Information technology in Tourism

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*Abstract-***Tourism is travel for recreational, leisure or business purposes. Information technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications. Information Technology in tourism is of special significance. Information technology is used for Transport sector, Accommodation sector Attraction sector. These technologies are used in order to find out and satisfy the ever-changing demands for tourism.**

Keywords-Tourism, players involved in tourism, Information technology, Transport sector, Accommodation sector Attraction sector

I. INTRODUCTION

Tourism is travel for recreational, leisure or business purposes. The World Tourism Organization defines tourists as people "traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes".[1]

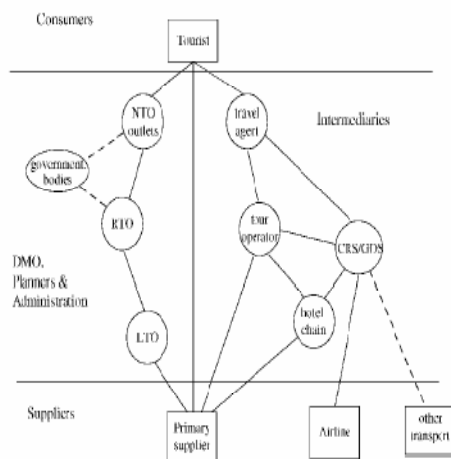The following diagram depicts the groups of players involved in the industry.

Figure 1 – Overview of players involved in tourist industry. (Werthner & Klein, 1999, p. 257). (note – NTO, RTO and LTO represent tourist organisations on a national, regional and local level)

Information technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications.[2] IT is the area of managing technology and spans wide variety of areas that include but are not limited to things such as processes, computer software, information systems, computer hardware, programming languages, and data constructs. IT professionals perform a variety of functions (IT Disciplines/Competencies) that ranges from installing applications to designing complex computer networks and information databases. Information technology has deep implications for economic and social development. The most important benefit associated with the access to the new technologies is the increase in the supply of information. Information is shared and disseminated to larger audience. Secondly it reduces the cost of production. Knowledge is produced, transmitted, accessed and shared at the minimum cost. With the reduction in the transactional costs, there is also a reduction in the degree of inefficiencies and uncertainty. Thirdly it has overcome the constraints of distance and geography.[3]

II. REVIEW OF USE OF INFORMATION TECHNOLOGY IN TOURISM

Travel and tourism has not only become one of the world's largest industry but also grows consistently every year. Between 1990 and 2000, tourist arrivals worldwide grew at an average rate of 4-3 percent per annum. Travel and tourism represent approximately 11% of the worldwide GDP, according to the World Travel & Tourism Council. World Tourism Organization predicts one billion international arrivals in the year 2010 and has forecasted that by 2020, international tourist arrivals to Asia and Pacific region would experience over 400 percent growth from 105 million in 2000 to 438 million in 2020. As the world is being ushered into the information age, adoption of the information technology (IT) is rapidly increasing. Internet has transformed the world into a global village that can be navigated at the click of a mouse. It provides potential tourists with immediate access to textual and visual conformation on destinations throughout the world. The Internet has also become an essential tool in business to business (B2B) and business to consumer (B2C) transactions, the distribution of products, networking of business partners, and is an instantaneous means of accessing knowledge on all kinds of subjects including travel and tourism information. The Internet can be accessed through mobile telephones, cable-television, fixed

telephones using traditional personal computers and laptops. Information is readily available 24/7 and the resulting cost transparency enables consumers to make more informed choices (Sinha, 2000).

This ease of access and depth of information has stimulated the emergence of a new breed of travel consumers who are independent and prefer to search for holidays themselves online, rather than through travel agents. And the majority of the people connected to the Internet happen to be from the world's top three tourism spending markets - Germany, USA and UK. The Internet is already the primary source of tourist destination information in these major markets. It has outpaced traditional sources of information on tourist destinations within the short period of its existence. Its audiovisual presentation of information on destinations outdoes the glossiest and most colorful print, and the quality of the presentation plays a decisive role in the end-consumer's choice of one destination over another. Internet also offers tourism destination and businesses the means to make information and booking facilities available to millions of consumers around the world at a relatively low cost, while at the same time enabling them to cut down drastically on amounts invested in the production and distribution of promotional materials. Travel and tourism are fast becoming the largest category of products sold on the Internet, which must therefore be seen as the new marketing battlefronts for tourism destinations in Asia-Pacific. Apart from the Internet, technological advances gave rise to other electronic distribution platforms such as interactive satellite television and mobile devices. The expected proliferation of satellite TV and m-commerce will gradually intensify competition among intermediaries who will have to reengineer their business processes and evolve new business models in order to survive and remain competitive (Buhalis & Licata, 2002)

