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eTourism

Strategic and tactical impacts of information communication technologies for tourism

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Resumo

AS TICs provocam mudanças radicais na operacionalização, distribuição e estruturação da indústria do turismo. A proliferação da tecnologia ao longo dos canais de distribuição do turismo basicamente reflecte que, tanto os consumidores como os profissionais do sector, usam as recentes ferramentas disponíveis de modo a obter informação, identificar produtos apropriados e efectuar reservas. As TICs irão gradualmente determinar a capacidade dos diversos agentes intervenientes no sector do turismo em distribuir os seus produtos de forma eficiente e em comunicar interactivamente com os consumidores. As TICs podem beneficiar fortemente a eficiência, a diferenciação, a redução dos custos e dos tempos de resposta nas organizações do sector do turismo. Ao se negligenciar a importância das TICs na fase de distribuição, poder-se-á comprometer a competitividade dos agentes, que correm o risco de serem marginalizados.

Palavras-Chave

Turismo, tecnologia, competitividade, estratégia, sectores

Abstract

ICTs stimulate radical changes in the operation, distribution and structure of the tourism industry. The proliferation of technology throughout the tourism distribution channels essentially means that both consumers and professionals use the newly available tools in order to retrieve information, identify suitable products and perform reservations. ICTs will increasingly determine the ability of principles to distribute their product efficiently and to communicate interactively with their clientele. ICTs can introduce great benefits to the efficiency, differentiation, cost reduction and response time of tourism organisations. Should tourism principals neglect the significance of ICTs in their distribution function, they will effectively jeopardise their competitiveness and become marginalised.

Keywords

Tourism, technology, competitiveness, strategy, sectors.

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1 eTourism – demand and technology driven revolution

Information Communication Technologies (ICTs) provide a powerful tool that can bring great advantages in promoting and strengthening the tourism industry strategy and operations (Buhalis, 2002, 1998). Several ICT applications facilitate the management and marketing of tourism organisations. These systems use databases as well as software for inventory control and for strategic and tactical administration purposes. The Internet provides a window for organisations to the world and allows them to demonstrate their competencies widely. Increasingly Intranets and Extranets are used to offer user-friendly access to employees of organisations, as well as their authorised partners to use company data in order to perform their tasks. Knowledge management systems enable organisations to collect information about their functions and to build knowledge on approaches to resolve problems and emerging issues.

The Internet revolutionises flexibility in both consumer choice and service delivery processes. Increasingly customers become much more sophisticated and discerning. This is because they have experienced high levels of service and also because the standard of living has grown considerably. Tourists become demanding, requesting high quality products and value for their money and perhaps more importantly value for time. This reflects people's shortage of time, evident in Western societies. Having experienced several tourism products and destinations, experienced, sophisticated, demanding travellers rely heavily on electronic media to obtain information about destinations and experiences, as well as to be able to communicate their needs and wishes to suppliers rapidly.

The use of ICTs in the tourism industry is therefore driven by the development of both size and complexity of tourism demand. Every tourist is different, carrying a unique blend of experiences, motivations and desires. To an extent the new sophisticated traveller has emerged as a result of experience. Tourists from the major generating regions of the world have become frequent travellers, are linguistically and technologically skilled and can function in multicultural and demanding environments overseas. The rapid growth of both the volume and the quality requirements of contemporary travellers require powerful ICTs for the administration of the expanding traffic. Quantitative growth and qualitative trends of tourism demand therefore force industry members to adopt ICTs and to expand the volume and sophistication of their products. Hence, on one hand ICTs facilitate the expansion of the industry and the enlargement of the market, and on the other, the growing volume of demand require advanced ICTs for the management of tourism organisations

In addition to tourism demand propelling the penetration of ICTs in tourism, the supply side has also grown gradually to realise the transformation of the industry due to the emerging tools. This chapter concentrates on the use of ICTs in the private sector enterprises and elaborates on how ICTs can support the profitability and competitiveness of organisations. Few other industries require as much information and collaboration between actors for delivering their products as tourism and hence the emerging ICTs tools gradually provide a comprhensive infostructure for the development and fulfilment of tourism (Buhalis, 2002; O'Connor,1999; WTO,1988 and 2001).

