INFORMATION SYSTEMS AND TOURISM MARKETING:
NEW CHALLENGES FOR TOURISM BUSINESS SECTOR IN EGYPT

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Marketing Information Systems are an essential means for effective tourism marketing and improving quality of services of tourism organizations. This research provides insights into a successful implementation of a marketing information system in tourism. It discusses the importance of information system applications and information needs in tourism management applied to the tourism business sector in Egypt. The main results of this article are that most of the Egyptian tourism business sector enterprises have yet to develop their online presence. Most tourism organizations that have online presence do not have marketing information applications or tourism marketing services in place to support online marketing and transactions. To improve the situation, tourism business sector companies in Egypt need to develop information technology-based marketing strategies in order to take full advantage of information system applications. The Egyptian government should employ its own control to modify the regulations in order to help tourism business sector enterprises to adopt information system technologies in an effective manner.

Key words: Information; Systems; Marketing; Channels; Technology; Egypt

Introduction

Whatever the activities of a community or business are, they communicate something about the community or business with their clients. Consumers receive this information through many different sources, or channels, and these channels combine to form information systems that are always functioning, regardless of whether they are managed or not. It is very important to know how to manage information systems to make them work for the benefit of a business. An information system consists of all of the ways that people communicate with others and these systems are composed of information channels, which may be formal or informal, personal or impersonal, and public or private. Information channels are used in different ways and combinations by different people, businesses, and communities (De & Mathew, 1999).

A tourism information system is a specific type of information system. It consists of all the information channels used in a business or community to promote itself as a tourism attraction. These information channels include commercials, ads, bro-
chures, repeat visitors, employees, friends, and relatives. The importance of information and efficient information management is steadily increasing due to not only the evolution of new technologies and high-capacity storage media but also to the growing market dynamics that raise information needs. A marketing decision support system (MDSS) can be of particular importance as it supports organizations in collecting, storing, processing, and disseminating information, and in the decision-making process by providing forecasts and decision models (Dellaert, 1999). This article provides insights into a successful implementation of a marketing information system in tourism. It discusses the importance of information system applications and information needs in tourism management applied to tourism business sector in Egypt.

Characteristics of Tourism Information Systems

A tourism information system is made up of different related and interdependent information channels. Examples of these channels include state promotional messages, regional tourist associations, travel information centers, individual business promotions, employee knowledge, brochures and signs, other travelers, repeat visitors, and the community’s visual image (appearance), including storefronts, billboards, hospitality, community awareness, and pride (Wöber & Gretzel, 2000). Though this list is not exhaustive, it gives some idea about what can be used as channels.

There are three characteristics that all effective tourism information systems have:

1. Each channel in the system has its own function. Travelers use different channels to get different kinds of information. An example is deciding where to go on vacation. A person may consult a friend or a family member for that decision; but in deciding what to do when he/she gets there, the person may talk with a repeat visitor or employee at the destination site.

2. All the information channels used in the system relate to each other. A tourism information system is like a novel because it has many different parts tied together by the theme. Even though the system’s channels serve different functions in providing information, they are all tied together by the projected message.

3. All channels used in the system are interdependent. A tourism information system functions like a puzzle. The different pieces of the system, the channels, are used to communicate with tourists. If any of the puzzle pieces are missing, the puzzle’s picture is incomplete. If one or more of the channels used is not disseminating information effectively, or if the information dispersed does not relate to the rest of the system, then the system will not effectively communicate its whole message. If one or more of these characteristics is missing from a tourism information system, then its message will be inconsistent and ineffective (Ellsworth & Ellsworth, 1996; Helnen, 1996).

Information Systems and Tourism Marketing

There is no doubt that technology has produced transformation in all aspects of daily life and tourism is no exception, especially tourism marketing. Although marketing is not new in its basic elements, and managers have always had to manage the variables of product, price, place, and promotion, they have to do so with understanding of both customers and markets.

In the past, tourism managers had less knowledge of marketing as a systematic form of analysis, planning, and control, versus the present-day managers who have vastly inferior information systems on which they base their decisions and marketing research techniques supported by information technology (IT) systems (Seaton & Bennett, 1996).

The information and communication technology (ICT) menu in tourism marketing has five main segments. All of them make possible the more effective and cost-efficient use of marketing techniques in travel and tourism. All of them influence the competitive position of the businesses. These segments are: the Internet as an information exchange system (CRS and GDS), Destination Marketing Systems (DMS), Marketing Decision Support System (MDSS), and E-commerce and tourism marketing.

