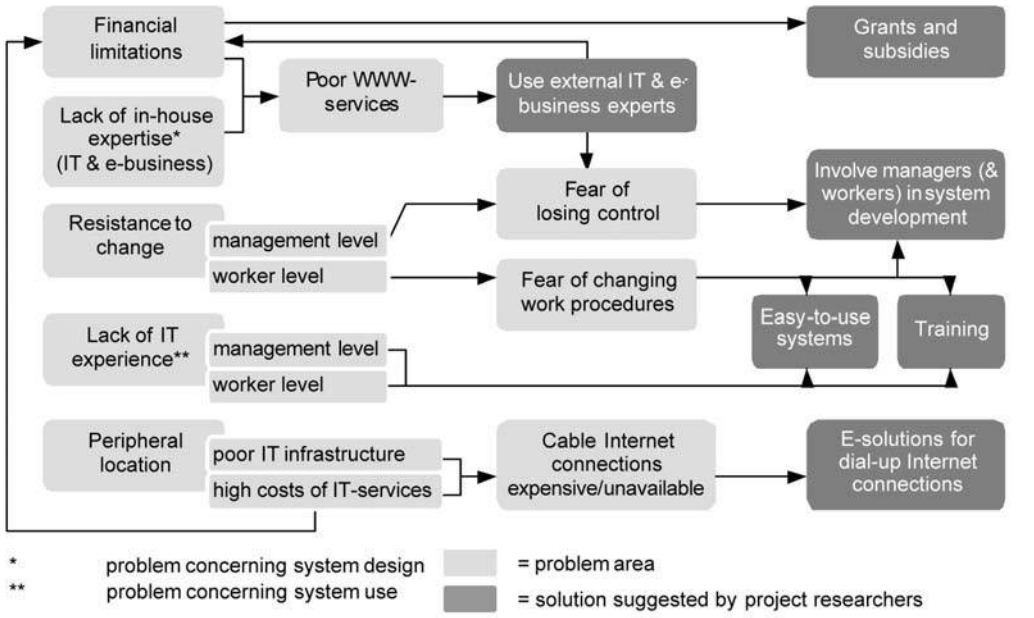
Figure 2
A rich picture showing the problem situation as perceived by SMHOs in Web systems development as well as Hotel Lannentie given the formulated RD



Lacking financial resources

Developing a sensible Internet strategy and a professional Web site may require sizable investments. As the typical SMHO usually can marshal only limited investment capital from its own cash flow and from external sources, its scope for investments in Internet technology may be limited. Few companies, and certainly not SMEs, have sufficient in-house expertise to launch an e-commerce project without some external help (Schneider and Perry, 2000), but the typical small hotel can simply not afford to employ specialists (Medlik, 1980).

Although it can be argued that a Web presence does not necessarily involve great costs, minimizing the expenses by cutting down on essential forms of customer service is a highly questionable strategy. The slow growth of business-to-consumer e-commerce (as compared to early optimistic predictions) has surprised and disappointed many experts as well as companies that have invested heavily in ec-applications. A viable reason for the reluctance of consumers to shop on the Internet lies in the fact that initial Web services have offered little – if any – added value for the customers in comparison to traditional methods of shopping. Many Web sites can be considered merely a marketing presence or a passive advertisement (Turban *et al.*, 1999), but the e-consumers of today are expecting to derive indisputable benefits, e-value, from the marketspace.

The human resource is the foundation of the tourism industry (Mulcahy, 1999). This is especially true in the accommodation sector, where the quality of the service is the key success factor, the aim being to make the visitor enjoy his stay and to achieve repeat visitation. With the Internet, a new component to the concept of service quality has, however, been added. Technology not only gives industry players an opportunity to improve the quality of the offered services (Baines, 1998), but it also sets new demands on companies in this regard. Laws (1991) suggests that the twin foci of concern for service managers are:

1 the underlying technology of their business; and
2 the human interactions required to deliver satisfactory experiences to the client.

