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ICT and e-Hospitality

e-Hospitality is an umbrella term that incorporates the entire range of information communication technology (ICT) applications in the hospitality area. ICTs penetrate at a fast pace, by integrating the hotel operation; reshaping the marketing function; improving total efficiency; providing tools for marketing research and partnership building; enhancing customer services while providing strategic opportunities. Consumers increasingly expect ICT-enabled communications and interactions before, during, and after their visit. Hotels will be unable to perform their operations profitably without using technology extensively. The emergent ICTs provide unprecedented opportunities for hospitality organizations, as they assist the promotion of properties to a wide range of institutional and individual buyers around the world. ICTs are increasingly recognized as a means of achieving competitive advantage for the hospitality industry.

Managing internal operations

Hotels need ICTs to manage their inventory. Hotel chains in particular use group-wide systems to focus on the management for single properties as well as the distribution through a variety of electronic distribution channels. Most hotel properties around the world operate a *property management system* (PMS) that enables them to integrate their 'back-office' operations. As a result they can improve general administration,

as well as specific functions such as accounting; marketing research and planning; yield management; payroll; personnel management; and purchasing at individual properties. Increasingly these functions move on Intranet platforms, improving interfaces and allowing easier employee training.

PMSs were also introduced to facilitate the front office, sales, planning, and operation functions. This was achieved by employing a computer reservation system (CRS) to administrate a database with all reservations, rates, occupancy, and cancellations (Frew and Horam, 1999; O'Connor, 2000). PMSs and CRSs facilitate the following business functions:

- Improve capacity management and operations efficiency
- Facilitate central room inventory control
- Provide last room availability information
- Offer yield management capability
- Provide better database access for management purposes
- Support extensive marketing, sales, and operational reports
- Facilitate marketing research and planning
- Enable travel agency tracking and commission payment
- Enable tracking of frequent flyers and repeat hotel guests
- Allow direct marketing and personalized service for repeat hotel guests
- Enhance handling of group bookings and frequent individual travelers (FITs).

The proliferation of the Internet supported the development of a number of additional electronic

distribution options. These include direct bookings to the hotel; hotel chains' own reservation central offices; independent reservation agents; hotel representation and consortium groups; airline CRSs and GDSs; hotel aggregators (such as Hotels.com) and destination management systems. For hotels to manage their distribution best they need two integral components, namely yield management and guest history. The yield management assists hotels to maximize both their occupancy and room rates contributing directly to their profitability. Revenue and yield management systems ensure that hotels optimize their revenue, by taking into consideration past and forecasted performance, as well as a wide range of additional factors. Revenue management systems are critical, particularly for large properties with numerous outlets and departments. Moreover, the guest history is effectively an early CRM software which records data for past guests and other intermediaries, assisting the personalization of the hotel.

Interconnecting partner systems and extranets

Hotels develop partnerships with a number of intermediaries to expand their distribution network. Hotel chains have therefore established central reservation offices (CROs) with sales agents that have access to property management systems. CROs allow both individual customers and travel trade to make reservations over the phone or Internet sites whilst they facilitate networking with a number of electronic intermediaries allowing onward distribution. Interconnectivity and interoperability between hotel CRSs and GDSs was a major problem, as each hotel and GDS has its own communication protocols and functions. Two major switch companies emerged, namely WIZCOM and THISCO, to provide an interface between the various systems and eventually to allow a certain degree of transparency.

Although CROs and GDSs currently dominate hotel bookings, the Internet emerges as the prime medium for receiving travel bookings from a wide range of intermediaries. GDSs have been

problematic for hotel distribution as they allow only a fairly limited number of rates to be displayed. They abbreviate and truncate descriptions whilst they cannot display photographs, and take a lot of time to update data (O'Connor and Frew, 2000). Therefore, the Internet is much more suitable to promote hotel rooms and inventory whilst it provides the tools to increase revenue at a fraction of the traditional cost of booking. Interoperability of systems can support data and transaction exchanges to support hotels to expand their distribution network. Online bookings are showing dramatic growth and a number of online booking agencies and travel agencies, such as hotels.com, allthehotels.com, bookings.com, hrs.com, Travelocity, and Expedia, have been established as mainstream distribution. Internet hotel bookings are projected to rise dramatically in the near future and the hospitality distribution channel becomes more complex as most intermediaries establish links with other players in the marketplace.