The Internet as an Information Exchange System

The Internet operates as a global marketplace accessible to the general public 24 hours a day, 7
days a week. It is a marketplace based entirely on information provision and exchange transactions. The most important use of the Internet is related to the exchange transactions (marketing) between businesses that are purchasing and others who are supplying (Middleton & Clarke, 2001).

The Internet has increasingly become a popular medium for marketing and ideally for marketing tourism. It allows everyone to access the network. The potential of using the Internet for marketing activities is derived from its general use as an information exchange system in the digital age. The information can be stored, indexed, retrieved, re-structured, and redistributed automatically by software and without human intervention. The Internet connects companies with other companies, companies with customers, and people with other people without regard to time, space and hardware/software platforms (World Trade Organization, 2001). Figure 1 shows the role of the Internet as an information exchange system.

The Internet as a marketing media can be of great benefit to virtually all areas of marketing, from marketing research, through market segmentation, targeting and positioning, to the effective use of the marketing mix, and marketing organization and control. The following discussion does not attempt to provide an exhaustive list of the Internet’s use in tourism; rather, it simply intends to exemplify its common applications in and main implications for tourism marketing (Liu, 2000).

The Internet does more than automating online business transaction. It can be “informant” in that it provides a vast amount of information that was previously unavailable. Marketing is essentially an information-processing activity that links an organization to the external environment in which it operates. The Internet is an invaluable source of low-cost but up-to-date marketing intelligence that can be sourced through a company’s own site (for details of its customers) and other websites (for information on competition situations, market conditions, and the general environment). The Internet is extremely useful in building a customer information database. With the use of proper software such as Aurum Software’s Web-Track (and even with simple means like cookies, web forms, and email feedback), it is easy to gather systematic data about all users who visited the company’s website. This information can be used to identify prospects, understand customer needs, and customize resources to give greater levels of service to customers. A database of online transaction histories can be the primary marketing resource of tourism companies, determining what kind of travel products they can deliver, what market segments they serve best, and what is the life time value of each customer to the firm (Holloway & Robinson, 1995).

By searching other websites, a company can get valuable information about market demand, supply, competition, and economic, demographic,
legislation, and technological changes in the domestic and international markets. Websites of government agencies, media companies, and nonprofit organizations usually provide large amount of information free on general issues, while commercial sites are good sources of information on new technologies, best business practices, and industry initiatives. Scanning competitors’ home pages help companies to track competitors’ marketing strategies and tactics (Kiani, 1998).

Market Targeting

An important feature of the Web as a medium is that it is the consumer who is actively searching for information about products or brands in which he/she is interested. In effect, the consumer is “prescreened” and shows both interest and involvement in visiting the website. While on the Web, the consumer can also provide instantaneous feedback to the marketer. All the feedback, and indeed, every “click” or “hit” the user makes, can be memorized by the web server. Through the application of the IT data mining technique, companies can find patterns within their internal customer data and make sense of data or turn data into meaningful marketing information. For instance, the visitation record of an online brochure may show the total number of hits, the distribution of the hits among the pages and across time, and the order of the pages been accessed. The user’s visitation data can be easily combined with user profile information from user registrations through online visit cards or questionnaires and used to uncover the consumers’ interest and the patterns of demand and buying behavior. This in turn leads to the identification of likely target segments, often niches based on specific benefit sought. Armed with such information, organizations can refine their targets and develop specific means to achieve true one-to-one marketing (Kiani, 1998; Liu, 2000).

The appropriate use of user profile and surfing behavior data can improve the effectiveness and efficiency of market segmentation and targeting. This is because the traditional approach to market segmentation is often based simplistically on geographical, demographic, and economic variables while the psychological, behavioral, or lifestyle data are costly to collect and difficult to measure and compare. In Internet marketing, it is easier to collect these data from potentially each and every user of the company website, though tangible rewards such as free prize draws and free membership are often needed to attract users to fill in web forms (Liu & Jones, 1995).

Product

Tourists can provide individual preferences for, or specifications of, holiday packages through feedback in the form of web forms, email messages or simply the “clicking” patterns, which the tourism marketer can use to develop new products or tailor-made existing products to suit the needs of particular consumer(s). In this sense, the Internet has accelerated a shift in the nature of products from mass produced and tangible to customized and information-based.

