Urban Tourism Development Mechanisms Based on Information Technology
Desenvolvimento do Turismo Urbano Baseado na Tecnologia da Informação

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Abstract

Information for tourism and transportation industries is as vital as blood for the human life. According to tourism experts, Iran ranks among ten top countries with the most touristy attractions. Iran's share from the income of international tourism markets was about 1 unit from a total of 700 units in the year 2000. A major problem on the way of tourism development is the weakness of information systems and their supporters. This has led to providing insufficient information on the attractions and capabilities and service preparation, much lower than expected level. This is while for tourism planning and dynamism exact and updated information system is needed; IT is very effective in this respect. IT can play a great role in managing, planning, and marketing for tourism development. Emphasizing IT usage in tourism, some main applications of this technology like fast, cheap, and on time informing of electronic systems for service provision such as computer reservation systems (CRSs), global distribution systems (GDSs) and Internet have been regarded in this paper.
Keywords: tourism development; marketing; tourism potentials of Iran

Resumo

A informação para a indústria do turismo e do transporte é tão vital quanto o sangue para a vida humana. De acordo com especialistas em turismo, o Irã encontra-se entre os dez países com maior número de atrações turísticas. O Irã recebeu do mercado turístico internacional cerca de uma unidade em cada 700 unidades no ano de 2000. O maior problema para o desenvolvimento do turismo é a baixa qualidade dos sistemas de informação. Isto tem conduzido a informações insuficientes acerca das atrações e capacidades do setor. Tal situação é relevante para o planejamento turístico, sendo necessária a atualização dos sistemas de informação; a tecnologia da informação é bastante efetiva neste aspecto. A IT pode desempenhar um importante papel na administração, planejamento e propaganda para o desenvolvimento do turismo. Neste estudo é enfatizado o uso da IT no turismo e algumas das principais aplicações desta tecnologia, tais como a informação atualizada, rápida e barata através de sistemas eletrônicos como CRSs (computer reservation systems), GDSs (global distribution systems) e Internet.
Palavras-chave: desenvolvimento do turismo; propaganda; potencial turístico do Irã

1 Introduction

Fast scientific revolution in the second half of 20th century has changed world face in an unrecorded way. Computer advent in human life and its convergence with communicative waves has created global information network referred as information revolution. In scholars' ideas, informatics revolution has changed the world more than industrial revolution, penetrating in all human life aspects. Such revolutions in economy have created modern IT-based economic methods and opened new arenas in income earning. Tourism has been the most significant income resource in most of developed countries in recent years. Introducing their natural and historical attractions, these countries have gained fluent income through building strong communicative foundations, using information network and global communication. Nowadays, IT has revolved tourism marketing, directing tourism attraction ways by paper and TV toward advertisement via Internet. As one of ten top countries with the most touristy attractions, Iran had 800 million $ income from tourism in 2000 that gives it the rank of 56th Tourism industry in Iran and World (2001a,b; 2003). On this basis, IT potentials in Iran should be examined, attractions should be highlighted and IT-based services should be offered to the tourists.

2 The Importance of IT Applications in Tourism Development

According to Sheldon (1997), information for tourism is like blood for human life. IT capabilities have led to new demands in global networks and provided the conditions for distributing the products for the manufacturers across the world; this gives the consumers the chance of more alternatives in selecting their favorable goods (Buhalis, 2001). More importantly, global competition for tourism suppliers has led to more products' variety and cost decrease. IT in tourism has developed selection circle around the consumers and facilitated service provision. In fact, motivations, favors, mental and social backgrounds of the tourists are different in a way that each person demands a special product with certain quality in a specific time based on his willingness. IT enables touristy corporations to offer services for different classes with different interests. Based on the latest statistics, there are 3167 touristy attractions in Iran which can be classified in 3 groups:

1. 2,140 tangible and intangible attractions with the including architectural and artistic monuments before and after Islam advent, rituals of different areas, art crafts, traditional foods, country music, and local ceremonies.

2. 819 natural places like climatic areas, mountains, deserts, valleys, preserved areas, shelters, and national parks.

3. 208 human-made places including facilities for gatherings, fairs, cultural events, recreational centers, and museums (Tourism industry in Iran and World, 2003).

However, in past decades, for the weaknesses in introducing a real picture of tourism potentials attracting foreign tourists is not proportional to existing capacities. So, the necessity of a proper information context for covering the defaults and benefiting from potentials using IT is completely felt. A dimension of promoting tourist services is creating an integrated information network across the country. In the case of creating this system, service providers of tourism like travel agencies, hotels, and tours can serve the passengers and tourists in the fields of transportation, places, and accommodation. Due to the importance of tourism in culture blooming in the country, the necessity of integrating tourism services for more development and income seems inevitable.

