Vladimir S. Tikunov^{1*}, Vitaly S. Belozerov², Stanislav O. Antipov³, Cui Weihong⁴, Dorjjugder Purevjav⁵

- ¹ Faculty of Geography, Lomonosov Moscow State University, Moscow, Russia; Leninskie Gory, 1, 119991.
- * Corresponding author; e-mail: tikunov@geogr.msu.su
- ² North-Caucasus Federal University, Stavropol, Russia; Pushkina, 1, 355029, e-mail: vsbelozerov@yandex.ru
- ³ North-Caucasus Federal University, Stavropol, Russia; Pushkina, 1, 355029, e-mail: antistas@yandex.ru
- ⁴ Institute of Remote Sensing and Digital Earth, China, e-mail: wh8cui@163.com
- ⁵ International Institute for the Study of Nomadic Civilizations, Mongolia, e-mail: purevjav_st20@yahoo.com

GEOINFORMATION TECHNOLOGIES IN THE PROMOTION OF TOURIST DESTINATIONS IN THE ZONE OF THE GREAT SILK ROAD

ABSTRACT. To date, travel portals represent the most promising tool for promoting tourist destinations. Compared to traditional print media, their main advantage is the ability to access a wealth of information, services, to make online reservations, to create package-tours, and to obtain interactive representation of tourist sites. The paper discusses tourism demand for destinations of the zone of the Great Silk Road applying key statistics of the Yandex search engine queries. A comparative analysis of tourist destinations portal data has been conducted based on the following criteria: availability of multilingual information, interactive maps, self-guided tour planners, and information about attractions, tours, and accommodation facilities. In order to attract a large number of tourists and to successfully implement the project "Silk Road," it is necessary to establish a common trans-national tourism portal which would include information on tourism opportunities in all countries.

KEY WORDS: travel portals, GIS in tourism, geoinformation monitoring in tourism, tourism of the Great Silk Road.

CITATION: Tikunov V.S., Belozerov V.S., Antipov S.O., Cui Weihong, Purevjav D. (2017) Geoinformation technologies in the promotion of tourist destinations in the zone of the Great Silk Road. Geography, Environment, Sustainability (GES Journal), Vol. 10, No 1, p. 44–52.

DOI: 10.24057/2071-9388-2017-10-1-44-52

INTRODUCTION

The Great Silk Road played an important role in the development of world civilization. Besides the basic functions, e.g., trade, the Great Silk Road was the conductor of technological developments connecting different cultures and religions.

The interest in the history of the Great Silk Road has being growing from the beginning of the 1990s with the emergence of the idea of international cooperation in the field of economy, science, and tourism. In 1994, the World Tourism Organization (UNWTO) in cooperation with UNESCO, hosted the first international meeting

"Great Silk Road," the results of which were incorporated in the Samarkand Declaration. defining the main directions of development of tourism. In the same year, the UNWTO unfolded an aggressive promotion of the "Silk Road" project at the largest international tourism fairs: FITUR (Madrid), ITB (Berlin), and WTM (London). The international forums in China and Japan also became important events; there, the marketing plan of the project has been established and a tourist brochure has been created based on the results of the research on tourist and recreational potential of the territories [Mirzaev, 2004]. The UNWTO General Assembly in Istanbul (Turkey) adopted a proposal for a 26-episode movie-series about the sights and roads of this ancient way.

According to the UNWTO, it is the longest tourist route in the world. It covers Europe, Asia, and Africa, and connects three oceans: Pacific, Indian, and Atlantic. The route passes through the countries whose area is 55.4 million sq. km, or 43 % of the land area of the Earth, the population is 4.7 billion people (66.9 % of the world population), and the combined GDP is 27.4 trillion dollars (53.6 %) [Aleksandrova, 2015]. The strong point of the project is a combination of unique historical, cultural, and natural resources, which create the basis for an extremely diversified tourism potential under the umbrella brand "Silk Road" [Aleksandrova, 2015].