The self-servicing tourist can not only conduct transactions online and reduce costs of sales for the supplier but also actively participate in the production process itself. Provided with choices, a tourist can now assemble his own product according to the specifications desired. This is especially useful in the production and marketing of package holidays. Tour operators, for example, can offer modular products or services, such as flights, rooms, tours, car hire, and performances on their websites, and allow the user to participate in the development of the specific holiday packages using a menu of options (i.e., “pick and mix” his own package) (De & Mathew, 1999). As tour operators negotiate with the providers of these separate holiday items and buy in bulk, the economies of scale will enable the operators to offer lower “parts” prices to individual consumers than when they buy directly from the different producers of the travel products. In the meantime, because the booking engine is integrated with the product inventory, it is easy for the operator to adjust in real time the prices of different holiday components in response to their relative popularity and demand patterns. In this way, tour operators can effectively provide the market with low-cost and flexible, rather than the conventionally rigid, package tours. This is what both marketers and consumers have long dreamed of: high-quality products made individually at a unit cost level of mass production, all
enabled by the power of the Internet (Liu & Jones, 1995).

Internet technologies can also contribute to the improvement of current products on offer or development of new products and services that redefine the company’s strategic position. The Internet also gives tourist attractions such as museums and galleries wider format options for electronic presentation and show web collections that are physically impossible to construct (De & Mathew, 1999).

Price

The role of the Internet in pricing is based on its ability to process and exchange large amounts of data instantaneously with a great number of people. This information processing capacity enables a company to analyze relevant pricing data effectively and quickly. The information exchange capacity enables firms to set and change prices in real time and also facilitates online bidding and flexible pricing. Both of these qualities of the Internet are extremely useful in tourism marketing (Marcussen, 1999).

In Internet marketing, the potential for price discrimination is diminished, giving the enhanced capability of consumers to identify the least expensive source, regardless of supplier or location. The skilled consumer could have the “perfect knowledge” of market prices, which could facilitate the realization of “perfection competition” at the national and global markets. This will lead to the increasing standardization of prices across companies or even borders, especially for the undifferentiated products such as airline seats, beach holidays, and city breaks. Other applications of pricing on the Web including bidding and flexible pricing, and many Web-based businesses allow customers to bid for products on their sites. Customers commit to the sale if the price is agreed on. The bidding locks in customers to the sale and the committed price. This is a flexible pricing strategy where the buying capacity of the customer is reflected in the eventual price. Airlines could sell seats on over-demanded flights or routes through online bidding to the highest bidders to generate extra revenue. Tour operators may use online bidding in a different manner to market special holidays the demand for which may be extremely difficult to estimate in advance (Maler, 1997).

Place

The uniqueness of the Internet as a means of distribution is based on the fact that it exists in “cyberspace”; thus, physical phenomena such as location and distance are less significant or even irrelevant. For the producer, the Web enables it to have direct links with consumers at a low cost and therefore provides it with the opportunity of “dis-intermediation.” For the retailer, the Web threatens its livelihood and changes its critical success factor from location to access. For the wholesaler, Web-based business means that it can bypass retailers while at the same time risk is being bypassed by the producers (Marcussen, 1999).

The foremost role of the Web in tourism distribution is the direct electronic transactions between tourism product supplier and consumers. Direct marketing is offering both consumers and marketers greater control and lower potential costs of access due to the convenience of the Internet. Because direct channels may be producer direct or intermediary direct, the potential for channel conflict will be magnified.

Promotion

Arguably, the component of the marketing mix being most quickly transformed as a result of Internet use is promotion. The Internet provides a labor-efficient and cost-effective way of distributing information almost instantaneously to millions of potential clients in the global markets. Internet promotion combines mass media’s reach with the personalization inherent in two-way dialogue—previously only possible in personal selling. It can be used for corporate visibility, brand name recognition, advertising, public relations, corporate sponsorship, direct sales, sales promotion, customer support, and technical assistance (Marcussen, 1999).

The Web enables more information to be transmitted to (potentially) more people cheaply, instantly, and with a multimedia effect. The key to achieving these benefits is a well-designed and maintained website that is attractive, informative, and interactive. Through its multimedia capability, a good website can and should incorporate information as accurate and detailed as brochures or timetables, photos, and graphs as glossy as magazine advertisements, and videos as entertaining as
TV commercials. The site can supply as much promotional information as possible as there is virtually no capacity constraint or advertising space limit on the Web. By hyperlinking pages together in an appropriate fashion, the Web marketer can create an ultracomprehensive brochure to include everything a user wishes to know. For instance, a tourism destination website may become an “information mall” that provides the users with all the basic information about it such as the exchange rates, local traditions, weather, what to buy, etc., and, through the hyperlinks to the sites of tourism firms, details of flight schedules, tour prices, park opening times, late offers, and so on. A company website with email links or even telephone numbers and addresses will enable users to contact it for further and often more personalized information (Mathur, Mathur, & Gleason, 1998).