According to the author, many tourism services are technologically complex, and hence few customers are able to judge the technical quality of the service experience, but instead they make assessments of the skills and attitudes of the staff. However, as travel service providers introduce Web services – and especially online reservation features – the opposite becomes true: Evaluating the range and technical quality of the Web services in the *pre-travel phase* becomes easy, whereas it remains hard (or impossible) to form an opinion, prior to the visit, on the skills and attitudes of the staff in the *at-destination phase*. Due to the fact that Internet technology allows some aspects of the service quality of a hotel to be assessed

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prior to the reservation phase, the importance of offering value-adding customer services on the Web must be highlighted, especially as travelers tend to show little or no brand loyalty (Warren and Ostergren, 1990; Robinson and Kearney, 1994; Baloglu *et al.*, 1998), but instead require travel products at the lowest price and of the highest quality – consistent with their own value judgments and preferences (Buck, 1988).

It is a well known fact that speed is crucial in the travel industry in responding to a guest, travel agent or tour operator inquiring about, for instance, room availability (Medlik, 1980). Customers benefit from Web online reservation services by gaining immediate gratification of their requests (Pollock, 1996). Hence, a hotel Web site should, according to the worldview (*Weltanschauung*) adopted by the project researchers, offer prospective customers a wide range of information and services, including online (real-time) reservation features. The instant confirmation benefit offered by the online approach has likely been one of the primary reasons for the explosive growth of business-to-consumer transactions in the travel industry compared to most other e-suitable industry sectors and product categories. If hotels limit their Web services to inquiries on price and availability over e-mail, the telephone or walk-in approach still offers the only way to an immediate booking confirmation, giving a competitive advantage to these labor-intensive, and hence more expensive service models.

Lacking IT knowledge/experience

SMTEs' illiteracy in IT essentially means that they are unable to take advantage of many opportunities for efficiency improvements and enterprise promotion. Proprietors of SMHOs tend to lack the expertise in selecting, installing, and operating computerized systems. Therefore they tend to fear that they will lose part of their control, should they allow external IT experts to undertake these jobs for them (Buhalis and Main, 1998). However, this is certainly not always the case. The owner/manager may have a sympathetic attitude towards technology, seeking IT enabled changes, but due to his and/or the personnel's limited knowledge he may be unable to develop or use the technological tools he feels the organization would need.

The IT revolution has profound implications for the management of the industry (Buhalis, 1999), which means that the hotel manager of the future must be familiar and comfortable with technology, able to see and exploit its potential (Baines, 1998). With an increasing number of computer-literate prospective travelers, consumer expectations could force the introduction of IT in SMHOs and their satisfaction would increasingly depend on this provision. Unless the SMHOs satisfy their needs, they will fail to attract consumers (Buhalis and Main, 1998).

In the accommodation business, introducing IT and proper Web services most likely results in many business processes being altered, perhaps even radically. This not only implies organizational challenges, but also, as was mentioned above, great cost by the standards of any SMHO. One problem with making effective use of technology in the hospitality industry is the lack of appropriate training. There is widespread consensus that formal training in the sector falls short of its new requirements for skilled workers within the field of technology (Baines, 1998; Jameson, 2000). Typically in SMHOs, the entrepreneurs tend to look on training more as a cost than as an investment (Mulcahy, 1999).

Resistance to change

Closely related to the issue of lacking IT knowledge is the barrier arising from a resistance to change at management and/or worker level. According to Collier (1991), there are all sorts of reasons why managers (and workers) might resist technological change. First, they may resent change especially if there is no consultation. Second, they may be anxious about their job, and third, they may be worried about appearing incompetent. The staff is, however, much more likely to welcome new working procedures when they have been consulted and are actively involved in their introduction and application (Baines, 1998).

Peripheral location

The barriers to introducing IT are likely to be even higher in peripheral regions, where new technologies not always gain a foothold as rapidly and with the same intensity as in urban centers. The barriers may also arise from technological services; for instance, broad bandwidth Internet connections, being more expensive as a result of the limited demand, or a technological infrastructure not being available in peripheral areas because of the great expenses involved. Hence, for many peripheral SMHOs fast Internet connections are not a matter of course, which must be taken into consideration when planning their Internet strategies. Moreover, in peripheral regions, IT-knowledgeable workers and

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professional consultants may be hard to find or extremely busy. Consequently, the peripheral companies may not be able to find system developers or workers who can operate the systems.