2 eTourism and the tourism industry strategic and tactical functions

The tourism industry has traditionally been using ICTs in a number of key strategic and operational functions as summarised in Figure 1. However it is increasingly recognised that the use of ICTs in tourism is pervasive, as information is critical for both day-to-day operations and the strategic management of tourism organisations. ICTs therefore support all business functions and are critical for operating the industry as a whole.

In particular, the World Wide Web (WWW) enabled the interactivity and networking between computer users by using the Internet to facilitate instant access and distribution of tourism information (WTO, 1995; Smith and Jenner, 1998). Networking provided the infrastructure for both intra-and inter-organisational co-operation. As a result, the development of the Internet, as well as Intranets and Extranets in the 1990s, revolutionised the usage of ICTs in the tourism industry and enhanced tourism distribution to a global electronic marketplace. The vast majority of tourism providers developed Internet interfaces to communicate directly and efficiently with their clientele and partners. Combining loyalty clubs, guest histories and other information held in operation databases provided airlines and hotel chains powerful information, which enabled them to interact with their existing and pros-

Figure 1 – Key tourism strategic and operational functions empowered by ICTs

Key strategic functions	Key operational functions
> Enhance organisational efficiency and effectiveness	> Information distribution and reservation process
> Improve quality of services	> International tourism management and marketing,
> Undertake strategic research for new markets and products	> Facilitation of producer intermediary-consumer interaction
> Follow up competition	> Production and delivery of tourism products
> Penetrate existing and new markets and expand market share	> Organisation, management, control of tourism enterprises
> Diversify to new products and services or new markets	> Front office: reservations, check-in, billing, communicating
> formulate new combinations of tourist products	> Back office: accounting, payroll, procurement, administration
> Differentiate and personalise products and add value at all stages	> Customer entertainment and service
> Reduce cost and achieve cost competitive advantage by creating value for money	> Communicate with consumers and partners
> Achieve time competitive advantage by maximising efficiency for consumers and creating value for time	> React to unexpected events and adopt flexibility and reflective procedures
> Reengineer business processes and rationalise operations	> Dynamic yield management and adjust price and capacity
> Constantly reinvent new and innovative business practices	> Monitor performance and build in feedback mechanisms
> Outperform competition in the long run	> Control and administration
> Develop partnerships and explore virtual corporations	

Source: Buhalis, 2002

pective clientele through sophisticated Customer Relationship Management (CRM) systems. This could only be achieved through using ICTs effectively for co-ordinating and maximising the efficiency of tourism organisations. ICTs are gradually therefore placed centrally as one of the most critical factors for both the operational and strategic management of the tourism industry.

ICTs have undoubtedly become one of the most important elements of the tourism industry as in few other economic activities are the generation, gathering, processing, application and communication of information as important for day-to-day operations. The rapid development of both tourism supply and demand makes ICTs an imperative partner of the industry, especially for the marketing, distribution, promotion and co-ordination of the industry. The re-engineering of these processes is particularly evident in the tourism product distribution, where a paradigm-shift is conspicuously experienced altering best practices and introducing new players (Buhalis,1998; Poon,1993; Sheldon,1994 and 1997). As information is the life-blood of the travel industry, effective use of technology is fundamental, "a whole system of ICTs is being rapidly diffused throughout the tourism industry and no player will escape its impacts" (Poon,1993).

3 eTourism impacts on the marketing mix

ICTs gradually propels the redesign of the *marketing mix of tourism enterprises* by providing new tools. ICTs provide unique opportunities for innovative organisations to redesign tourism *products* to address individual needs and to satisfy consumer wants. Not only organisations can have a better understanding of their consumer by mining their data warehouses, but they can also pilot new products effectively by using different communication strategies. ICTs also become part of the core product especially for business travellers who expect a certain degree of facilities available during their trip.

The Internet and the World Wide Web in particular revolutionised the *promotion and communication* functions of tourism. They empowered personal marketing campaigns and one-to-one marketing. Instead of addressing broad audiences through mass media, such as Television and Radio, tourism organisations are empowered to develop personal relationships with their customers, to understand their needs and to make sure that they address them through personal communications. The new methods offer a much more cost-effective approach, whilst at the same time they can improve customer satisfaction by offering tailor made packages of suitable products. In addition, the *place-distribution* func-

tions changed dramatically as the ICTs reengineered the entire channel of tourism. Principals can reduce their commission costs as well as improve their relationship marketing. As a result, a wide spread disintermediation is experienced in the tourism distribution channel, as consumers increasingly bundle their itineraries alone. However new tools enable a wide range of new players, such as Expedia or eBookers, to emerge and to gain a significant market share propeling a reintermediation in the distribution channel (Buhalis and Licata, 2002).