Because a company’s website has to compete in the clutter of thousands of other websites selling similar products and services, promotion is necessary. A memorable Internet address helps users locate it on the Web. Links from other websites, by registering with search engines and online directories and paying relevant sites for click-through links or banner advertisements, are particularly important if the company’s site is not well known. Links to other sites, such as those offering news or entertainment services and those offering complementary products, can also make the site more interesting as well as providing more relevant and up-to-date information for the users. Promoting the website through traditional media is also important, especially when it was first set up. For example, expedia.co.uk launched a £4 million promotion campaign on British TV and Press recently. The company’s web address should also be included on all its media messages “to drive consumers to the Web” (Liu & Jones, 1995; Mathur et al., 1998).

Computer Reservation Systems (CRS) and Global Distribution Systems (GDS)

A computer reservation system (CRS) is a database that enables a tourism organization to manage its inventory and makes it accessible to its distribution channel partners. Today, CRS and GDS have become essential tools for the business agent because they present information including flight schedules, fares, seats availability, and passenger reservations. These systems are an effective means of conveying and displaying information for retailers and airlines and they have become a powerful marketing tool (Seaton & Bennett, 1996).

Airlines are among the first industries to invest in and to develop CRS and GDS to exploit the potentials of IT. The Web offers the airlines even greater opportunities in streamlining and shortening the distribution channel. The no-frills or low-cost airlines that emerged in the last few years are already heavily relying on the Web to distribute flight tickets directly to customers. The major global airlines have also started to believe that the Internet offers a unique opportunity to drive down costs and restore profitability to the sector which is troubled with financial losses across the globe (Liu, 2000).

Computerized networks and electronic distribution lead the dramatic structural changes within the tourism industry. CRS are clearly regarded as the most important facilitators of these changes as they formulate a new travel marketing and distribution system. The rapid growth of both tourism demand and supply in recent decades demonstrated that the tourism industry could only be managed by powerful computerized systems. Airlines were the pioneers of this technology, although international hotel chains and tour operators realized the potential and followed by developing centralized reservation systems. The need for CRS arises from both the demand and supply, as well as from the expansion of the tourism industry in recent decades. For tourism demand, CRS satisfy consumer needs for easy access to transparent and easy services to compare information on a wide variety of destination choices, holiday packages, travel, lodging, and leisure services, and the actual prices and availability of such services. They also provide immediate confirmation and speedy documentation of reservations providing a greater degree of flexibility and enabling prospective travelers to book at the “last minute.” Moreover, improved access to information covering all aspects of tourist activities provided the framework for offering personalized services at price levels comparable to those of standard packages. From the tourism supply perspective, CRS are utilized to
manage their inventory and distribute their capacity. CRS are utilized to facilitate and manage the drastic expansion of tourism enterprises and destinations globally and can be characterized as the “circulation system” of the tourism product. CRS enable tourism providers to control, promote, and sell their products globally, while assisting them to increase their occupancy/load factor levels and to reduce seasonality. They can also contribute to their profitability and long-term prosperity as they enhance numerous business functions. In addition, CRS often charge competitive commission rates in comparison with other distribution options, while enabling flexible pricing and capacity alterations in order to adjust tourism supply to demand fluctuations. CRS also reduce communication costs, while providing managerial information on tourism demand patterns or competitors’ position. CRS can affect price competition through cost savings and efficiencies in operational management and communication, allow an increased volume of transactions to be handled, and allow the process to be both simplified and accelerated. CRS initially allowed operatives at the point of sales to be locked in or to prefer a particular company’s system over a competing one or over competitors who are not on a system (Buhalis, 1996; Wöber & Gretzel, 2000).

Destination Marketing Systems

Destination marketing systems (DMS) are referred to a variety of different ways, such as destination databases (DD), destination management systems, or travel information systems (TIS). A DMS is a computer-based information system founded on geographical linkages that form a destination (Hornby, 2004). They encompass information and reservations and operate at national, regional, and local levels. They have information on pre/postarrival (Seaton & Bennett, 1996).