As a result of these potential barriers to introducing IT, many SMHOs have not been able to fully capitalize on the Internet. Where larger hotel chains already two decades ago began installing their own computerized reservations systems to cope with the worldwide demand for immediate confirmation on availability and reservations (Holloway, 1983), independent SMHOs still today reach the overseas markets through membership of marketing consortia or representation by a hotel representative agency. The usual Web approach of an SMHO is either to create a simple, informative Web site lacking in functionality, with reservation inquiries and confirmations sent by e-mail; or use an intermediary Web service provider offering online bookings, but an inadequate space for the presentation of rooms and amenities.

All the suggested barriers to introducing IT in SMHOs could be seen at Lannentie, substantiating the general applicability of the suggested problem situation model (Figure 2). For instance, the lack of financial resources at Lannentie was evident, as the fee for participating in the project (€1700) nearly caused the hotel to withdraw from the project at a stage when the reservation system had already been planned in detail. Another reason for the owner hesitating about the project was that he initially could not envision potential visitors deriving any substantial benefits from a Web presence. Moreover, he feared that the computer-illiterate personnel would not be able to use the systems developed.

EC strategy formation

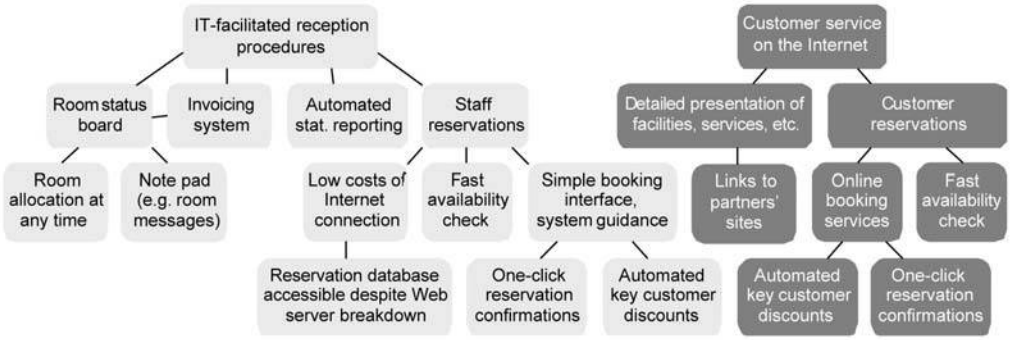
As was evident from the discussion above, the RD formulated takes as given a worldview according to which IT-enabled change is desirable as it increases efficiency, and Web services must offer e-value, which in the accommodation sector means online reservation services. Based on this declared outlook, a model of purposeful system features was developed (Figure 3).

In the accommodation business, the product is rarely seen by the customer as purely "a room in which to sleep". Rather, it is a "total leisure experience", a bundle of tangible and intangible goods and services (Holloway, 1983; Baloglu *et al.*, 1998). Hotel accommodation and other hotel products are part of the total tourist product, covering the whole travel experience (Medlik, 1980). Accordingly, the Web site created for Lannentie (www.hotelli-lannentie.fi) was a comprehensive information and service package emphasizing all the business activities of the hotel. However, at Lannentie, as in most hotels, the provision of sleeping accommodation is the primary source of revenue. Moreover, it constitutes the service activity where customers as well as the personnel can derive the greatest benefits from IT and e-commerce. Hence, the greatest efforts were put into the IT applications as far as the *reservation process* and other *reception procedures* were concerned.

In accordance with the adopted worldview, the researchers decided to implement a Web online reservation system for Lannentie, well aware of the fact that this is a rare service model among SMHOs, where the preferred approach is to offer reservation opportunities by e-mail, meaning that the bookings cannot be verified instantly, but have to be checked and confirmed manually. The idea of an online reservation system was strongly supported by the assistant managing director, whereas the owner-manager initially opposed the idea convinced of the fact that such a solution would be technically too complicated for the staff. Moreover, he was concerned about the high costs arising from acquiring an Internet cable connection, which he assumed such a service would require. As a result, he suggested a solution offering potential visitors the opportunity to make online reservations on the Web, whereas the bookings handled by the personnel would be recorded in a physical reservation diary instead. According to the owner, updating the reservation database once or twice a week during peak seasons would be sufficient. However, as he learned more about the risks and disadvantages of such an approach, and eventually came to realize the potential benefits of introducing IT in his business, he soon showed a keen interest in building a comprehensive system, including online booking features and reception management tools.