Tourism organisations need to react to demand variations in order to maximise their profitability. By providing critical tools, ICTs allowed tourism organisations to forecast and alter pricing almost instantly. *Pricing*, therefore, becomes a much more dynamic function with better-informed managers and developed yield management systems. Auctions and the new practice of customers suggesting the prices that they would be willing to pay in order to purchase the product (e.g. Priceline.com) will enable tourism enterprises to reduce their distressed capacity as well as to save commissions to intermediaries. Market intelligence also enables organisations to identify pricing strategies of competing organisations and respond with more flexible and dynamic fares.

The rapid increase of the reliability, speed and capacity of ICTs, in combination with the deduction of their cost, gradually force tourism organisations to adapt and use these new tools. Innovative tourism organisations take advantage of the new tools to enhance their value added and to gain competitive advantages. New players are increasingly attracted to take advantage of the electronic marketplace emerging and to serve the new wired customer. Location becomes much less significant in transactions and therefore global competition intensifies. ICTs have also reduced the cost of operations by decreasing the number of people required for back office jobs. Some of these resources can be re-directed to consumer care and contact. However a large proportion of tourism organisations has been observing these trends passively and have failed to address the requirements of the marketplace. These organisations increasingly lose market share and eventually will be forced out of the market as they will be unable to compete with the value added and interaction benefits offered in the new global market. The following paragraphs synthesise the developments in ICTs' utilisation for strategic and tactical management during the last decade for key tourism sectors and also illustrate some indications for the future directions of the industry.

4 eAirlines

Airlines have been investing heavily on ICTs since the early stages of their development. They realised the need for efficient, quick, inexpensive and accurate handling of their inventory and communicating with travel agencies and other distributors. Originally, in the 1950s, reservations were made on manual display boards where passengers were listed. Travel agencies had to locate the best routes and fares for their customers in a manual and then to phone for availability, reservation and confirmation before issuing a ticket manually. In 1962, American Airlines introduced its SABRE Computer Reservation System (CRS) (Feldman,1987; Hopper,1990; Boberg and Collison,1985). The growth of air traffic as well as the USA air transportation deregulation in the 1970s enabled airlines to change their routes and fares as frequently as desired. This generated a great demand for flexibility as well as internal and external communications. As a result, it stimulated the introduction of the first CRS, which expanded rapidly to gigantic computerised networks. CRSs allowed airlines to compete fiercely by adapting their schedule and fares to demand. The sophistication of CRSs expanded in order to distribute up to date information to all potential customers world-wide and to support the operation and administration of airlines. This development also resulted in the development of CRSs to marketing and distribution systems, as they contributed significantly to the competitiveness of vendor/host airlines. (Truitt, Teye and Farris,1991; Copeland,1991; Copeland and McKenney,1988; Wardell,1987a).

Global Distribution Systems (GDSs) emerged in the mid-1980s offering a wide range of tourism products and providing the backbone mechanism for communication between principals and travel agencies. The development of CRSs to GDSs, with the integration of comprehensive tourism services provided a range of value added services. GDSs effectively became travel supermarkets offering information and reservation capabilities for the entire range of travel products, including accommodation, car rentals, schedules for non-air transportation, etc. GDSs are in the heart of scheduled airline operational and strategic agendas as they control and distribute the vast majority of the airline seats. Four major GDSs, namely SABRE, Worldspan, Amadeus and Galileo, currently compete fiercely for recruiting travel agencies and for penetrating the marketplace (Kärcher, 1996). GDSs emerge as main technology suppliers for a wide range of tourism organisations, reinventing yet again their strategic objectives and aiming at developing solutions that will enable

them to provide the infostructure for distributing products through the Internet.