Destination marketing and reservation systems can be defined as DMS. They, or parts of them, may be referred to elsewhere as DD or Destination Management Systems. On the demand side they offer multiple forms of access by potential visitors, directly or through travel agents and tour operators; to call-centers, visitor information centers, and the like and increasingly by distribution through airline GDS, home shopping networks (both on TV and computer), and the Internet. On the supply side, DMS provide a comprehensive database of products and services about the destination offer. Destinations developing products and services databases today need to be aware of the many changes in distribution technology, and the rapid introduction of multimedia. They need to include the ability to store text, still and moving images, and sound in their database. The worldwide travel industry is changing at an unprecedented rate, as there is an increasing trend towards more independent travel, more short breaks, and more vacations. There are a growing number of destinations and products for consumers to choose from. Consumers need more information more quickly and they need to be able to book easily, and with a quality of service they received elsewhere in their purchasing. DMS offer a solution to these problems. They are not perfect but are an emerging phenomenon that are worthwhile for tourist boards to evaluate seriously, especially those that attract high numbers of independent travelers (Tunnard & Haines, 1995).

Marketing Decision Support Systems (MDSS)

The importance of information and efficient information management is steadily increasing not only due to the evolution of new technologies and high-capacity storage media but also to the growing market dynamics that raise information needs. MDSS can be of particular importance as it supports organizations in collecting, storing, processing, and disseminating information, and in the decision-making process by providing forecasts and decision models (Little, 1970). In order to solve complex problems, decision makers need to have a factual knowledge of the industry (declarative knowledge) and the methodology used (procedural knowledge). The wealth of knowledge is drawn from two pools: that obtained from the “storage” of already existing experiences, and by generating knowledge in the respective field. Combining these two pools creates an arena for problem solving. The major aim of MDSS is an optimal information supply and decision support for the tourism industry. The first step is to provide online tourism survey data, as well as evaluation pro-
grams to transform data into precious management information.

MDSS predominantly include a database containing tourism market research data (declarative knowledge), various program modules (method-base, procedural knowledge) converting acknowledged methods/models into simple surfaces, and various administrative programs that assist the maintenance of the database and track and control the information search behavior of users.

The Internet supports the transport and presentation of animated and unanimated pictures, sound and video recordings, text and numerical data and is expandable. A high-performance SQL database and a functionally designed user interface for MDSS based on hypertext and Perl permits the development of interactive applications. The program modules contained in the method-base are developed according to the specific requirements of tourism managers. The Internet offers a number of advantages against the old PC solution. Because changes in the database have immediate worldwide effect the speed of information transmission can be reduced to the availability of the information source. For example, MDSS makes the monthly projections of statistics available within only a few seconds to all tourism business sector managers and destination planners regardless of whether they are located in Cairo, Red Sea Destination, New York, or Tokyo. Anybody who has access to the Internet and is entitled to use MDSS may access data and information, make calculations or simulations, and send or receive data without tiresome postal procedures, danger of loss, delays, and costs. All of these advantages have led to a significant increase in the number of users. This widens the tourism market and increases the tourism business sector market share (Wierenga & Bruggen, 2000).

E-Commerce and Tourism Marketing

The fastest growing area of the Internet today and, one which is crucial to the success of tourism, travel, and retail businesses, e-commerce has revolutionized the way we buy products and services. Travel is currently the most purchased product online, having surpassed computer equipment. E-commerce is defined as, “the sales activity undertaken through electronic distribution channels” (World Trade Organization, 2001, p. 10). E-commerce is sharing business information, maintaining business relationships, and conducting business transactions by means of telecomm networks. E-commerce is considered now a distribution channel for hotels, tour operators, and travel agents. For instance, chain hotels are applying e-commerce processes completely, starting from promoting their facilities to booking these facilities and making of e-payments available. These hotels use attractive websites that comprise slide shows for hotel facilities and virtual reality tours or interactive hotel tools. Hilton, Ritz Carlton, and Four Seasons hotels are examples of hotels applying e-commerce (Hend, 2002).

E-commerce tools comprise promotion tools for goods and services like e-catalogs, shopping mall centers, Internet advertising supported with multimedia, and business exchange management tools like e-mail, Electronic Data Interchange (EDI), electronic contracts; service delivery tools like electronic bar codes and electronic document interchange; pre/postselling tools like maintenance booklets, assurance documents; and payment tools that comprise electronic funds transfer using smart cards (Eraqi, 2002). The first step in the e-commerce process is the marketing activity to inform consumers of the product and its characteristics, and motivate them to buy it. Marketing is considered one of the e-commerce process sides. In other words, if the e-commerce process is successful, it means that marketing products are also successful. E-commerce is one of the most effective information systems in tourism marketing, especially because it does not know spatial or geographic boundaries—using electronic media it can be managed from anywhere at any time.