It is therefore, in the best interest of the Asia-Pacific region to keep abreast with time and step up its use of IT to satisfy the thirst for instantaneous tourism information on destinations. The stage is now set for national, regional, local tourist organizations, intermediaries, and administration and policy framing bodies in the Asia-Pacific region to rise to the challenge and understand, adopt and use the full potential of ICT to satisfy the thirst for instantaneous tourism information on destinations by not only marketing various tourism products and destinations to potential tourists, but also monitor and build a relationship with the tourists in the entire tourist life cycle.

III. NEED OF INFORMATION IN TOURISM

Travel is a basic human nature. Technological revolutions in the last few decades and the resulting changes in the social systems go faster its intensity in the current century. Thus, tourism is presently a mass phenomenon involving every human being in the world. They need detailed information about each place they intend to visit. The specific elements of such information needs are:
- Geographical information on location, landscape and climate, etc.
- Information Needs in Tourism

- Accommodation, restaurant and shopping facilities
- Accessibility though air, railway, water and road and availability of scheduled means of transport
- Social customs, culture and other special features of the place
- Activities and entertainment facilities
- Seasons of visit and other unique features
- Quality of facilities and their standard prices including exchange rates

Though the ultimate users of this information are the tourists, the actual benefits in money terms accrue to the tourism industry consisting of the destination managers and service providers. The travel intermediaries like travel agents, tour operators, and reservation system store such information in respect of each destination to service their clients and improve their business. They need the information in the easiest retrieval format so that the information needs of the clients are met as quickly as possible.

Tourists generally need both static and dynamic information. It includes details information about location, climate, attraction features, history, facilities available, etc. Information about airline, train and bus schedules, tariffs of transport and accommodation units and current availability of such facilities is considered as dynamic as they can change very frequently. These items of information have to be gathered, stored and disseminated on a real time basis. All types of reservation systems including air, railway and accommodation sectors contain such information.[3]

The tourism industry is made up of three major components: namely,
- a) Transport sector,
- b) Accommodation sector
- c) Attraction sector

IV. INFORMATION TECHNOLOGY AND THE TOURISM INDUSTRY COMPONENTS

a) Transport sector,

The travel services, all over the world and in many parts of India are fully computerised. The travel services, such as, railways, car rental, bus/coach hire or trip and airlines tickets, all are computerised and thus, proper information management is possible. Information regarding the tourists or passengers of yesterday, today and tomorrow is now readily available through the data generated by various tourism organizations.

The various fields of travel services using computer applications

a.1) Car Rental

Car Rental is a big business world over and in the metropolis and big cities. The main clients of car rental are the corporate or business travellers along with the tourists wanting better service and comforts while travelling.

The car rental business is fully computerised abroad, specially in America and Europe, and the Information

and Reservation System, such as that of **Amadeus**, **Sabre**, etc. are being used for car rental and information.

a.2) Railways

Railways is the most favoured form of travel. The computerization of the railway services was introduced a few years back. The software package used in ticketing and other customer services has been specially designed and developed for Railways. The computerized system broadly centers around the PNR (Passenger Name Report) number provided on each ticket of the customers. Each one of these PNR number is unique and identifies not only the person travelling on the ticket along with the passenger's personal details but also the train and the destination of travel. Now a person can book tickets well in advance of the date of travel and get reservation on the spot. The computerised ticketing system has also shown way to computerised customer service facilities.