In many SMHOs, including Lannentie, the booking and reception procedures are still today handled in a highly traditional fashion, i.e. all events are recorded in books that are kept at the reception desk. Consequently, all bookings must be made by phone, fax or e-mail and must be manually registered and verified by the hotel clerk. Although Lannentie had introduced e-mail services in 1998, nearly all bookings were still made by phone or fax, perhaps due to the slow processing of e-mail inquiries resulting from

Figure 3
A model of purposeful systems features



the reception desk not being equipped with a computer. In fact, most of the inquiries were processed from the assistant managing director's home computer.

If a hotel is to derive full advantages from an online reservation system, with all the automation of essential information this can bring, the Web system must support the existing procedures and be compatible with possibly existing information systems for booking and reception services. However, as Lannentie had made no use of IT in their business processes up to this point, no previous applications had to be taken into consideration when planning the system. Although there are advanced – and rather expensive – hotel management software solutions available, the research team decided to design a complete integrated Web booking and hotel management system, named *HotMot*, from scratch in order to generate a solution that is specially designed for the purposes of peripheral SMHOs, taking the following special demands into consideration:

1 the low IT knowledge/experience of the staff;
2 dial-up Internet connections;
3 limited financial resources for system development, license fees and system modification.

Outcomes: *HotMot* system features in brief

Customer bookings

A great shortcoming of many Web travel reservation systems is the apparent lack of user-friendliness resulting from complex and time-consuming search mechanisms. Typically, the functionality of comprehensive reservation systems has been more or less duplicated even though user-friendlier services could have been developed. On the Web, where a rapidly growing number of companies today pursue a strategy (outspoken or concealed) to profile their customers, the consumer has to register in order to have access to just about any service. If the user has to fill in a two-page form whenever he wants some information on a subject, the risk for consumer irritation is apparent.

In the travel industry, the *availability* of the service is the key issue (once the customer has decided on when and where to go). Studies done by Anckar and Walden (2000a, 2000b) show that the self-booking of journeys is a difficult and highly time-consuming task even for low-complexity arrangements. And indeed, if checking the availability of hotel rooms means having to register for the service and entering (and re-entering) many parameters in a search engine, one of the great consumer benefits associated with e-commerce; namely, making price comparisons, is unlikely to be derived. Hence, in the system designed for Lannentie, the number of available rooms in each accommodation category (real-time information) is posted on the Web, allowing the customer to quickly check the availability prior to working through the registration procedure. Registration is required only if proceeding with an online reservation.

As a result of business-to-business negotiations, Lannentie accommodates many corporate customers. For Lannentie, these regular business visitors constitute an exceptionally important customer segment as they help the hotel to cope with the long slack season. Hence, they are offered remarkable discounts on accommodation. The *HotMot* allows the hotel staff to grant existing key customers discounts by manually specifying the customer-specific negotiated rebate (calculated as a percentage of the standard price) in the customer database. When these visitors log on and make their bookings on the Web, the system

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automatically displays and calculates the discounted price.

An important point to be made is that the hotel does not have to be connected to the Internet when a customer reservation is made on the Web. When a booking takes place, all the reservation and customer data is saved in a secondary reservation database on the Web server, and the availability table on the Web site is updated immediately.

Personnel bookings

Whereas the customer bookings require that the Web server is in operation, the reservations made by the staff can take place despite a possible server collapse. This function is made possible by the reception module of the *HotMot*, which runs on the local hard drive of the reception PC. The reception module includes booking services analogous to the Web module; however, with slightly more advanced features (activated availability table for speedy bookings, an unlimited number of rooms can be booked in one go, bookings can easily be changed or cancelled, etc.). When the booking application of the reception module is opened, the program automatically connects to the Internet, and downloads all the new customer reservations made, after which it disconnects. As a result, the receptionist can see the real-time availability situation, and give telephone or walk-in customers instant booking confirmations. Likewise, the Web availability table and reservation database is automatically updated by the system when the receptionist has completed, changed or cancelled a reservation.