A Marketing Information System (MIS) is a continuing and interacting structure of people, equipment, and procedures that together sort, analyze, evaluate, and distribute pertinent, timely, and accurate information for use by marketing decision makers to improve their marketing planning, implementation, and control (Venkatesh & Davis, 2000). Figure 2 illustrates the major components of an MIS.

As a type of tourism MIS, a B2B tourism community is capable of supporting knowledge
creation and learning. The theory of knowledge creation and transformation is translated into a framework of tourism marketing information systems, which identifies the following system elements as crucial to the design of a knowledge-based system: 1) Marketing Intelligence System; 2) Marketing Research System; 3) Analytical Marketing System; and 4) Internal Report System. Xiang, Gretzel, Wang, and Fesenmaier (2002) define Marketing Intelligence as a set of sources and procedures to obtain secondary information from outside the system. Marketing Research refers to efforts of gathering primary data relevant to the knowledge-based community. The Analytical Marketing function deals with the analysis and interpretation of data. Finally, the Internal Report System incorporates elements related to the collection, storage, retrieval, and dissemination of knowledge.

However, this conceptual framework is limited as it examines knowledge management issues solely from a systems perspective and neglects to reflect organizational capabilities to integrate knowledge creation and transformation into organizational structures, cultures, and approaches. Tourism organizations differ considerably in terms of their sophistication of technology use and their organizational capacity to change and fully integrate technological development. The extent of benefits derived from the adoption and implementation of Internet technologies depends on organizational capabilities and the effectiveness with which technology is used. The specific needs and capabilities of tourism organizations in different stages of technology adoption and use can greatly enhance the value these organizations derive from a knowledge-based community and, consequently, increase the likelihood of participation. Therefore, a tourism B2B Web community needs to accommodate varying degrees of organizational technology use in order to attract and engage a large number of participants (Xiang et al., 2002).

Tourism Information System (TIS) Management

There are three major reasons why it is necessary to manage TIS. The first reason is that travelers need organized information so that it becomes easier to acquire information and make decisions. They do not want to, nor have time to, sort through information that is confusing and disorganized. The easier it is to get information, the more comfortable travelers feel and the more enjoyable the trip will be for them. Travelers who are satisfied with their trip will be more likely to return and to tell others about the good time they had. By managing your information system, you can make it easy for travelers to get the information they want.

The second reason is to present your products and services, and identify them to travelers in a clear, concise, and consistent manner using suitable and accurate TIS (Sheldon, 1997). By managing a TIS, administrators have some control over what information travelers receive and through what channels to make sure that all the delivered

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*Figure 2. The major components of an MIS. Source: http://www.infocentre.com/news/DMS.htm*
information relates to the theme. They are better able to develop continuity and coherence throughout the system.

The third reason is that TIS play an important role in community development. This is especially important in tourism because travelers see the community as a whole, rather than as individual parts. People base their image of a community on the information received from the community’s TIS. A community’s image is important because tourists often become future investors and residents in communities that they find attractive. Managers want to control the TIS so that the image projected is desirable.

There are a variety of tools that tourism company/destination can use to manage a TIS. First, establish a committee or organization to manage the TIS. It should control what information is used and how it is distributed throughout the system. It should also be responsible for evaluating the system’s effectiveness. Second, design a set of standards, or guidelines, for deciding what, how, and through what channels information will be presented. This will help to ensure that information used will accurately reflect the community’s identity and theme and that it reaches the right target market. Third, develop community cooperation in the system. Explaining the benefits of being involved in the system to local businesspeople and to community residents develops community awareness and pride. Fourth, a community’s appearance plays a significant role in its TIS. A tourist’s image of a community is significantly influenced by its appearance. Zoning can be used to make sure that a community’s appearance will have a positive influence on its image (Middelkoop, 2001).

There are two types of zoning: prestated design features, and transfer of rights. Prestated design features can be used as incentive zoning or as mandated design features. With incentive zoning, developers are granting building privileges for including prestated design features in the building design. Mandated design features require developers to include a certain prestated design feature in the building. Transfer of rights is used to the development of a particular piece of property from one developer to another. When using zoning, the zoning commission or board must be easily accessible and flexible. Then, when changes in zoning regulations are needed, they can be made (Wöber, 2000).

Zoning provides several advantages. First, it gives control over the “street level environment,” meaning things like sidewalks, shopping malls and centers, town squares, avenues of access, and travel to and through each. Second, it gives the control needed to maintain adequate amounts of space for people to move freely in, around, and through these areas. Third, it can also be used to manage the outward appearance of the “street level environment.” All structures constructed, such as storefronts, signs, etc., can be required to reflect the community’s identity and theme. Also, it allows the community to save older, historical buildings while allowing the development of surrounding property. To discover the importance of TIS applications and information needs in tourism management in Egypt, a sample of travel agents were surveyed and interviewed.

