E-Tourism

E-Tourism refers to a phenomenon and research area in which the adoption of information and communication technology (ICT) by tourists and tourism businesses transforms the processes and value chains in the industry. It not only changes the business process within a business or organization, but also reconfigures the landscape of commerce (Buhalis 2003). It is also referred to as travel technology or e-travel.

As a service industry, tourism is specifically influenced and transformed by the development of ICT. Tourism products have the following characteristics: they are complex and intangible; the production and consumption experience are inseparable; inventories in tourism businesses are always perishable; and the consumption experience varies a great deal depending on the individual tourist at different times. In addition, the tourism industry is composite in nature and requires great effort in coordinating different types of services and the delivery of rich information in order to reduce the uncertainty during service encounters. Businesses also need to act swiftly to sell unsold inventories to maximize revenue and profit. As an information intensive industry, tourism requires the help of ICT and as a result, are transforming each other. Travel has become the number one eCommerce category with the largest amount of transactions (Harteveldt, Stark, Sehgal, and van Geldern 2009).

History of e-Tourism

The dynamic of e-Tourism is closely related to the development of ICT. In the past, airlines manually managed reservations through a card system and hotels tracked inventories through colored tapes on walls. As soon as the first electronic general purpose computer, ENIAC, appeared in 1946, the airline industry started the wave of adoption: American Airlines installed
the first automated booking system in the same year. Other airlines and hotel chains started to adopt ICT to build Computer Reservation Systems (CRS's) in the 1960s and 1970s. In the 1980s, multiple CRS's from airlines and hotels started to merge into Global Distribution Systems (GDS's) so travel agencies could book multiple services. During the 1990s, the wide adoption of the Internet created new avenues of distribution and ways of reaching tourists directly, causing the Internet to start reconfiguring the structure of these industries (Buhalis and Law 2008). In the early 21st century, the social media and mobile technologies dramatically changed the ways of accessing information and conducting transactions and the power structure and balance between consumers and businesses. In the early 2010s, the prospect of the application of tremendous amounts of online data, or big data, to the tourism industry has the potential of transforming a vast amount of data into knowledge, dramatically enhancing the travel experience, and providing a deeper understanding of tourist behavioral patterns and the structure of this industry.

*Current Technologies of e-Tourism*

E-Tourism has matured into an established sub-discipline of tourism with a few specialized organizations, journals, and conferences, as well as many research articles appearing every year. The organizations include Hospitality Financial & Technology Professionals (HFTP), International Federation for Information Technologies in Travel and Tourism (IFITT), and International Hospitality Information Technology Association (iHITA). Some of them have associated conferences and journals, such as HiTEC (HFTP), ENTER eTourism Conference (IFITT), iHITA annual conference, *Journal of Information Technology and Tourism* (JITT) and *the Journal of Hospitality and Tourism Technology* (JHTT). There are many possible typologies in e-Tourism technologies. From a technological perspective, three types of sub-areas of technologies have emerged: operational technologies are those tools and systems are mainly used
by professionals which help a tourism or hospitality business or organization increase efficiency and competitiveness; consumer technologies are the platforms or tools adopted by tourists to search information, plan their trips, make purchases and share experiences; and distribution and commerce technologies are those platforms or tools which offer distribution channels and mediate the transactions between tourists and businesses or services.

Operational technologies involve many types of systems. A Property Management System is a computer system used in an accommodation or resort for reservations, bookings, point of sales, phone service, housekeeping, and other services. Many times it interfaces with other systems such as a GDS, customer relationship management, revenue management, human resources, etc. Currently, the most popular PMS is Opera by Micro/Fidelio (Nyheim, McFadden, and Connolly 2004). A Restaurant Management System is a system used in food or drink enterprises which help serve customers and employees with transactions and controls. It usually includes a point of sale, inventory and menu management, reservation and table management, and back-office. Customer relationship management refers to an automated system and process, which focuses on managing customer interactions in order to increase customer satisfaction and maximize profits. It could be a part of a Property Management System or Restaurant Management System, or a standalone system, such as Salesforce.com. A revenue management system refers to a system which helps revenue managers with market segmentation, the forecasting of customer behavior, and formulating pricing strategies for the purpose of maximizing revenue and profit. Big data in the tourism and hospitality industries refers to the deluge of data generated from ubiquitous computing devices adopted by tourists and businesses. The data is getting too large, complex, and unstructured for traditional database systems to handle and thus specialized software is used
to mine trends and correlations. The tremendous amount of data could provide a competitive advantage to any business who knows how to utilize it properly.