Business-to-business (B2B) is also growing very fast. Marriott for example has begun to partner with large corporations to bring its website into their intranet's travel page creating a B2B environment and enhancing electronic collaboration. This enables corporations to benefit from special rates and added value benefits whilst it assists Marriott to increase its loyalty and profitability. The strength of the hotel brand and the fact that consumers have always relied on booking hotels directly, instead through intermediaries, are playing a critical role in developing B2B and B2C solutions in the marketplace. Effectively these systems are managed through extranets that facilitate interorganizational communication, allowing partners to share information and processes.

e-Procurement is also a successful application of extranets for the hospitality industry. Hotels are highly dependent on regular supplies of good quality and cost-efficient materials and ingredients. Eventually hotel e-procurement will integrate all aspects of the purchasing process electronically. As soon as the level of demand can be predicted from reservation levels and past data/experience, orders can be generated automatically, authorized by departmental heads, delivered and paid with little human involvement.

As a result, a number of B2B applications and companies emerged to serve this demand. For example, Avendra, a procurement company, was founded in early 2001 by Marriott International, Hyatt Hotels Corp., Club Corp., Six Continent Hotels and Resorts, and most recently Fairmont Hotels and Resorts. It is an independent company providing the largest, most comprehensive procurement network for the North American hospitality and related industries, with a market estimated at \$80 billion annually. Ultimately Avendra aims to integrate systems of sellers and buyers in the hospitality industry in order to automate the entire purchasing process. Therefore, e-procurement pledges to end the hurdles of an inefficient buying system through cost controls, fully automated order processing, and corporate power to require properties to be compliant with purchasing policies. Finally, extranets are often used for other business functions such as human resources management. They can be developed to communicate with recruitment partners, social security, insurance, and pension organization. Six Continents, for example, have outsourced part of their recruitment to HCareers and use a specialized section on their website for their recruitment (e.g. <http://sixcontinents.hcareers.com/jobs>).

Hotels and the Internet

The proliferation of the Internet in the late 1990s and the revolution of technologies have introduced a wide range of new marketing tools. The Internet allowed hotels to develop their own websites and to display straight and clear information and photos of amenities and locations, as well as to facilitate online bookings. A number of hotel chains, including ACCOR, Marriott, and Thistle, receive a significant percentage of their reservations through their own websites, free of commissions and other charges. Hotels can reduce their distribution costs significantly by expanding their e-commerce. For example, Marriott has been able to save US\$2 per Internet booking using its own booking engine instead of an outside source. Hilton saves US\$25 on each website booking (compared with a traditional

travel agency booking) whilst Hyatt's cost for an online booking is US\$3, compared with US\$9 to book via the call center. More importantly, hotels can integrate their Web presence with their customer relationship management function by offering visitors the ability to store their personal profiles assisting the provision of personalized products and added-value elements.

The Internet also assists hospitality organizations to develop their value chain and to enhance a wide range of their *business functions*. In addition to e-commerce, e-sales, e-marketing, and e-procurement, hotels increasingly use the Internet for e-finance and e-accounting. This empowers hotels to use information and data from operational processes in order to automate their back office functions. In addition, e-HRM enables them to recruit and manage all their human resources issues online. By using the Internet they can attract employees and explain their policies, training program, and promotion opportunities. Marriott, for example, provides comprehensive information for employees and allows them to submit their CV electronically for consideration.

e-Hospitality futures: challenges for the future of hospitality

The hospitality industry gradually realizes that the ICT revolution has changed best operational practices and paradigms, altering the competitiveness of all hospitality actors in the marketplace. Hospitality corporations integrate their back and front office in a framework that takes advantage of the capabilities of the Internet as well as of intranets and extranets. Convergence of all technological devices gradually empowers greater connectivity, speed, transparency, and information-sharing. As a result, hospitality organizations are gradually focusing more on knowledge-based competition and on the need for continuous innovation, forcing management to stay abreast of the dynamic developments in the marketplace (Connolly *et al.*, 2000). Hospitality organizations are also attempting to increase their online bookings by promoting their Internet presence more aggressively and by capitalizing on partnership and collaboration marketing. As a

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