Modern Web Visualization Concepts of Tourist Destination

Zoran Katanić
Student of the doctoral program at University Singidunum, Belgrade, Serbia

Abstract

Researches in this study refer to practical application of innovative concept of visualization as a concept of tourist services through new information technologies and their impact on quality of tourist agency offer. Furthermore, the study contains a brief overview of the most frequently applied visualization tools and their basic properties. The basic research assumptions in the study are directed towards Internet presentation of commercial tourist offer, enabling spatial experience of a destination, constant availability of information, as well as usage of web and android applications which leave greater impression on potential user of the services than standard leaflets and catalogues. The presented results of analysis have shown that application of modern visualization concepts improves tourist product and visits to destinations. Thus, destinations using modern information systems on their Web sites have better presentation of tourist offer and achieve greater competitiveness on the market.

Key words: *visualization, development, Android applications, Web Design, innovations, modern information systems, quality*
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Introduction

Need for greater application of modern technologies comes from the fact that tourist market is full of numerous offers of various tourist services and destinations, which makes hard to tourist agencies to get to favorable position on the market and makes them struggle on daily basis for potential consumers of tourist services. Also, besides information gathering, Internet is very powerful media for getting new business ideas, analysis of competition, makes a payment, booking etc. much easier. Internet technology has become the most dominant channel of communication (Pejić Bach et al., 2013). It increases flexibility, practicality, economy, real time business is possible, costs of organization and distribution have been decreased, and interactivity with a user of the tourist service has been increased. However, modern tourist demand sets out new standards, which are related to needs for visualization of a tourist destination and application of new web search tools and selection of a tourist offer which will meet modern sophisticated needs of contemporary tourists. If the offer itself creates perception of high quality, a consumer will expect other things to be on a high level, meaning that higher price will be justified in a mind of consumer, since "people do not buy products but expected benefits"(Bakić et al., 2009).

The main aim of the study is to analyze application of web technologies for modern visualization of tourist offer and show their increasing role and importance for decision making process regarding selection of a tourist destination, as well as usage during the stay at the destination and after the stay aiming at increasing satisfaction of tourists.

The study has resulted in hypotheses that application of modern visualization concepts contributes to improvement of tourist product, impact decision making process on selection of destinations to be visited, and that usage of Web applications impacts on creation of competitive, i.e. unique and recognizable tourist offer.

Methodology

A comparative method has been used in the research for comparison of similarities and differences of certain web tools; descriptive method for explanation of significance of various terms; as well as method of analysis and synthesis which explains a role of a Web tools for visualization.

Visualization of the destination

Visualization of a destination is hypothetical picturesque presentation of the destination. Many years ago, Walt Disney said: "you can do what you can dream of". Imagination, i.e. visualization of the goal helps us make longer steps towards achievement of the goal "

When we want to visualize destination we want to travel to, we plan how to travel there, where to be accommodated, what to see, what to buy there. Visualization means that we want our holidays to be the same as in our imagination. Our unaware mind has accepted "the new reality", and consequently, a strong sense of security is needed. So-called ''Wingwave method''[1] is frequently used in visualization for the sake of reaching goals.

Visualization represents a technique of getting pictures, diagrams and animations for better browsing of Web sites. Creation of an event in the destination, which will be attractive for tourists, is done by modern information –communication technology. Mobile communication technologies and infrastructural networking of participants in the destination, together with presence of digital telecommunications, represent technological innovation of enormous importance. Appliance of mobile digital telecommunication creates utterly new media space, creates new conditions for new relations in space. Development of information – communication technologies creates a new profile of a modern tourist, who is more independent, flexible and, naturally, more demanding.

The tourism industry have widely adopted information technology (IT) to reduce costs, enhance operational efficiency, and most importantly to improve service quality and customer experience (Ayed Al Queed et al., 2010). There are numerous applications used for visualization of a destination. Web site design has never been easier. Large number of free software and online services may be accessed on Internet; they enable Web site designing in a very short time, without any knowledge of HTML or other program language. This free software has been designed in such a way to make them a necessity.

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[1]Wingwave is the most effective way of fast relief of stress, fears, mental and emotional blockages and guaranteed success. It develops creativity, self-confidence, mental abilities and emotional flexibility through targeted capacity building of personal resources. It is acknowledged by the Ministry of Health of the Republic of Serbia as a complementary medical method. See more on: http://www.spiritus-movens.com/srp/tdoc/?conid=8 accessed: 22.04.2015.