3 Tourism Capabilities and Potentials in Iran

With over 1,200,000 historical and natural attractions, Iran is one of ten top touristy countries in the world. In 2000, global income of the world from tourism was US$ 500 billion which exceeds oil income of OPEC members. Seven hundred million tourists with over US$ 500 billion visited touristy places among which Iran's share is US$ 800 million in 56th rank. Iran also has 69th rank from the view of tourism number. Italy which is similar to Iran from historical and natural status has gained US$ 31 billion (Tourism industry in Iran and World, 2003). For proper steps in recent years, tourism income has considerably increased from US$ 27 million in 1988 to US$ 670 million in 2000.

Based on the predictions, tourism numbers which includes 7% of the whole trips will exceed 20% in near future. WTO predictions show that since every nature lover spends US$ 1000-1500, even the poorest country in the list of 20 top touristy countries will have the income of over US$ 20 billion from ecotourism in 2020. So, Iran's share
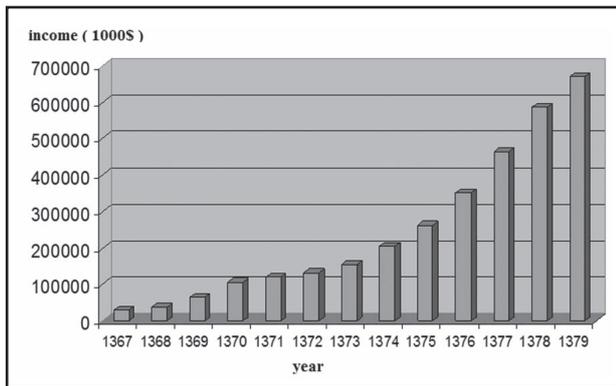
Figure 1 Income changes resulting from foreign tourists in Iran from 1988-2000. (Thousand US$) (Iran Tour and Tourism Department, 2001b)

becomes about US$ 50 billion for its top historical, cultural, and geographic situation. Such income can revolve Iranian economy. Here, the role of IT in this respect will be investigated.

Despite being a country with 7000-year-old civilization and as a founder of fast and formal information transfer in the world (Iran and Information Social,1), this country is a newcomer in the arena of global information system for the historical changes that have led to its underdevelopment. Providing 23 IT indices and technologic capabilities in 2001, World Bank has offered 5 groups of the countries:

1.Skaters: the countries which are heading fast in IT path. They have a superior position for benefiting from informatics revolution, since they have necessary substructures for information, communication, and Internet. Sweden, Norway, Finland, America, Denmark, England, Switzerland, Australia, Singapore, Holland, Japan, Canada, Germany, Austria, and Hong Kong are among those countries. Having private, competitive, fast, and cheap IT is their brilliant feature.

2. *Striders*: the countries which take long steps for digitalizing. These countries have entered information age according to plans and goals and have already created needed substructures for it. New Zealand, Belgium, Taiwan, South Korea, Ireland, France, Israel, Italy, Spain, Portugal, Greece, and Zech belong to this group. Their main feature has been privatizing information and communication industry in previous decade.

3. *Sprinters:* These countries have changed their priorities and try to smooth the way for digitalization. UAE, Poland,

Argentine, Malaysia, Chile, Bulgaria, Romania, Panama, South Africa, Venezuela, Russia, Turkey, Mexico, and Ecuador are in this group. Three above-mentioned groups belong to one third of world countries.

4. Strollers: The countries which have walked in this way for the fun and financial resource limitations and much population don't let them to head in this path consistently. Saudi Arabia, Brazil, Colombia, Thailand, Filipina, Peru, Jordan, Egypt, China, Indonesia, India, and Pakistan are in this group.

5. Starters: they are new comers to global information system. 150 countries like Iran are among this group. In these countries, necessary substructures are not provided for utilizing information age.

The first four groups that make 60% of world population have 97% of global gross production and 99% of ICT expenses while the fifth group which contains 40 % of world population has only 3% of global gross production.

In Iran, National Plan of Development, provided in recent years and under performance, is based on 7 continuums of electronic government, high education, general education, social service development, e-trade, ICT center development, and Persian culture spread. Social service development is an important part of this plan. Developing social services by IT needs substructures that can connect the houses to the global networks. Although many attempts have been exerted for developing telecommunication networks and light fibers, proper substructures for utilizing IT capabilities have not been fully provided. Developing social services for domestic and foreign tourists in the country using present IT capabilities can pave the way for tourism development, increasing Iran's share in global economy.