Research Methodology

The research population was the entire group of travel agents in Egypt. It was 869 category “A” in 2003 and the sample size was 44 Egyptian travel agents (about 5% of the total population). To achieve the objectives of this research, primary as well as secondary data were considered essential. Secondary data were collected from books, academic journals, papers from professional bodies and research institutes, online articles, and tourism-related websites. There was access to the records of the Egyptian specialist tourism, business, and Information Communication Technology (ICT) journals and newspapers.

Primary data have been collected throughout both interviews and questionnaires. The study investigated the Marketing Information System application of Egyptian tourism business sector organizations. Thus, the research had to be directly involved with people working in the tourism companies, as well as government officials such as those working for Egyptian Tourism Authority (ETA). Five in-depth interviews were conducted with marketing experts from ETA during March 2005 and 44 questionnaire forms were distributed to tourism marketing managers from different tourism business sector companies. The response
rate was about 64%. Statistical methods such as the mean, \( t \)-test, and chi-square test were used to find the results of the Egyptian tourism business sector attitudes towards the importance of information system applications in tourism.

Findings and Analysis

It was evident from the interviews analyses that the TIS is very important for effective tourism marketing. However, the Egyptian tourism business sector has the right information infrastructure and has a great potential, mainly because of its positive attitudes towards the importance of information technology for successful tourism marketing and its developing business as these factors expand the size of the market and the needs for commercial tools. Personal computer penetration is growing and there are now more than 100 Internet service providers (ISPs) for the tourism business sector with information services. The interviewees also mentioned that “although the infrastructure is there to support TIS applications penetration, tourism establishments have not taken full advantage.” They keep using traditional channels in order to promote and advertise their tourism products.

The questionnaire analysis shows that the most important communication channel for Egyptian tourism businesses sector was the fax, followed by telephone and direct sales, which constitute 80%. The Internet did not appear in their first choices and constituted 20%, while telex was the least preferred channel. These results confirm that the vast majority of bookings in the Egyptian tourism business sector companies came from international tour operators; thus, fax was considered as the most convenient means (70%), taking into account the fact that the Internet has not been fully exploited yet in the tourism business activities (30%). Although the Internet provides useful tools and functions for the promotion and marketing of tourism products, most tourism companies in Egypt still see the Internet as an additional way for communication, used mainly for e-mail.

The majority of the tourism enterprises have not obtained any online presence. The Egyptian tourism business sector companies that have online presence had no applications or services in place to support online marketing or transactions. Only a small percentage of these companies were providing facilities for payment online (5%). The e-marketplace providers were not accepting liability and were doing very little to build trust between potential trading parties in the Egyptian business sector. The Egyptian tourism sites did not possess the interactive features for successful Internet tourism marketing. The tourism websites were primarily used to provide information for current or potential customers about their companies and the tours they offer. The Egyptian tourism business sector companies perceived the Internet mainly as an information provision tool and less as a means that could improve their product offering and increasing their bookings.

The survey results demonstrated that the Egyptian tourism business sector companies considered that constant and global reach are the most significant benefits that TIS applications can provide to a tourism company. Additionally, increases in direct sales and enhancement of efficiency and effectiveness are also considered important. However, personalization, competition, following up, and focusing on niche markets weighted less in the perception of tourism managers. It seems that the Egyptian tourism business sector policy is more focused on the attraction of mass markets than the high-quality tourism markets that need to provide personalized and tailored-made services to these niche markets.

This situation can be improved because the Egyptian tourism business sector managers’ attitudes towards the importance of IS applications in tourism were positive (Table 1).

According to the results shown in Table 1, tourism business sector managers’ attitudes towards the importance of TIS applications in tourism are positive in that the average of means was 1.24, greater than 1, the \( t \)-test of significance was less than 0.05 for all attitude variables, and the chi-square test significance for all variables was less than 0.05 except for variables 10, 15, 16, 17, and 18, which had significance levels greater than 0.05 at the 5% level. However, for all variables chi-square significance was less than 0.05 at the 1% level.