New mechanisms applied in modern visualization

Company "Operating Systems Group" has created a new mechanism for visualization, modernized browser "Project Spartan" foreseen for Windows 10. Project Spartan enables writing or typing directly on the webpage, possibility to leave comments and documents. Furthermore, Project Spartan, with option "reading list" allows possibility to read whatever you want or to save Web site or PDF file. Option "reading view" helps focusing on the content.

Software Adobe Web Design provides designer solution for print preparation and Web design. Adobe applications allow use of other software in a joint package (Adobe Photoshop, Adobe Dreamweaver, Java Script). The greatest value of the Adobe Web Design Package is independence in creating, controlling and updating of web sites. Visualization which uses traditional practice and experience achieved success faster. In our case, data are packed and visually shown in GIS environment. Visualization is a final result for many types of geographical destinations. It is shown in form of maps or charters. When maps are used, there is a possibility to integrate them with reports, three-dimensional views, digital videos and other digital media. Way how the obtained results will be interpreted depends on the way how the results are presented. Namely, it is important to select appropriate form of presentation. Size and colors need to be adequate in order to understand a map better.

GIS software generates graphic content easier, as well as changes of size, although GIS does not automatically apply all cartography principles while generating content. Application of GIS creates detailed model of a real world displayed through thematic map. Analytic models and methods used in GIS assist tourists to learn more about touristic and recreation offers in the destination, aiming to avoid ecological and social problems. GIS allows policy makers to easily visualize the problems, in relation to existing trends and the natural environment and so more effectively target resources (Kushwaha et al., 2011).

Visualization of a destination by modern multimedia technologies offers absolute spatial experience. In visualization of a destination, it is necessary to find out key topics which will be over group of texts. Topic modeling approach based on Now-Negative Matrix Factorization is used for that purpose. In order to download films to be used in visualization, the following services are used: Rotten Tomatoes API and Movie Reviews.

Contemporary visualization is unthinkable without three-dimensional image (3D). Animations are drawn as a serial of cards. Application of three-dimensional technique and animations, modern GIS packages create realistic "fly through" animations which are sequences of three-dimensional pictures, such as a view from different perspectives. This is a powerful way to display scenery, similar to interactive computer animation used for flying simulation. GIS offers possibility of representing numerous topics through digital cartography layers. Namely, GIS is a toolbox used for design of presentation with clear truthful view. GIS is a multimedia technology offering audio and visual information related to the maps, charters and tables. 3D GIS offer interactive display of large special information, whereas 3D-4K projector is used to show large special information in three dimensions. Synthesis of geo-informative system of GIS and geo-visualization offers better quality of interactive map presentation, including browsing through layers of maps, enlargement or reduction.

Web application provides access to Web via Internet or Intranet network. WWW service allows full use of Internet for that purpose (Vračar, 2007). Web application has to be reliable and precise. Pages on Web application have to be arranged so as to fit needs of users. Interactive means help buyers to find products they are

interested for, provide links to similar pages. Technologies based on Internet actually change rules of the market (Kotler et al., 2006).

Web application contains information on travels and prices which are main motivators for deciding to buy a travel product. In order to make Web application more attractive, its content has to be unique with regards to company or location. Web camera proved to be favorite source of content (Kotler et al., 2011). During preparation phase of the "wales1000things", Visit Wales mobilized entire network of content authors to assist in web site design by providing their photographs, video projections and comments (Morgan et al. 2015).

''Internet has caused great changes in a way how tourist workers advertise their products and how potential tourist gets information on destinations, transportation, accommodation, etc. New technologies also change the tourist experience itself. Device for global positioning give tourists an opportunity to follow their own itinerary in certain town, with a comment designed according to their demands. Cultural institutions visited by tourists offer various media in order to make the whole tourist experience better" (Trozbi, 2012).

There are two types of applications used:

- client-server applications (when a client has to install an application on computer in order to access a server);
- Web application (application does not have to be installed on computer and it may be viewed through Internet explorer, Mozilla Firefox or other browsers supporting html/xhtml/xml.

Web application function on the following system:

- User starts web browser
- Puts a desired term in a browser
- Sends a desired term to browsing software
- Software provides feedback found in a data base to browser
- Feedback becomes visible to a user through Web interface

Web applications dynamically generate a sequence of HTML documents visible due to Web browser. Each and every page is shown to a user as static, but the pages may be changed by application. A user is able to upload data in a Web form given on a page. Applications are divided into sessions. During the session, Web browser shows pages to a user.

Web site should create a platform which may follow, connect and adjust content for the site visitors, as an objective for selective interpretation aimed at inspiring tourists to learn about certain location.

