

Tourist friendly tourism information system

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Abstract: The globalisation of world economy accelerated the processes of regional cooperation in the field of tourism. Slovenia is a small tourist destination with many not yet exploited tourism potentials. For many years there has been extensive cooperation with neighbouring countries and regions in the field of tourism. Because of many differences between regional players in the field of tourism, not substantial progress has been made. Recent initiatives from the tourist players from the Danube region countries promise new developments. Summits and meetings among regional players show that there are creative but scattered initiatives to build an effective and integral tourist information system. In this paper we propose a prototype of a holistic tourist information system that bridges regional differences and establishes a solid base for the tourist information sharing, for the exchange of tourists and for the building of the comprehensive tourism value constellation on the national and regional level.

Keywords: tourism, information, information system, integration, stakeholders

JEL classification: L86, L83

Користи туристичког информационог система за туристе

Сажетак: Глобализација светске привреде убрзала је процес регионалне сарадње у области туризма. Словенија је мала туристичка дестинација са многим туристичким могућостима, које још увек нису искоришћене. Дуги низ година доста се сарађивало са суседним земљама и регионима у области туризма. Због многих разлика међу регионалним актерима у области туризма, није учињен знатан напредак. Недавне иницијативе, од стране туристичких актера из земаља Дунавске регије, обећавају нов развој. Самим тим и састанци регионалних актера показују да постоје креативне, али расуте, иницијативе да се изгради ефикасан и јединствен туристички информациони систем. У овом раду предлажемо прототип холистичког информационог система, којим ће се премостити туристичке регионалне разлике и који успоставља солидну базу за размену туристичких информација, за размену туриста и за изградњу свеобухватне констелације туристичких вредности на националном и регионалном нивоу.

Кључне речи : туризам, информације, информациони систем, систем, интеграција, заинтересовани

JEL класификација: L86, L83

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1. Introduction

The rising complexity of the social systems like tourism, urges the need for a connected, networked and integrated approach to tourism planning, development and implementation. The main reason for such behaviour is a chance to react and respond to the changes in tourist industry and complementary businesses. The second reason develops from the awareness that a tourist is an active actor of the tourism processes, where he or she fulfils his or her needs, expectations and desires. To achieve these goals, the planners of tourism activities of particular destination must know and understand the capacity, features and need for information coverage of the tourist destination.

According to Seddon (2008, 80) only after understanding demand and measuring achievement of purpose from the customer's point of view is it possible to move on to study the flow of work. By setting the right measures for the tourism flow on destination waste cannot cooperation be removed, and tourists can be properly served with quality products, services and information. Integrated measures implanted in the holistic tourism system reveal problems and waste not detected otherwise.

Integrated holistic information system built on value constellation concept is the tool which can be used to measure, monitor and follow progress of a tourism destination on regional and local level. It is generally recognized that tourism data is one of the most accessed data in the Internet. It is true that word of mouth about tourism experiences is slowly replaced by the information via Web. Information and communication technologies have profound effect on tourism industry today through the mobile technology and flexible structure resting on the common denominator: information. The handling of tourism information systems is often complex and perplexed. To satisfy the tourists' expectations it is inevitable to support the tourist in travel planning and decision making. On the other hand, there is a strong need for the quality information from the national and local authorities, SME-s, universities and research organizations. Further, there is a need to develop a destination information system, which will include all stakeholders that participate in the tourism offer. 'Tourism collective memory' as a comprehensive information model should cover Slovenia and neighbour countries.

Technological progress penetrated deeply into the tourism fabric. Since 1980s, Information Communication Technologies (ICTs) have had significant role in transforming tourism internationally. However, the truly transformation effect has been made by the development of the communication technologies. Buhalis and Law (2008) argue that a wide range of new tools and services developed connecting us to the global interaction between people. Even more important is the fact that the whole value constellation is rapidly changing using ICTs. Particularly, the internet as the most widely spread communication tool, is changing conditions of entry into the world of tourist information.