4 Main Tourism Features Based on IT Uses

Having a unique nature, tourism is distinct from other economic activities because of 10 following features (Williams, 1993):

1. *Instantaneity*. An important tourism feature is its instantaneity, implying that some situations for visiting can occur in only one moment, like observing eclipse in a spot.

2. *Memo ability*. Trips usually can't be forgotten and are happy moments of the people.

3. *Tourism legacy*. Perspectives and sceneries, rich cultural legacies, and historical attractions provide necessary conditions for successful supply of tourism products. Countries with more features like these can attract more tourists.

4. *Coordination*. Successful tourism products' supply depends on the coordination of service quality and quantity regarding market needs.

5. *Temporariness*. Tourism products are temporary since they can't be stored. So the time should be used optimally to make money from the situation because it can't be saved.

6. *Acceptance cap*acity. It implies that with tourism growth in the world, existing attractions and facilities are not enough and pressures on tourism officials for raising them will increase.

7. *Changeability*. Tourism destination develops or changes by the time lapse. It may also widen several times for tourist density.

8. *Competition for more space.* Tourism section competes with others to gain more space for hotels, and recreational centers. It develops easier than others for its pro-environmental features.

9. *Fixed operational costs*. Tourism products costs are mostly fixed. For example, airport or hotel costs, equipped for welcoming tourists without considering their number, are the same for each tourist.

10. *Seasonal demands*. For weather change, holiday times, school closing, and etc tourism is seasonal and it may increase in a season and decrease in another time (Daswi, 2000).

5 IT Systems and Tourism Development

In the second half of 20th century, 3 main technologic fields including computer reservation systems (CRSs) in 1970s, global distribution systems (GDSs) in 1980s, and Internet in 1990 have helped tourism promotion in many ways. Although these technologies appeared with the difference of 10 years from each other, they revealed their significance individually or collaboratively:

1. *CRSs*. Since early 1970s, CRSs were employed in air transportation companies and their spread led to tourism bloom. They regulated tourism markets and determined tourism patterns, providing information banks in relation with tourism needs. They also created major facilities for the intermediates to coordinate reservation affairs (Figure 2). This was only possible regarding fast demand/supply growth and rules change via powerful computer systems.
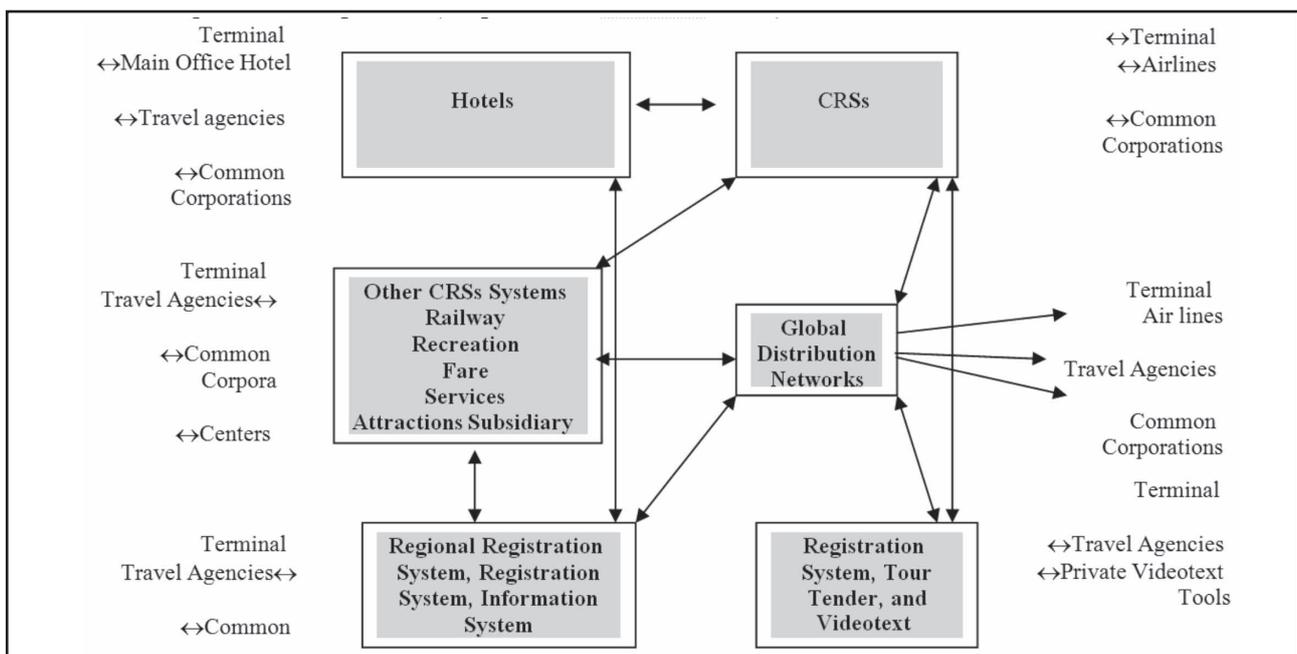

Figure 2 GDSs process (adapted from Lomsden, 2001).