On the operational side, ICTs are critical for managing the inventory of carriers by assisting their reservations management and ticketing. Increasingly eticketing instigates paperless transactions, while offering significant savings. Tactical pricing, yield management and special offers & promotions are all facilitated by constantly assessing demand and supply and by taking both proactive and reactive measures. There are several operational management, requirements including check-in procedures, allocation of seats, generating a number of reports and orders, such as flight paths, weather forecasts, load and balance calculations, manifests for airports, in-flight catering orders and crew rotas. ICTs also facilitate eProcurement and management of suppliers and partners on a regular basis maximising efficiency. In addition, as airlines have bases and distributors globally and particularly at destinations they serve, they need efficient coordination and communications with stations, branches distributors and customers globally. Interaction with distributors, travel agencies and other distributors can determine levels of sales whilst efficient invoicing and revenue collection will be critical for both cash flow and profitability. Finally, airlines have been investing into Customer Relationship Management programmes in order to manage their loyalty clubs.

The development of the World Wide Web (WWW) assisted airlines to launch another communication and purchasing channel in order to reduce the power and costs of conventional intermediaries. By 1998 most airlines already offered Web sites, which not only informed consumers but also supported itinerary building, fare construction and reservations. Hitherto, it is reported that there are still far many "lookers" but few "bookers" on the Internet. Airlines Internet sites attract consumers directly and assist by passing travel agencies and their commissions. It is estimated that in 2001 on-line bookings contributed for less than 5% of the total bookings globally. However, innovative carriers take advantage and sell a great percentage of their seats on-line. British Airways' Internet site (www.britishairways.com) achieved 1.5m visits per month, whilst the average growth of on-line bookings was 11% per month. The figures often quoted for American carriers are significantly greater, as a result of the penetration of the Internet. Easyjet was advertised as the Web's favourite airline and achieved more than 90% of its bookings online by 2002. As a result of the Internet representation of airlines and their ability to *communicate directly with consumers* several structural changes in the industry emerged. Airlines initially in the USA, and increasingly globally, reduced their commission rates significantly, whilst they also introduced a "commission capping".

ICTs are also instrumental for the globalisation of the airlines industry experienced. The global alliances, such as the "One World", "Qualiflyer", "Star Alliances" and others, are only possible because of the co-ordination that can be achieved through harmonised ICT systems or through effective interfaces. In effect consumers receive a seamless service, collect frequent flyer miles and enjoy privileges from different carriers in all continents simply because ICTs provide the "infostructure" for close collaboration. Hence, ICTs will not only formulate all elements of the marketing mix of airlines in the future, but they will also determine their strategic directions, partnerships and ownership. The launch of internet portals such as Orbitz and Opodo by competing airlines demonstrates clearly that airlines appreciate the need to co-operate with competitors (co-opete). They develop links through alliances, industry bodies such as IATA and SITA, to develop common platforms for eCommerce, eProcurement and for facilitating all their strategic and operational functions.

5 eHospitality

The lodging industry is the most under-automated segment of the international travel industry. *Property Management Systems (PMSs)* were introduced to facilitate the front office, sales, planning and operation functions. This was achieved by administrating a database with all reservations, rates, occupancy and cancellations, and thus, managing the hotel inventory. Most reservations are still rooted directly to hotel properties or through Central Reservation Offices often by subsidised toll free phones, while the percentage of bookings emerging from GDSs and the Internet are still fairly limited. Expensive technology and large amounts of time are top on the list of challenges holding up the process. This is partly due to the difficulty the industry experiences to describe, standardise and manage rationally the hospitality product electronically and to communicate the entire range of information required for consumers to make a transaction on-line. Nevertheless in the last decade, hotels also capitalised on the newly available ICTs tools. Hospitality organisations increasingly use computerised systems in order to improve their inventory management, communicate with their clientele and maximise

their profitability. The Internet has allowed them to increase their interactivity with consumers and reduce some of their operational costs. Larger hotels introduced systems to manage their inventory. (O'Connor and Horan, 1999; Peackock, 1995; O'Connor, and Frew, 2000).

ICTs penetrate hospitality management 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. In addition, consumers increasingly expect ICTs facilities in their rooms, and thus, Internet access from the television set as well as data ports become standard for higher hotel categories. The Internet has improved the hotel representation and reservation processes dramatically. A wide range of distribution and reservation mechanisms is offered on-line proving reliable and adequate service as well as instant confirmations to both consumers and the travel trade. Hotels are able to develop their own presence and to collaborate with distributors in order to present multimedia information on their properties, facilities and services. They can also provide online reservations and interaction with consumers and partners. Booking through the Web is particularly convenient for customers who frequent the hotel as that provides an efficient and effective communication mechanism. The higher the number of capacity, departments, transactions, arrivals, departures as well as reservations of properties, the higher the need for technologies to facilitate these processes. Equally the more the number of properties in a hotel chain/company, the more the sophisticated technology required to manage and control all remote properties (Buhalis, 1999; Buhalis and Main, 1998).