Russia has also been included in its implementation. The Ministry of Culture of the Russian Federation in 2013–2018 has committed to provide for the formation of historical and cultural tourist route "Great Silk Road" by engaging in tourist turnover monuments of history, culture, and archeology.

Despite the efforts made by international organizations and individual states within the framework of the project "Silk Road," at the present time there are a number of problems related to visa procedures, tourism infrastructure, and information support for tourists.

Information availability for tourists became enhanced with a guite rapid integration of information technologies in the sphere of tourism (the emergence of reservation systems for tickets, hotels, and tours, and tourist websites and portals). With regard to tourism, there is even a special term – *E-Tourism*, which refers to the introduction of information technology to improve efficiency in the field of tourism activities [Buhalis and Deimezi, 2004].

MATERIALS AND METHODS

Modern tourists seek information about destinations that they want to visit and plan their trip in detail, using search engines. Statistics on key phrases used by search engines allows assessing the demand for a destination and its tourist appeal.

Tourist queries in the Yandex search engine from 12.01.2015 to 12.01.2016 provided the statistical base for the study. Since the target audience of Yandex is users of Russia and the CIS countries, the statistics reflects the tourist attraction destinations for these countries only. After processing the request, the search engine produces a list of major sites. As a rule, tourist information about the destinations is located on the countries' travel portals.

Travel portals represent an advertising platform and have three main functions: to provide information on tourism opportunities in the territory, to facilitate the initial interest of potential tourists, and to plan travel. In addition, tourist destination portals have a certain number of advantages over other methods of promotion of tourist destinations, namely:

- coverage of a large number of potential customers;
- low cost of advertising and, consequently, the funds spent on client attraction;
- combination of different types of information (text, graphics, audio, video);
- ability to quickly update information;
- capability to communicate with the customer;
- direct internet sales; and
- absence of time-of-day restrictions.

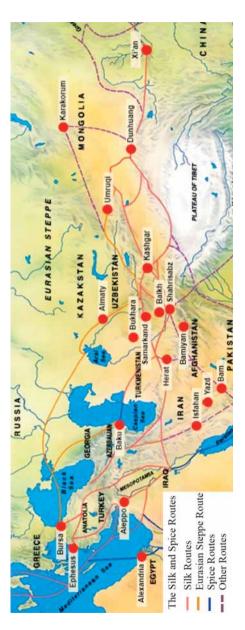


Fig. 1. The routes of the Great Silk Road Source: http://cf.cdn.unwto.org/sites/all/files/silkroad-map-unwto.jpg

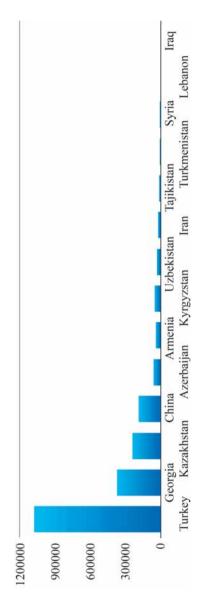


Fig. 2. The Yandex search engine tourist key requests

47

For the end-user, i.e., the tourist, a tourism portal must serve as a site of a detailed planning of the trip. Therefore, the most comfortable travel portals are those that provide information about the main attractions of a destination and have online booking of hotels and tours, interactive maps, and planners for self-guided tours. The paper analyzed the travel portals based on the criteria listed above

The territorial scope of the study is limited to the main section of the Silk Road presented on the site of the UNWTO, which includes fourteen countries: Azerbaijan, Turkey, Armenia, Georgia, Kazakhstan, China, Kyrgyzstan, Uzbekistan, Iran, Tajikistan, Turkmenistan, Syria, Lebanon, and Iraq (Fig. 1).

RESULTS

Searches for tourist destinations of the Great Silk Road are distributed unevenly. Four groups of countries can be distinguished among them. Turkey belongs to the first group with 1,077,008 gueries (Fig. 2). Five destinations in this country comprise 66.8 % of all gueries related to tourism in Turkey: Kemer (287,003), Side (204,927), Alanya (103,897), Marmaris (80,292), and Bodrum (44,394). All of these destinations have a combined form of tourism, which consists of beach-bathing, historical, and cultural. The destinations of historical and cultural tourism include Ankara (42,850), Pamukkale (30,398), Cappadokia (12,906), and Denizli (10,067).