Room allocation and statistical reporting

In most hotels, including Lannentie, rooms are allocated to the guests prior to their arrival, typically as late as in the morning of the arrival day of the customer. The *HotMot* is a capacity booking system, meaning that the system does not automatically allocate a specific room to the customer. It only reserves a room in the chosen accommodation category, allowing for greater flexibility for the staff. This was seen as an important feature by the Lannentie management, as many of the regular customers tend to have strong preferences for specific rooms. With this system, room allocation is made by human judgment at any time after a reservation has been made.

Finnish hospitality organizations are by law obligated to provide the National Statistics Office with some essential data every month. According to the Lannentie managers, this task has been rather time consuming, as data had to be gathered from physical (non-computerized) sources, e.g. the hotel register. Consequently, one of *HotMot*'s most obvious benefits to the staff was the automation of this data collection process, especially as the system allows the required statistics to be printed out (or sent by e-mail) using the official form of the statistics office.

As the entire Lannentie Web solution (including pre- and post-launch training programs) was developed within an EU-funded project, the total investments made by the hotel were very modest. Lannentie's share of the development costs was €1700 plus some minor hardware costs. The costs of developing the whole system amounted to approximately €11.800 (the salaries of the researchers not included).

Learning from the experience

The Lannentie project generated some important lessons in the field of information systems development (ISD) in small organizations. First, not only were all the suggested impediments for SMHOs to launching Internet services (Figure 2) confirmed, but the dimensions of the barriers were striking. Based on the Lannentie experiences, the use of external IT/e-business experts is imperative even in rather small-scale Web projects due to the lack of IT and/or marketing skills of the managers and the staff. Equally important is, however, to realize the importance of an active involvement by hotel managers (and workers) in the system development process, as only they possess the specific knowledge about the day-to-day operation that is essential in order to identify purposeful system features.

Second, it is a well-known fact that manager commitment to the project is a keyword in ISD, but in our experience, devotion is not automatically achieved by manager involvement in the ISD process. Instead, we argue that a thorough examination and comparison of the ways managers, workers and researchers perceive their world and interpret purposeful action is the key to commitment by all parties. Hence, we see manager commitment as a logical and desirable outcome of the learning cycle. Moreover, we believe that this process by necessity leads to interpretations of purposeful action being altered by all individuals involved, at least to some extent. These tendencies could certainly be seen in the Lannentie case, where the managers became much more committed to the project, and their conceptions of purposeful system features were drastically altered as the

project and the learning cycle advanced. Checkland and Scholes (1990) correctly stress that it is wrong to see SSM simply as consensus-seeking. However, in our opinion, the SSM itself may serve as a driver toward consensus due to the fact that it activates people in a learning cycle, which is ideally never-ending.

Conclusions

The Internet offers SMHOs opportunities to:

- improve their competitive position in relation to their larger counterparts by giving them representation in the global marketplace;
- be independent of intermediaries and to promote and distribute their own services;
- keep their doors open 24 hours a day, at minimal costs to customers all over the world;
- give customers the choice to view and self-book services at a distance; and
- automate many business processes.

However, several barriers hinder SMHOs from taking full advantage of IT and Internet commerce:

- lacking in-house IT skills;
- limited financial resources for system development/modification and training;
- resistance to change; and
- location in peripheral regions, where the IT revolution has not made inroads in the same way as in urban centers.

To overcome these barriers, of which we found ample evidence in the Lannentie organization, SMHOs have to look for useful, inexpensive systems that take their special demands into consideration. The *HotMot* Delphi hotel management software, which was the outcome of an EU-funded ISD process in which the soft systems methodology was applied, is specially designed for small (peripheral) hospitality organizations. With the introduction of the system, Lannentie will become a pioneer in Finland, as it is the first independent hotel to boast a non-standardized Web online reservation system. However, other firms within the great cluster of SMHOs with similar needs as Lannentie, have the opportunity to purchase system licenses for a fee which is nominal in comparison to the fees of more advanced hotel management systems, which are primarily designed to cover hotel chains. It is our belief that the availability of Union or Government grants, and cooperating with non-profit research organizations can make a great difference for SMEs by offering them low-cost ways to get started with e-commerce without having to cut down on essential forms of Web customer service.

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