Hotel chains wide systems also supported groups of hotels to coordinate their activities and maximise their collective performance. Understandably, hotel chains and in particular the multinational ones, gained more benefits from PMSs, as they introduced a unified system for planning, budgeting and control for all their properties. PMSs integrated "back-office" operations and improved the general administration, as well as specific functions such as accounting; marketing research and planning; yield management; payroll; personnel management; and purchasing at individual properties.

Hotel CRSs were developed in the 1990s to connect hotels electronically with GDSs (Emmer *et al*, 1993). That supported the availability and rates of rooms to be displayed globally. Being able to confirm reservations on-line and within few seconds was critical for the integration of hotels in the GDSs. In addition, it offered the opportunity to introduce more personalised service and relationship marketing, as agents had access to guest histories and could recover information for individual customers and agencies. Further integration between PMSs and hotel CRSs can improve efficiency, facilitate control, reduce personnel and minimise the response time to both customers and management requests.

6 eTour operators

Tour Operators need to constantly interact with the all their partners, including accommodation and transportation principles, travel agencies and consumers. Coordinating the movement of large numbers of travellers, often in many different countries and continents simultaneously, represents a major operational management challenge and ICTs are critical for their operations. ICTs are also critical for the distribution of Tour Operators' packages. Traditionally tour operators distribute their products by displaying brochures of their packages in travel agencies. A pre-printed form is normally provided to be completed by travel agencies, in order to request a holiday from a tour operator (Wanhill, 1998). Hitherto, travel agencies search Tour Operators' databases and make through videotext booking systems.

The domination of the *Videotext systems* in the UK leisure travel means that many Tour Operators still support low technology viewdata traffic. Despite attempts by key network providers to upgrade videotext to computer systems, communicating through their Internet protocol by developing their Web-style travel trade portals (e.g. Telewest's is Endeavour and X-TANT's Traveleye), a large percentage of retail travel agencies as well as tour operators has failed to upgrade their systems. These portals can combine a real-time booking capability with the "added value" of useful information, whilst migrating to Internet Protocol (IP) solutions will enable the systems to increase speed and make far more efficient use of the networks. However, the initial investment has been acting as a major deterrent for many organisations. Tour operators have also feared that if they upgrade their systems they will be unable to communicate with travel agencies who will not have IP technology, and thus, they will be jeopardising bookings (Kärcher, 1997; Inkpen, 1998,).

The introduction of the Internet as well as Intranets and Extranets as strategic tools has a number of critical benefits for Tour Operators. Coordination and exchange of timely information is critical for them

being able to coordinate activities, ensure that customer requirements are communicated to all principals delivering the tourism product and for resolving potential problems. Strategically ICTs also play a critical role for Tour Operators. Vertically integrated travel organisations, which own both travel agency and tour operator businesses, often use information from retailers for market intelligence to base strategic decisions, such as mergers and acquisitions as well as hostile takeovers of retail units.

In addition, being able to *interact closely with consumers*, Tour Operators have the opportunity to understand the needs of their clients better, to alter elements of the marketing mix according to the market conditions and to improve the level of flexibility they offer. Kuoni for example allows consumers to alter their tourism package online and to build their own itinerary by making it possible to extend the trip, change accommodation, meal plans and add value added services such car rentals, scuba diving lessons, etc. By enabling consumers to search by the brochure reference, Kuoni also strengthens its offline and online marketing drive. Often consumers are willing to pay premiums for customised products and to provide a greater degree of flexibility and tour operators who will facilitate this process will gain considerable benefits.

Tour Operators are threatened with disintermediation, as the Internet enables consumers and travel agencies to build their own personalised packages and to purchased them online. However, it is quite evident that tour operators will need to shift their focus from the information provision and the reservation mechanism to a more strategic role of adding value to the product and the process. Tour Operators, therefore, will need to reassess their core values and identify specific market segment they would be able to satisfy in the future.