a.3) Airlines

The airlines have seen the maximum computerisation in the travel segment. Computer Reservation System (CRS) is widely used to book tickets in all the airlines. The CRS helps in generating a higher rate of occupancy and also provides a better scope of marketing and distribution to the airlines. The increasing popularity of air-travel globally, gave rise to the need of a better and efficient distribution mechanism. In the 1970s, the first **Information and Reservation System (IRS)** was developed in U.S. This system provided both information of tourism industry, including that of airline industry and also provided CRS for direct booking on the airline of choice.[4]

b) Accommodation sector-

The structure of the tourism industry meant that businesses in the accommodation sector lacked direct access to travellers and consumers. Ebusiness has changed the way firms in this sector can do business. In fact, groups in the hotel sector are developing communications networks designed to compete with Global Destination Systems (GDS)-A system containing information about availability, prices, and related services for Airlines, Car Companies, Hotel Companies, Rail Companies, etc. and through which reservations can be made and tickets can be issued. A GDS also makes some or all of these functions available to subscribing travel agents, booking engines, and airlines. The GDS leaders are Amadeus, Apollo/Galileo/Worldspan, Sabre. These GDS are important technology solutions for information management and are used primarily by travel agencies and airlines. To cope with this new competition, the GDS have become suppliers of technology solutions directed at accommodation. Expedia and E-Travel target leisure and business.

c) Attraction sector-

In the case of attractions both manmade and natural attraction owners need to communicate or inform their customers and potential customers about their production. Information about the kind of attraction, where they are located and how to get there is of vital importance. The attraction owners particularly the national tourist offices discharge their duty of promoting their country's tourist attractions using the information.

V. INTERNET AND TOURISM

Internet is an interconnected system of networks that connects computers around the world via the TCP/IP protocol. Today, the internet is a global "people's network" for communicating and sharing information. It consists of two powerful tools- email and the World Wide Web. The WWW is the part of the internet where a vast global information resource, or library, has emerged in recent years. The use of the Internet for communicating and transacting with customers has been growing rapidly in the worldwide tourism & hotel industry. There has been rapid increase in the online booking in the hospitality & tourism industry e.g., e-booking of hotel/motel rooms, airline tickets, travel packages etc. due to the fact that the industry is one of several services – which can be checked, inquired, and ordered online easily, and conveniently communicated and delivered electronically via the Internet.

Following are different area where internet is used in tourism industry.

a) Marketing

Technology tap almost every aspect of marketing, including:
- online advertising
- editorial and newsletters
- Special website to provide information of specific region e. g. http://www.maharashtratourism.gov.in
- search engine marketing
- email promotion
- word-of-mouth via social networks like blogs with customer reviews, communities such as the free Flickr photo sharing website and YouTube video sharing site, discussion groups and facebook

b) Booking systems

Latest research suggests that more than half those who travel book online when they have the option so it pays to have a real-time system for sales and reservations.

c) Delivery of visitor experiences

Tourism operators are using technology to:
- provide an initial experience on-line, for example, experience-driven web content or tasters delivered pre-trip by online audio podcast or video clips
- deliver audio tours for use on-site via MP3 players
- provide interpretation via mobile phones or handheld devices
- link customers to other experiences in your region, such as recommending other things to see or do on your website or as part of your tour or experience. In this way, you can help your customers understand how they can be part of a bigger visitor experience.

d) Customer relationships and follow-up

Technology is a great way to continue customer contact using:

- a contact database
- an electronic newsletter to help keep your brand and the visitor experiences you provide in people's minds
- group email lists for regular updates
- incentives or encouragement for customers to place reviews on travel sharing websites such as TripAdvisor.
- customer email feedback that you can use to improve your product
- email-based customer satisfaction surveys.

e) Digital Coach Program

Operators interested in learning how to get online can participate in Tourism Tasmania's Digital Coach Program. The Digital Coach Program is free and gives participants access to six experts in online marketing and distribution. The program's coaches make getting online easy by sharing advice on the e-connect forum, phone assistance, small group and one on one support.

VI.   ICT USED IN TOURISM

Information and communications technology or information and communication technology, usually abbreviated as ICT, is often used as an extended synonym for information technology (IT), but is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers, middleware as well as necessary software, storage- and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information. In other words, ICT consists of IT as well as telecommunication, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions. The expression was first used in 1997 in a report by Dennis Stevenson to the UK governmentand promoted by the new National Curriculum documents for the UK in 2000.