The second group of countries includes Georgia, Kazakhstan, and China. They account for 37.8 % of all travel requests for the Great Silk Road. Georgia is the second most popular country among all the countries surveyed and the first in its group; it had 370,647 queries. The most of search queries associated with this country are for vacations in Batumi (150,806), gastronomic (7,606) and wine tourism (17,603), historical and cultural destinations of Tbilisi (12,182), and Rabati Fortress in Akhaltsikhe (3,846).

The searches of the third group of tourist destinations account for 6.8 %. These include Azerbaijan (59,704), Armenia (41,755), Belarus (50,176), Uzbekistan (31,042), and Iran (21,337).

The fourth group of destinations does not enjoy tourist attraction for several reasons:

- unfavorable location relative to countries generating tourism flows;
- low level of development of tourism infrastructure; and
- difficult political situation.

There is no common transnational portal for the Great Silk Road; only an interactive map of the cities along the Great Silk Road exists. However, Table 1 shows that virtually all of the participating countries have their own travel portals. The exceptions include Iraq and Syria, information about which can be found on other travel sites, e.g., tripadvisor.com and lonelyplanet.com. The rest of the countries have at least one travel portal and, in some cases, three (Georgia, Turkey, and Tajikistan).

An important condition for attracting foreign tourists to a destination is the availability of information translated into different languages. In this regard, portals targeting a wide range of foreign tourists are: azerbaijan. travel (Azerbaijan), visitgeorgia.ge (Georgia), and welcomeuzbekistan.uz (Uzbekistan). In addition to English, they present information in German, French, Russian, Spanish, and other languages. This expands significantly the geography of potential tourists.

Information about the sights allows tourists to learn more about tourism features and their history and to see their images. In the end, it serves as a tool to attract tourists, showing the main advantages of the destination relative to the others. The lists of attractions are available on the most portals discussed.

Marketing through web sites provides unlimited potential for advertising, where

Table 1. The list and functionality of travel portals of the countries in the zone of the Great Silk Road

			•	•			
	Web sites	Languages	List of the main tourist attractions	Availability of an interactive map	Independent travel planner	Tours	Accommodation facilities
Azerbaijan	http://azerbaijan.travel	Azerbaijani, English , Russian, French, Turkish, German, Chinese	+	+	+	+	+
	http://www.atoz.az	English	+	+	+	1	+
Armenia	http://tourismarmenia.org	English	1	+	1	1	+
	http://www.armeniainfo.am	English	+	_	-	_	+
Georgia	http://georgia.travel	Georgian, English, Russian	+	_	1	_	_
	http://www.exploregeorgia.org	English	+	+	+	+	_
	http://www.visitgeorgia.ge	English, German, Italian, French, Spanish, Russian, Japanese	+	I	I	+	+
Iraq		1	-	-	1	ı	_
Iran	http://iranstravel.com	English	+	_	1	+	+
Kazakhstan	http://visitkazakhstan.kz	Kazakh, Russian, English, German	+	_	1	+	+
Kyrgyzstan	http://www.kyrgyzstantravel.net	Russian	+	_	-	_	_
	http://www.triptokyrgyzstan.com	English, Russian	+	+	-	+	+
China	http://www.chinatravel.com	English	+	_	+	+	_
	http://www.chinatraveldepot.com	English	_	_	+	+	+
	https://www.travelchinaguide.com	English	+	_	+	+	+
Lebanon	http://www.destinationlebanon.gov.lb	English, French, Arab	+	_	1	_	_
Syria	l	I	_	-	1	_	_
Tajikistan	http://www.traveltajikistan.net	English	+	_	_	_	_
	http://tajiktourism.com	English	_	_	_	_	+
	http://visittajikistan.tj	English, Russian, Tajik	+	_	-	-	+
Turkmenistan	http://turkmen-travel.com	English	+	1	1	+	+
Turkey	https://turkeytourtravel.com	English	_	_	_	_	+
	http://www.travelturkey.com	English	_	_	_	_	+
	http://turkeytravelguide.com	English	_	_	_	_	_
Uzbekistan	http://www.visituzbekistan.travel	English	+	ı	ı	+	+
	http://www.welcomeuzbekistan.uz	English, German, French, Spanish, Korean, Russian	+	I	I	ı	+