7 eTravel agencies

Retail travel agencies essentially are intermediaries who serve as sales outlets for tourism principals and wholesalers. As such, they do not own the services and can not stock travel products. Instead, they only stock travel information in the form of brochures, leaflets and data as well as use the personal expertise of travel consultants. Consequently, agencies carry limited financial risk, as they do not purchase tourism products in advance. They only reserve/confirm/purchase/issue travel documents, i.e. tickets, vouchers, only upon request from customers. ICTs provide a wide range of *tools for travel agencies*, by providing the mechanism for information exchange and tourism product distribution. ICTs have enabled agencies to build complicated travel itineraries in minutes, while they provided up-to-date schedules, prices and availability data. The proliferation of CRSs and GDSs also provided an effective reservation mechanism which supports travel agencies to get information, make reservations and issue travel documents for the entire range of tourism products efficiently and at a fraction of the time required if these processes were made manually. Therefore travel agencies use ICTs to access tourism suppliers' databases, to verify availability and rates, and to confirm reservations (Sheldon,1997; Inkpen,1998).

ICTs introduced major improvements in the internal organisation of travel agencies and integrated their "back office" (e.g. accounting, commission monitor, personnel) and "front office" (e.g. customers' history, itinerary development, ticketing and communication with suppliers) travel agencies have achieved significant synergies, efficiencies and cost savings. Multiple travel agencies in particular experience more benefits by facilitating branch control by their headquarters. As transactions made in branches can automatically be reported back to the head office, a tighter financial control can be performed. In addition, transactions provide invaluable marketing research data, which can almost instantly report market movements and ameliorate tactical decisions. At the individual level Customer Relationship Management systems support agencies tracking the activity of their clients and allow them to provide a customised service. This can strengthen their efficiency and control, whilst empowering them to strengthen their competitiveness. Storing information in data warehouses can also assist them to develop pro-active marketing tools in order to target individual customers with specialised products. This can support them to increase the value added services offered to each customer and also to defend themselves against disintermediation.

However, ICTs and the Internet introduce some key challenges. Availability of information through a wide range of media as well as price and product transparency through the Internet means that agencies need to work harder to earn the respect of their clients. As consumers become more experienced, they gradually require more specialised information and demand that their travel agency will be able to provide that. The level of Internet usage in travel agencies is still minimal. Moreover, traditional travel agencies need to compete with several *ICT-based newcomers*, such as Expedia, Travelocity and Lastminute.com, which allow consumers to have access

to information and make on-line bookings (Buhalis, 1998; Wardell, 1998). Choosing the right technological platform and suppliers as well as integrating the internet provision with legacy systems can also be tricky for uninitiated travel agencies. It increasingly becomes evident therefore that only few innovative agencies have developed platforms for communications with suppliers and customers. The majority of the agencies however jeopardises their competitiveness by ignoring many of these developments and by failing to prepare for the new industry challenges.

8 eDestinations

In several cases, Destination Management Systems (DMSs) have been used for integrating the entire supply at the destination. Their contribution to strategic management and marketing is demonstrated by their ability to integrate all stakeholders at destinations and also to reach a global market at a fairly affordable cost. A number of DMSs gradually emerge for all destinations around the world, offering online information and in some cases facilitating reservations. Increasingly, DMOs provide innovative information that allow people to plan their itinerary and develop their individualised package on line or purchase commercial packages from tour operators. eCommerce also emerges, with a number of DMSs moving to fully functional web sites that can support the entire range of customer purchasing requirements. Tiscover in Austria and Gulliver in Ireland have been leading these developments and gradually other destinations including Holland and Jersey follow their example. In addition, many destinations assist travellers to develop their itinerary on-line. Australia.com, offers a number of pre-set itineraries for its main tourist regions, whilst Singapore offers a comprehensive tour planner based on the dates of the tour and the key interests of the holidaymaker. Often micro-sites are developed for specific events or for special interest tourism. Australia managed all the information about the 2000 Olympic Games on-line, taking the opportunity to involve prospective tourists with the Australian brand and product. DMSs usually include a Product Database, a Customer Database and a mechanism to connect the two. More advanced systems tend to include a number of the additional services and features (Buhalis, 1997; Sheldon, 1993; Pollock,1998; WTO, 2001):

- Information search-by category, geography, keyword
- Itinerary planning for customer
- Reservations
- Customer/contact database management
- Customer relationship management functions
- Market research and analysis
- Image library and PR material for press
- Publishing to electronic and traditional channels
- Event planning and management
- Marketing optimisation and yield management
- Data editing and management
- Financial management
- Management information systems and performance evaluation
- Economic impact analysis
- Access to third party sources, such as weather, transport timetables and travel planning, theatre and event ticket reservations.