Simultaneously switching costs decrease and transforming distribution channels make prices and competition more transparent. Evidence shows that non-technological innovations in services can also arise from investment in intangible inputs like strategic networking. Plaza et al (2011) attributes the E-tourism innovation networks comprised of micro SMEs have far reaching positive consequences on integrated tourism offerings. Prompt recognition of customer's needs and well developed value constellation chain of new and widely ranged products and services that fulfil tourist's expectations and enable his or her activities in less time is the strategy for future success. New mobile nomads are coming demanding websites that are interesting and informative containing useful information, which is interactive and appealing (Plaza et al, 2011). Buhalis (2008) and Veljković & Ambrož (2009) stated that modern tourists have become more independent and sophisticated and are developing a unique travel style. Besides, modern nomads are becoming very mobile and use the benefits

of corporeal and virtual mobility to the fullest. They want to plan their travel by themselves, and they want their autonomy. Nowadays, information as such can easily be carried around, but is still not really available and accessible for tourists, organizations and other stakeholders (Malaka & Zipf, 2000).

To meet the interests of all tourism stakeholders and their preferences, this paper presents the prototype approach to the realization of the proposed information system. It is based on sharing content, visual, geographic, social, economic, and leisure information among all stakeholders following democratic approach in handling tourism information. It presents the proposed model as a holistic prototype that can be used in the future to build the tourist destination information system.

2. Theoretical issues

Traditionally, destination marketing has been for decades aimed towards the promotion function (Ritchie & Ritchie, 2001). Nowadays tourism destinations become very complex physical, spiritual, cultural and leisure space systems. As a result, during the last two decades, there has been a growing need for a more holistic approach to destination management (Poon, 1993). It is common that destinations all around world compete with one other to attract more tourists. Çetinkaya (2009) sees information and communication technology as the strategic tool in this process. New technologies enable the development of multitasking processes, and new holistic approaches emerge. According to Buhalis (2000) destination marketing organizations see integrated approach to destination information system as important factor of the successful destination management and destination competitiveness. Vengesai (2003), argues the concept of competitiveness has already been applied to different settings like economics, marketing and strategic perspectives, price, quality and satisfaction. Hassan (2000) links tourism destination competitiveness to destination market share, measured by visitor numbers and financial returns.

Contrary, Vengesai (2003) describes destination competitiveness as the ability to deliver the tourist experience that is more satisfying than those offered by other destinations. Attractiveness of a destination is the core factor which reflects the feelings and opinions of its visitors regarding its ability to satisfy their needs and to support their performance. We can argue that attractiveness of a tourist destination is as strong as the support it gives to its visitors. Such a destination will eventually have more visitors than other destinations and tourism flourish and support the development of local community (Vengesai, 2003).

3. Holistic information system of tourism destination

Destination is a complex system comprising of many different stakeholders like public institutions, local residents, tourists, tourist SMEs, public administration bodies, local authorities, and others that are closely networked in tourism networks. Overall experience from the holistic view of a tourist destination is closely linked to the possibility that tourists get access to valuable information about tourist destination. Eraqui & Abd-Alla (2008, 1) argue that good tourism system is composed of information channels not regarding the origin of this channels. These channels include all kind of artefacts and media that comprise the tourism information system.

The information about tourist destination that all stakeholders' share should be considered as a source of international information about destination used to form its holistic view. Destination information generated by the information system, can improve destination management, tourism development, tourism planning and strategic tourism decision-making. Many information systems like DMS, already present the internationally acknowledged advanced thinking of development of travel information (Wei & Jiu-Wei, 2009). In this context, Enright & Newton (2005) argue that industry-level and destination attributes should be included in studies of tourism competitiveness. Their research shows that both business factors as well as tourism attractors form the holistic view of tourism competitiveness. Additionally, they point to the fact that competitiveness attributes may vary across locations depending on product mix and target market segments. This uniqueness must become a part of every networking activity in designing the integral tourist information system.

The information environment is an important factor in the process of developing the efficient and effective information system. It postulates the impact on the behaviour of an individual in three ways: cognitively, physiologically and effectively. This impact attracted attention of several scholars. Many scholars already recognize the importance of organizational behavior of tourists and local residents, which includes at least two aspects: structural, including coordination between departments in tourism destination and the tourism SMEs (Min, 2011). Many other aspects based on the interaction with an environment and on the need for networking on the national, and international level gain utmost importance (Gomez, 2006).