Application of Web browser as interface of the Web application has lots of advantages:

- Web interface offers possibility of using a mouse, keyboard, flesh memory, multimedia, etc.
- Dynamics in interactive communication with users is provided by script languages (Java Script, DHTML)

Advantages offered by server application (visualization) are:

- Savings of space and energy
- Easier system upgrading
- Better system utilization
- Long term and reliable platform
- Simple maintenance

Server visualization is designed for users with greater number of servers, users who expect to increase number of servers, users with less people maintaining the system and users who need great reliability (S&T).

Design and creation of Web application supports strategy of a company, works in line with demands imposed by the surrounding, and is very demanding assignment for every manager (Dess, 2007). In order to have visualization of a destination as comprehensive as possible, it is necessary to collect enough information so that the place presented is shown realistically through chosen computer programs. It is necessary to collect spatial information in the fields and photographs for realistic presentation of the destination.

If we want to include gastronomy specialties in visualization which offers description of dishes from different restaurants, we will use Foodspotting API.

Wessel (2006) gives two main reasons for popularity of Web GIS:

- Small companies and organizations, often met in scope of tourist destination, are not in position to purchase and manage large GIS platforms;
- By Web GIS, it is possible to include large number of resources encountered on the Web.

GIS application may be installed on PDA devices and mobile phones with Android operational system (figure 1).

Figure 1
GIS application for android telephones

Source: www.diamondtravelguide.com

These application offer overview of:
Streets and street names, water flows, etc.

- Navigation, zooming, previous navigation with maps
- GPS for identification of present user's location
- Transportation lines from starting to destination point
- Interactive overview
- Visual search of tourist offer, restaurants, hotels or other locations based on given criteria about location type, category etc. (Biuk-Aghai, 2003).

Mobile phones with Android system use application named Android – Electronic tourist guide (figure 2) which contains textual, graphic, audio and video content about tourist facilities in vicinity of a location where a tourist is at the moment.

Figure 2
Electronic tourist browser
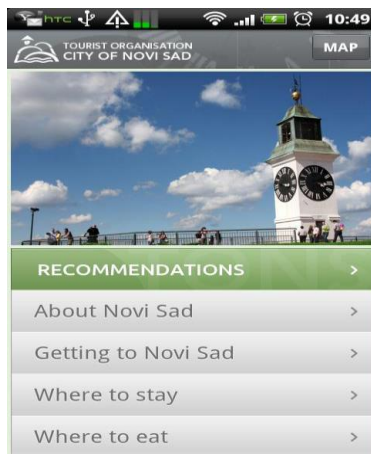
Source: www.google.rs

Besides for Android, the application has recently become available for the Apple operation system Los. A tourist guide is being designed which will, on tablets and in several languages, provide explanations on tourist attraction next to which tourist drive by.

Results of research

Rapid development of information and communication technologies has greatly impacted on change of performance of tourist agencies and all other providers of the tourist services. As the offer grew, the needs of service users became more complicated, and demands were more complex and sophisticated. Study research has shown that creation of preferences may be achieved through provision of multiplied sense experience by imaginary design of a tourist product and well-planned ambient, so that visualization may provide more realistic experience and thus draw attention of potential consumer. The question is how to facilitate browsing of such visualization overview, so that it is not too complicated for an ordinary consumer, but to be more inspiring, entertaining and available at any moment. The given Web and Android applications open a door to a new era for promotion of tourist services, as well as a new field for scientific studies.

Conclusion and discussion

New technology has changed entire platform and created a new generation of applications supporting business activities. Application of modern technologies in practice has changed lifestyle, habits of participants in digital connection, consumers and companies, all that in a cheap manner. Technology is used to speed up business operations, do better product advertising, improve relationship with buyers and ensure profit growth.

Globalization has caused numerous positive changes in tourism through Web design and Web information offer. Using modern tools, the consumers in tourism have become better informed and more actively participate in process of spending and production of a tourist product, thus gaining valuable experience in creation and active participation in visualization process.

Modern innovations have improved tourist business activities, getting a significant position in creation of tourist information management systems, movability of tourists

within destination, creative habits, consumption, and increased motivation of visitors. Visualization on the Web and application of multimedia promote greater number of destinations.

Further research may be directed towards new application design. Thoughtful and planned interpretation of visualization contents will provide tourists with better understanding of value of resource in the destination. Finally, visualization on Web increases number of students visiting a destination.

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About the author

M.Sc. Zoran Katanić was born in Kosovska Mitrovica in 1962. He graduated economy and master studies at the Economics Faculty in Priština. He is a student of the doctoral program at University Singidunum, Belgrade, Serbia. He is an author of several scientific and professional papers. Currently lives in Vrnjacka Banja. Author can be contacted at **mobilshopkm@yahoo.com**