The DMS concept can be taken a step forward to formulate a more comprehensive and substantial system, which can revolutionise all aspects of destination management as well as integrate all tourism actors at the local level. Destination Integrated Computerised Information Reservation Management Systems (DICIRMSs) address the entire range of needs and services required by both tourism enterprises and consumers for specific destinations. In its conception a DICIRMS is an advanced DMS, digitising the entire tourism industry and integrating all aspects of its value chain. DICIRMSs provide the infostructure for communications and business processes between all stakeholders, including consumers, principals, distributors and DMOs. Although a variety of the elements proposed for these systems already exists in some DMSs, there is currently no operational DMS offering such a comprehensive and integrated service to its users (Buhalis, 1997).

DICIRMSs should be accessible to all prospective visitors, business partners and travel intermediaries on all technological platforms. At the destination area, local and wide area networks can facilitate inter-connectivity among all tourism suppliers. Intelligent self-service kiosks with interactive multimedia capabilities can also assist visitors who arrive at destinations to identify and purchase suitable tourism products. In addition, links to Internet portals CRSs and Global Distribution Systems, and videotex networks can support the distribution network of the system (Buhalis, 1993, 1994, 1997).

The low cost involved for distributing information through the Web, in combination with its pace of development and usage by consumers demonstrate that this media will be pivotal in developing and distributing DICIRMSs. The global acceptance of both the interface and programming language in the Internet, in combina-

tion with its open, interconnected operational environment, also provides a certain degree of homogeneity and compatibility between DICIRMSs representing different regions, enabling users to browse through similar type of information for alternative destinations. This, in fact, is one of the prerequisites expressed by the travel trade in order to utilise DICIRMSs. These systems, therefore, emerge as essential tools for both tourism demand and supply, as they establish a flexible and profitable communication bridge and a strategic management tool. They effectively provide the infostructure at the destination level and can network the entire range of principals and operators on a neural network.

9 eTourism Conclusions and factors for success

ICTs empower tourism marketing and management as they provide cost effective tools for organisations and destinations to target appropriate market segments and to develop strategic tools. They also support the interactivity between tourism enterprises and consumers, and as a result, they re-engineer the entire process of developing, managing and marketing tourism products and destinations. ICTs can introduce great benefits to the efficiency, differentiation, cost reduction and response time of tourism organisations. Consequently, ICTs stimulate radical changes in the operation, distribution and structure of the tourism industry. The proliferation of technology throughout the tourism distribution channels essentially means that both consumers and professionals use the newly available tools in order to retrieve information, identify suitable products and perform reservations. Thus, the visibility of tourism principals in the marketplace will be a function of the technologies and networks utilised to interact with their individual and institutional customers. This will, therefore, determine their ability to distribute their product efficiently and to communicate interactively with their clientele. Should tourism principals neglect the significance of ICTs in their distribution function, they will effectively jeopardise their competitiveness and become marginalised. Hence, tourism enterprises need to understand, incorporate and utilise ICTs, in order to be able to serve their target markets, improve their efficiency, maximise profitability, enhance services and maintain long-term prosperity for both themselves and destinations. ICTs have a great influence on the strategic management of contemporary organisations, as a paradigm-shift is experienced, transforming the "best" business practices.

However it should be recognised that ICTs are not a panacea and require a restructure of several management practices in order to ensure that organisations can achieve their strategic objectives. Therefore, a thorough and realistic audit of the ICT capabilities and requirements as well as a cost and benefit analyses are required by all tourism organisations. This will help them to appreciate their position and to design the most appropriate action in order to enhance their competitiveness. Certain prerequisites are applicable for achieving success. Long-term planning and strategy as well as top management commitment will need to ensure that ICTs are dealt as part of the strategic planning and management of tourism enterprises. This will enable them to capitalise the ICTs generated paradigm-shift in the tourism industry, which transforms the best business practices and redefines the role and the competitiveness of all tourism enterprises and destinations.

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