Nowadays, the information landscape experiences continuous transformation. Trends in international tourism over the last decade constantly change and information and communication technology gains overall support for the increased sophistication of tourists. Modern nomads seek greater variety in their travel and expect personalized services to meet their unique needs (Veljković & Ambrož, 2010; Ambrož, 2009). Not so long ago, tourists gained information about tourist destination through word of mouth, books, brochures promotional videos, travel agents and tourist offices. Recently, managers and other stakeholders face the new challenge in promotion of highly complex tourism products and services through information systems. Many detailed profiles from many tourist fields are already available online with easy access and ready to support the decisions of tourist for visiting a particular destination.

Too often information on tourist destination is scattered and one-sided and presents serious obstacle in the process of tourists decision making about visiting the tourist destination. Tourists usually make their decisions to visit particular tourist destination by reviewing the destination attributes. Pühretmair et al (2011) show that data about tourism is one of the most accessed data in the Web. It is obviously the salient input for the tourists decision making what to visit and why. However, the handling of tourism information systems is often a problem because it is complex and time consuming activity.

4. Case based approach to tourism information system

It is very important that tourist information is integrated, clear, substantial, timely and easily accessed. As Eraqui & Abd -Alla (2008, 2) propose three characteristics of tourism information system: (1) unique functions for different kind of information, (2) related information channels, and (3) interdependent channels. Other scholars and managers suggest different approaches in developing quality tourist information system. Pühretmair et al (1999) suggest case-based reasoning approach, which gives tourists the answer to the question: What is available on tourism destination? Case-based approach realizes and communicates through spatial approach using tourist maps. It is very important that information extracted is readable, useful and valuable. This can be done through a holistically planned information system, which functions in a network of human-computer interactions. The base of the holistic information system is a computer application that produces the holistic, integrated and comprehensive information services.

Duran et al (2004) argue that the Internet is more and more emerging as a handy tool of traveling for the tourist industry. It brings products and services to the customer. It is important that web-based information system brings both value and service. Duran et al (2004) argue that two features of tourist information system emerge: (1) administrative that positions tourist objects, and (2) applicable that enables the search for tourist objects. According to Min (2011) two contemporary modes of an information system are in use by tourism enterprises. The first one is based on the information web mainly used in-network marketing, and the second one links organization information system with the tourism demand using layering approach (Sehanović et al, 1998). A holistic information system in regional tourism cooperation is a whole, data intensive, human-computer application system used by tourism enterprises and other stakeholders in different areas within the region or tourist destination. Its existence is based on certain rules, agreements and contracts between all included stakeholders. Practically, this means that the amount of stakeholder's input of data or information conditions, defines the width and the depth of information. It is important to note that such a system has to support tourists' decision-making in travel planning. Further, its role is to relocate and reassign tourism resources between destination areas to maximize the overall benefits (Min, 2011). Such a system can collect, collate analyses, store, and research, transmit and track the overall information flow within the tourist destination.

The holistic tourism destination system emphasises the tourism data mining that allows for the extraction of information from the large amount of data and is a base for multi-dimensional data analysis. An information system follows the holistic concept by integrating all valuable information from all stakeholders in the area. In the final distance, it offers the way to gather the Intranet and Internet information from various sources locally and regionally. It supports consumers – tourists and other stakeholders that develop, plan, and execute tourist activities, products and services in the tourist destination.

5. Potlatch approach to tourism information system

Social exchange in a modern society becomes very important because the modes of material exchange continually improve and enable fast exchange of goods and information. In this context a potlatch is a very important principle of exchange that can be used to build an effective tourism information system. Potlatch is a gift – giving primary festivity and economic system (Dictionary, 2007). It is a special form of communication ritual of North

American Indians. The word “Potlatch” comes from the language of the Chinook tribe and its meaning is “to give away”. During the ritual the chief of a tribe gives away all his material things to show that he is worthy to be a leader. The members of a tribe must accept his gifts. This principle is very useful in the building of the concept of tourism destination information system. Stakeholders that operate in a particular tourism destination give away all the information about their tourism products and services and share them with other stakeholders in the destination who do the same thing.

Such a system has some advantages that can improve the competitiveness and image of tourist destination. It is an information concept that breaks traditional views of information gathering, processing and deploying. Advantage of a holistic tourism destination system is the large amount of information from all tourism relevant sources. The second is the possibility to gather information based on agreed principles and rules that allow for the durability of the data. Such information system can function well, when all stakeholders agree on the principles how to use various application programs that share common base and are unique at the same time depending on the product, services, and destination.