The survey results analysis showed concerns about the privacy of information, threat of increase
Table 1
Tourism Business Sector Managers’ Attitudes Measurement

<table>
<thead>
<tr>
<th>Attitude Variables</th>
<th>$t$-Test</th>
<th>$t$</th>
<th>Sig.</th>
<th>Chi-Square</th>
<th>Chi-Square Sig.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IS differentiates your tourism products from other competitors</td>
<td>14.789</td>
<td>0.000</td>
<td>5.143</td>
<td>0.023</td>
<td>1.29</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>2. IS increases customer satisfaction and retention</td>
<td>14.789</td>
<td>0.000</td>
<td>5.143</td>
<td>0.023</td>
<td>1.29</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>3. IS enhances customer value</td>
<td>21.617</td>
<td>0.000</td>
<td>20.571</td>
<td>0.000</td>
<td>1.07</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>4. IS increases tourism enterprises market share</td>
<td>15.000</td>
<td>0.000</td>
<td>7.000</td>
<td>0.008</td>
<td>1.25</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>5. IS helps in tourism services standardization</td>
<td>15.000</td>
<td>0.000</td>
<td>7.000</td>
<td>0.008</td>
<td>1.25</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td>6. IS increases direct sale through e-commerce</td>
<td>28.000</td>
<td>0.000</td>
<td>23.148</td>
<td>0.000</td>
<td>1.04</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>7. IS helps tourism business sector to be more effective and efficient</td>
<td>14.990</td>
<td>0.000</td>
<td>8.333</td>
<td>0.004</td>
<td>1.22</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>8. IS improves real time customer services</td>
<td>14.789</td>
<td>0.000</td>
<td>5.143</td>
<td>0.023</td>
<td>1.29</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td>9. IS helps tourism company in gaining better understanding of customer needs</td>
<td>29.000</td>
<td>0.000</td>
<td>24.143</td>
<td>0.000</td>
<td>1.04</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>10. IS improves overall tourist service</td>
<td>10.947</td>
<td>0.000</td>
<td>5.846</td>
<td>0.054</td>
<td>1.62</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>11. IS changes the way in which tourism work is done</td>
<td>27.000</td>
<td>0.000</td>
<td>22.154</td>
<td>0.000</td>
<td>1.04</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>12. IS helps management to gain better information for successful decision making</td>
<td>29.000</td>
<td>0.000</td>
<td>24.143</td>
<td>0.000</td>
<td>1.04</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>13. IS helps tourism managers to build business innovation</td>
<td>15.377</td>
<td>0.000</td>
<td>9.143</td>
<td>0.002</td>
<td>1.21</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>14. IS improves response time to enterprise stakeholders</td>
<td>29.000</td>
<td>0.000</td>
<td>24.143</td>
<td>0.000</td>
<td>1.04</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td>15. IS helps in creating a successful strategic alliance</td>
<td>10.947</td>
<td>0.000</td>
<td>5.846</td>
<td>0.054</td>
<td>1.62</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>16. IS helps tourism enterprise to reduce its operation costs</td>
<td>14.702</td>
<td>0.000</td>
<td>3.571</td>
<td>0.059</td>
<td>1.32</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>17. IS helps in improving the tourism enterprise image</td>
<td>14.148</td>
<td>0.000</td>
<td>2.462</td>
<td>0.117</td>
<td>1.35</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>18. IS enhances tourism competitive advantage</td>
<td>14.819</td>
<td>0.000</td>
<td>1.286</td>
<td>0.257</td>
<td>1.39</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Average of attitudes</td>
<td>18.551</td>
<td>0.000</td>
<td>11.345</td>
<td>0.035</td>
<td>1.24</td>
<td>0.405</td>
<td></td>
</tr>
</tbody>
</table>

Based on a scale of: yes = 2, no = 1).

In conclusion, an MIS is a very important means for effective tourism marketing. Most of the Egyptian tourism business sector organizations have to develop their online presence. Most of the companies that have online presence do not have marketing information applications or tourism marketing services in place to support online transactions. The Egyptian tourism business sector managers’ attitudes toward the importance of IS applications in tourism are positive. This can help in improving the situation in the future.

The e-marketing is therefore immature and requires major strategic management actions from both the government tourism organizations and private tourism companies. Tourism organizations and companies need to develop IT-based marketing strategies in order to take full advantage of the opportunities that TIS applications can provide. They need to understand the MIS application developments in the countries of origin of their inbound tourists and to develop suitable e-marketing solutions to serve their clients properly. Companies that already have online independent presence should make their websites more interactive in order to attract more visitors and achieve more online marketing activities or transactions. The role of the tourism public authorities is very important for simulating IT and MIS system applications. The government should employ its control to modify the regulations in order to help tourism business sector companies to adopt information system technologies.
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References