Airlines were pioneers of using CRSs; then chain tour directors welcomed them. Company managers could also use CRSs to control, predict, and sell their products at global level. They improved the extent of their business, profitability, and achievements as well as strategic executive management. Decreasing communication costs and offering smart information on demand patterns, partners, and rivals, CRSs have increased competitiveness.

2. *GDSs*. Since the mid 1980s, developing CDS systems of airlines and their combination, GDSs formed and promoted their geographic cover horizontally (with other airlines) and vertically (by corporation of many services and products like house, cars, train, recreation, and etc). First, companies like This CO and Wiz COM facilitated their correlation and represented their on-line main tourism products. Thus, GDSs could gradually connect touristy organizations using, standardizing, and controlling intermediates by a common global tool. As a circulation system and spine of tourism industry, now, GDSs have provided a standard system for global communication and an electronic canal for directing tourists. At the moment, four systems including Galileo, Amadeus, Sabre, and Worldspan have the major portion of global markets in their own control (e.g. Amadas system owns 4332 airlines, 55 rentable automobile companies, and 162329 terminals and 106394 travel agencies across the world (Buhalis, 1998).

GDSs offer a wide range of vacations and touristy destinations by reservations and ticket provision. Go believes that 4 groups of factors necessitate using computer systems: costs, market, government, and competitors. GDSs should provide the satisfaction of all stakeholders including consumers, travel agencies, and cooperators to yield maximum profit via offering top products (Go, 1992).

3. *World wide web*. Since early 1990s, IT and Internet development provided a new area for human communication, creating interaction opportunities for both suppliers and customers.

Global Tourism Department declared that the success of tourism activities relies on the fast recognition of consumers' needs and providing on time, specific, and comprehensive information for the potential customers. Difference of experiences, motivations, favorites, and social status in tourists from one hand and cost and time importance for tourists from the other hand, give Internet

the chance of revolving consumers' alternatives and service provision. They also enable tourism companies to offer many complex services to satisfy customers. IT revolution directs productive organizations toward flexible markets whose success relies on the features of sensitivity and responsiveness toward the customers. Generally, IT has costs and benefits for tourism development which are summarized in Table 1.

Benefit	Costs
• global distribution of multimedia information • low cost of prepa ring and distributing on time information • 24 hour on-line presence in internet • longer duration compared with ads and posters • decreasing information quality promotion costs and brochure costs • attracting visitors of the website • high transfer speed • low marginal costs • information production by increasing users • intelligent support of the market and designed performances • purposeful development of e -mails correction for informing users • high interaction with possible consumers • the capability of producing social feelings for new applications	• the costs of buying hardware, software, and communication packages training costs of users • internet design and establishment website hosting costs on a real server • maintenance and updating internet service marketing and Domain registration • developing communication trends by internet • commissions for on-line demands by internet • advertisement fees for broadcasting in searching motors • connections with travel sites

Table 1 Cost-benefit analysis of Internet in small and intermediate corporations for tourism development (adapted from Buhalis, 2001).

6 Conclusion

Accelerating trend of tourism development in previous decades is because of IT growth. As a result, the efforts of the countries have focused on the preservation, optimization, and promotion of touristy attractions from one hand and improving information systems and their accessibility from another hand. For having significant touristy attractions and high computer literacy and technologies, Iran has a favorable potential for achieving a good income of tourism. In this regard correct IT applications are inevitable.3 groups of IT technologies like CRSs, GDSs, and Internet should be exerted and light fibers must be developed. The emphasis of 4th Development Plan of Iran provides a good field for tourism growth. To introduce touristy attractions via IT, the following suggestions can be offered:

- Designing and utilizing efficient websites for introducing attractions as a top destination

-Connection of touristy attractions to internet

-Exerting CRSs in all travel agencies in touristy places

-Establishing a large information center in Tehran including all tourism information

- Establishing regional information centers connected to Tehran

The most important point to consider is to believe comprehensive tourism plans, coordinating tourism activities at national level, using scientific advances in IT for introducing tourism potentials, and corporation of all national resources to achieve a proper position in global tourism arena.

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