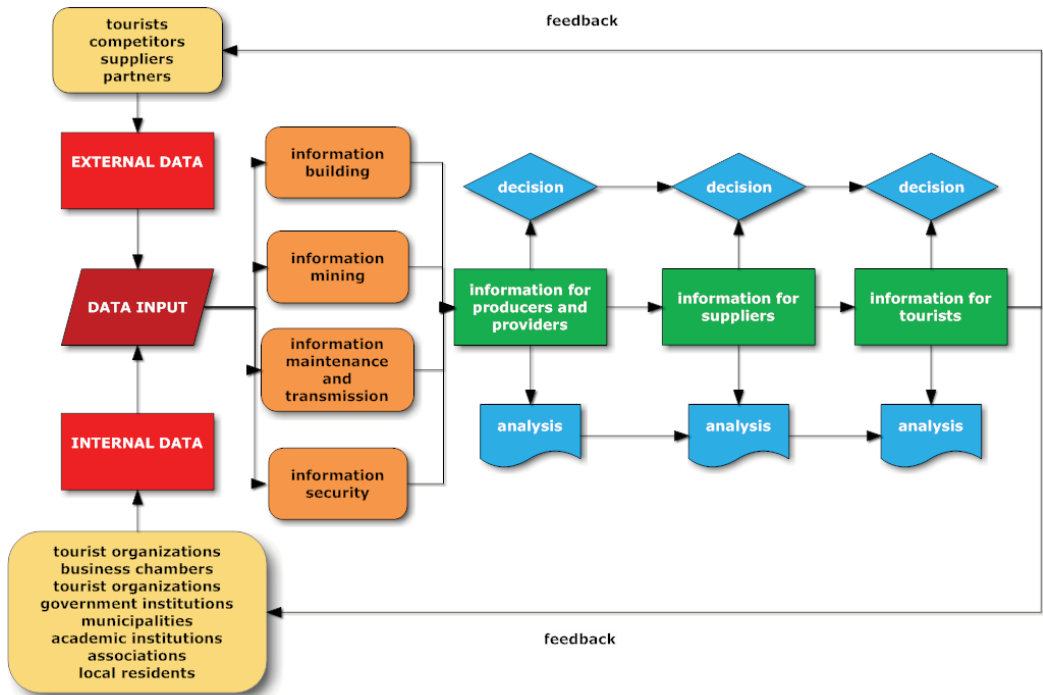
Agreed principles make conditions for the use of various application programs that can make the most of the data bases of holistic information systems. This system offers added value in transformation processing and usage. It allows for higher-order analysis important for the forecasting and development of innovative tourism products and services that build a good image in consumers.

Gathering data and information integrally produces many difficulties and challenges. The building of a value chain between stakeholders needs a lot of trust, empowerment and motivation (Franch et al, 2008). The typical value chain is the combination of services that contribute to the delivery of the tourism product or services (tour organization, accommodation, catering, entertainment, transport). Value constellation chain analysis focuses on the nature of the relationships among the various actors involved in the chain, and on their implications for development such as sustainability and competitively (Giuliani et al, 2005). The stakeholders must see the immediate effect of their cooperation otherwise their motivation can severely damage value chain and builds resistance to cooperation (Ambrož, 2010; Pavlovich, 2003). Dredge (2006) argues for innovative, catalytic producer networks that are flexible and capable of timely response. Only such networks can sustain the satisfactory level of motivation of stakeholders to share data and information. Holistic system lowers cost by allowing addressing the true needs of tourists and by timely and spatially direct access to integrated information.

6. The construction of the prototype of holistic information system

The holistic information system is based on creating a flow that is pulled by real customer orders and on continuously improving the flow. Creating a flow in a holistic information system is creating a movement of information across any value chain. This movement of information should be driven by real customer needs or real customer consumption. The tourists buy products and services from the tourism SMEs and other organizations, the SMEs pull from the network of suppliers. This is a simplified schema of the value chain functioning as a holistic information system.