Following are some examples where uses of ICT in Tourism is possible.

- Managing destination resources
- Inventory of tourism resources
- Managing sites and attraction
- Indentifying suitable locations for tourist
- Manage tourist statistics

VII.   CONCLUSION

This paper discusses field related to tourism and various information technologies available to enhance the existing infrastructure of tourism industry.   The technologies mentioned is mostly applicable in Transport sector, Accommodation sector Attraction sector. Using this, the present situation of tourism can be improved tremendously.

REFERENCES

[1]   "UNWTO technical manual: Collection of Tourism Expenditure Statistics" (PDF). World Tourism Organization. 1995. p. 14. http://pub.unwto.org/WebRoot/Store/Shops/Infoshop/Products/1034/1 034-1.pdf. Retrieved 2009-03-26.

[2]   Longley, Dennis; Shain, Michael (1985), Dictionary of Information Technology (2 ed.), Macmillan Press, p. 164, ISBN 0-333-37260-3

[3]   ICT and Tourism: Challenges and Opportunities Deepthi Shanker*Humanities and Social Sciences, Indian Institute of Technology, Guwahati-781039

[4]   http://www.egyankosh.ac.in/bitstream/123456789/36241/1/MTM4-13.pdf

[5]   Tourism and Information Technology G. Raveendran Department of Tourism,
          Transport Bhawan, New Delhi-110 001.

[6]   A GOOD PRACTICE GUIDE :TOURISM FOR NATURE & DEVELOPMENT

[7]   Information Technology: Its Uses in Tourism Industry Mekonnen G/Egziabher (Catering and Tourism Training Institute)

[8]   Handbook of Consumer Behavior, Tourism, and the Internet Juline E. Mills, Rob Law

[9]   EXPLORING THE VALUE OF INTERNET IN TOURISMCandidate, MSc IT, BSc {Hon.}-Computing) National Secretary- e-Brain ICT Consultant Immediate Past President-Computer Society of Zambia

[10]   Baker, D.A. and Crompton, J.L. (2000). "Quality, Satisfaction and Behavioral Intentions" Annals of Tourism Research, 27(3), pp. 785-804.

[11]   Internet Tourism Marketing: Potential and Constraints By: Zhenhua Liu, The Scottish Hotel School, University of Strathclyde, UK

[12]   Bringing Technology and Tourism Together by Brian Deeney

[13]   Journal of Information Technology and Tourism published by Cognizant

[14]   Travel Impact Newswire, edition 81, 1 December 2004.

[15]   Ashworth, G.J. and Voogd, H. (1994). "Marketing of Tourism Places: What Are We Doing?" In M. Uysal (Ed). GlobalTourist Behaviour. New York: The Haworth Press, Inc

[16]   Go, F. (1992) "The Role of Computerised Reservation Systems in the Hospitality Industry." Tourism Management, 13.1: 22-26.

[17]   Sometimes used with *technologies* in the plural. Originally, only *information and communications technology* (with *communications* in the plural) was considered correct since ICT refers to *communications* (in the sense of a method, technology, or system of sending and receiving information, specifically telephone lines, computers, and networks), not *communication* (the act of sending or receiving information by speaking, writing, phoning, emailing, etc. or a message containing such information), and the older form (*information and communications technology*) is still the only one recorded in professionally edited reference works (e.g. Oxford Dictionaries Online, Computer Desktop Encyclopedia, Webopedia, and Encarta® World English Dictionary) and preferred by many style guides (e.g. Editorial Style Guide of the Republic of South Africa. Nevertheless, the form *information and communication technology* is becoming increasingly common and is now used in about half the books that can be searched using Google Books and is for example also used by the International Telecommunication Union.

[18]   http://foldoc.org/Information+and+Communication+Technology

[19]   http://specials.ft.com/lifeonthenet/FT3NXTH03DC.html

[20]   The Independent ICT in Schools Commission (1997) Information and Communications Technology in UK Schools, an independent inquiry. London, UK. Author: chair Dennis Stevenson

[21]   Information and Communication Technologies in Tourism 2010: Proceedings of ...   By Ulrike Gretzel, Rob Law, Matthias Fuchs