Consumer technologies evolve along with the adoption of new technologies. Many studies have been conducted on online information search through the Internet and various information needs. Online resources have replaced Word-of-Mouth as the top information source used for gathering information. Many studies focus on the information needs, information sources, navigational paths, and attitude changes of online information search (Pan and Fesenmaier 2006). The studies on hospitality and tourism websites have focused on the usability and accessibility of the business or organization's websites. The evaluation of website design has attracted many empirical studies (Law, Qi, and Buhalis 2010). In addition, tourists share experience through online platforms with each other and those reviews and comments have gained more trust than traditional marketing messages in general. For example, TripAdvisor.com created a shift of power between consumers and businesses. Tourists are more informed and businesses are getting more transparent (Litvin, Goldsmith, and Pan 2008). However, the trust may vary according to different social media platforms (Munar and Steen Jacobsen, 2013). As a result, social media marketing has become an emerging area to deal with positive and negative reviews and to make marketing messages more viral to attract more attention. Furthermore, in 2009, more than 80% of U.S. travelers will use a search engines while making travel plans. Increasing visibility on search engines includes two aspects: Search Engine Optimization refers the practice of tweaking information content on one's website and conducting link campaigns in order to reach the top positions in organic search results; and paid advertising on search engines refers to the practice of paying for user clicks when a user types in a query in a search engine. In 2013, the three major search engines are Google, Bing, and Yahoo, even though Yahoo and Bing are both powered my
Microsoft technology. Google and Microsoft have similar but different algorithms for ranking web pages and paying for keywords (Pan, Xiang, Fesenmaier, and Law 2011). Lastly, the adoption of mobile technologies has also changed tourists’ experiences. With any time and any place access to information and computing power, the tourists can make plans on route, purchase travel products later in the travel planning stage, and ease the uncertainty and cultural barriers associated with traveling. Many mobile apps exist for tourists, including flight tracker, destination guide, online travel agencies, and attraction guides. Mobile technologies, especially smart phones, are changing the tourist experience and the ways that businesses communicate and do business with their customers (Wang, Park, and Fesenmaier 2012).

Distribution technologies have gone through an evolution but many systems still co-exist today. CRS and GDS are still widely used (Collins, Cobanoglu, and Malik 2008). Online Travel Agencies (OTA) are a type of intermediary that emerged from the wide-adoption of the Internet. They offer a wide range of travel services from airlines, hotels, car rentals, events, and activities. Tourists can also freely bundle different products together. Some of them were created by software companies, for example, Expedia.com was created by Microsoft Inc., and later spun off as an independent company. Travelocity was an extension of Sabre, a GDS. Orbitz was started as a partnership between multiple airlines in the United States in an effort to gain an advantage over then newly appeared OTAs such as Expedia or Travelocity. One unique OTA is Priceline, which specializes in a “Name Your Own Price” system. In this system, the tourists can specify the price of hotel rooms, airline seats, or other travel services they are looking for, along with the service level and the approximate location. The matching businesses then decide whether or not to accept the offer. The tourists are not able to see the exact brand and location of the business until the transaction is complete. Meta-search engines are aggregates of multiple travel online
agencies and services, such as Kayak.com and Bing.com/travel. The meta-search engine Kayak.com allows the users to search hundreds of travel websites at once and thus offer more choices. The users are then directed to the specific website to finish the transactions. Destination Marketing Information System refers to a framework and platform in which stakeholders can share information and intelligence about a destination for the purpose of enhancing the competitiveness of a destination.

In addition, online commerce and social media have facilitated the sharing of travel services and experience, leading to new business models involving peer-to-peer communication. Airbnb.com and couchsurfing.com are two examples. This exemplifies the mix of mediation and distribution systems with customer involvement and co-creation.

**Future Challenges**

This area is always industry-driven. In the future, this area will continue the usual dynamics and paradigm shift, as new technologies are being invented and further widely adopted by businesses and consumers. However, many studies are post-doc in nature, studying the user adoption and user behavior changes in a post hoc manner. More research is needed to focus on envisioning the future and directing future adoptions by working with the industry on exploring new frontiers. For example, how are different types of new technologies in the lab stage relevant to the tourism industry, how can one pick and choose the systems, and how can different online data be used to inform future operational and marketing strategies.

**See Also:** GPS, information technology, Airline, Internet, Technology

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