Figure 1: Flowchart of holistic information system



In the framework of Inter-Municipality Initiative: Cross-border e-Collaboration in the Danube e-Region <http://elivinglab.org/CrossBordereRegion/InterMunicipality/> a meeting was held of all interested stakeholders who would like to participate in the building of the holistic tourism information system in the Danube region. The representatives of business chambers, tourist organizations, universities and government institutions expressed and emphasized the need for the development of the prototype called ‘Slovenia as a holistic tourism destination’. All stakeholders agreed that shared experiments and prototypes can bridge competitive relationships to provide the quality information for tourists. They also agreed that an efficient value- chain is a predisposition for the effective information system. Government organizations expressed the need for a Slovenian tourist information system that would use the experiences of other regions (Donau region) and enhance the cooperation between municipalities. They especially emphasized the need for a cooperation of municipalities in the e-service fields using broad-band connections.

Tourist organizations see networking in the field of information as a core competitive competence in the field of tourism. They see communication and information technology as the efficient intermediary between the tourism products and services providers and consumers. It is important to build an information system whose interfaces are completely understood to work with other products or system without any restricted access to implementation. From their point of view an information system should allow for free access to the tourists that is user friendly. An information system should exploit technological issues like data scanning on mobile info points, sensory presentation of emotional data, and geo-data system. This technological support should provide the platform

for the holistic support for tourism processes. The holistic tourist information system should take in consideration these features:

- Planned differences in e-literacy:
 - There are ‘Digital tourists’ who plan their travel using information technology,
 - ‘Analogue tourists’ who just travel and have the pleasure,
- Simplicity achieved through mobile access: mobile guides, IS based on NFC technology, Augmented reality and QR codes,
- Geo-located use of information,
- E-cooperated with media, local residents and tourists.

It is very important that information system is open to the inclusion of all stakeholders that want to cooperate and use it. The development and maintenance of the holistic information system has a democratic basis of operation. This means that every stakeholder has a responsibility to develop and maintain his own information database that is compatible with other databases in the system. On the other hand, the use of the databases in the information system is conditioned by the active information sharing. All stakeholders can use information from other stakeholders freely if they share their own information.

The representatives of the business chambers emphasized the need for coordination of all activities regarding holistic tourist information systems. They think that cooperation between tourism and hospitality industry is an important pre-condition for the development of integrated information systems. They put forward the idea of e-trade fair, which is an effective promotion tool for all producers of tourism products and products-related tourism and additional promotion for the providers of tourism and complementary services. Additionally, international conferences broaden the international view of information cooperation in the region.

Even universities can have a valuable contribution to the development of a holistic tourist information system. They see their role in information exchange in the field of research of the new trends. The right input in information is a vantage point for building of the comprehensive tourist typology for the region and the basis for the tourist exchange between regions. Valuable input of the information system can be the building of a common academic regional platform based on life tourism laboratories.

7. Conclusion

Regional tourism cooperation is not new. These ideas burst into life when tourism went globally. Severe competition and intensive use of advanced information and communication technologies force countries and regions to cooperate and build mutually benefits from networking. A holistic tourist system has a huge tourism potential. It is a tool for the advancement of higher-level social, cultural and economic cooperation and integration. Additionally, it releases innovative potential that otherwise would not be exploited. Slovenia is a small tourist destination, but full of various tourism opportunities. Its value multiplies in combination with other regions. In the absence of a holistic approach to the usage of tourism capacity, it is not an important tourism player in the region. The reason for this situation is in the absence of the integral approach to e-based promotion of the whole destination and the incapability of quality cooperation in the region. The participants of the round table on regional cooperation confirmed that such circumstances called for new activities that would set to motion new prototypes how to develop a qualitative information system using the comprehensive, integral approach. As we can read from the proposed information system prototype, it could be started and implemented when a comprehensive value-chain in the

region is established. Here we must point to the unique feature of the information system. It can be developed and maintained when stakeholders trust each other and when they take responsibility for the development of their part of a system. The responsible management of their databases gives them the right to access to the other databases that are not public, but very important for their competitiveness.

This article is based on the views of future co-owners of the information system and is accordingly not comprehensive. It evidently lacks the comprehensive study on the specific operational level in the region. Rigorous analysis of the needs, interests and expectations of the stakeholders in the region would reveal the span of problems and challenges that accompany the information system prototype.

That is why the proposed information system is open to all suggestions and views, especially to those that tackle cooperation on the destination and regional level. Besides, in-depth quantitative analysis of the information gathering and sharing is needed to test the democratic way of management of the proposed information system through the equality in sharing the tourist information.

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Received: 07 October 2013 Accepted: 03 December 2013