the text can be combined with images, interactive maps, animations, video, and audio. The basic idea is to create the desired image of a specific tourist destination in the minds of potential visitors. One of the best ways to achieve the best visual effect is realized with the help of maps. Maps represent essential resources for spatial transmission of information and creation of location images [Kraak and Brown, 2001]. That is why the maps play an important role in the transmission of information about the world. There is a great variety of the uses of maps in the travel portals. However, some websites of the countries where tourism is the main source of income are still not using maps; or for the most part they are very simple, static. Scanned paper maps, despite their shortcomings, are still in high demand, but it is only a matter of time. In the near future, static maps will become rare, as they will be transformed into interactive formats [Vasiljevic et al., 2009]. Modern technology, including computers and the Internet are a very effective means for the presentation and dissemination of geospatial data. The main advantage of the Internet in respect to tourism business is that it allows the client to access much easier and directly a very large volume of relevant information and to visualize a destination [Vasilievic et al., 2009]. For example, tourists can plan their route and points of interest, get addresses of restaurants and hotels and photos, or move on to other sites [Kraak and Brown, 2001]. As a result, an interactive travel map allows the end-user to make a virtual tour without leaving home [Kariotis et al., 2007]. And now there is indication that a growing number of tourism organizations recognize the usefulness of interactive maps on the Web

In our study of the 24 examined portals, interactive maps can be only found on

five: azerbaijan.travel, atoz.az (Azerbaijan), tourismarmenia.org (Armenia), exploregeorgia. org (Georgia), and triptokyrgyzstan.com (Kyrgyzstan).

A self-guided tour planner provides a service of automated construction of routes with a choice of tourist facilities. It focuses more on automobile and flashpacker tourism. This function is implemented on all of China's and Azerbaijan's portals, as well as on exploregeorgia.org (Georgia).

Online services for booking tours and hotels are not represented on these tourist portals. Therefore, we analyzed the availability through the potential to use third-party sites. Countries with a low level of interaction of travel agents with the state include: Armenia, Lebanon, Tajikistan, and Uzbekistan, because the portals of these countries do not provide information about travel agencies, travel services, and vacation packages.

CONCLUSION

The most effective method of promoting the creation of tourist destinations is portals on the Internet. To attract a large number of tourists and to successfully implement the project "Silk Road," it is necessary to create a transnational tourist portal which would include information on tourism opportunities in all the countries involved. At the present time, it is necessary to use several travel portals that differ in the amount of information, design, and functionality, to plan a "Silk Road" journey.

ACKNOWLEDGEMENT

The study was supported by a grant of the Russian Foundation for Basic Research (projects 16-06-00179 and 17-55-53109). ■

REFERENCES

- 1. Aleksandrova A. (2015) The Great Silk Road: geopolitical, geographical, and economic aspects of the design of a cross-border tourist route. Science. Innovations. Technologies, N 2, pp. 68–77, (in Russian).
- 2. Buhalis D., Deimezi O. (2004) E-tourism developments in Greece: Information communication technologies adoption for the strategic management of the Greek tourism industry. Tourism and Hospitality Research, N 5, pp. 103–130.
- 3. Kariotis, G., Panagiotopoulos, E., Kariotou, G., Karanikolas N. (2007) Creation of a digital interactive tourist map with the contribution of G.P.S. and G.I.S. technology to visualization of the information. Proceedings of the XXIII International Cartographic Conference, pp. 1–17.
- 4. Kraak M., Brown A. (2001) Web Cartography: Developments and Prospects. London: Taylor & Francis.
- 5. Mirzaev R. (2004) Geopolitics of the new Silk Road. Moscow: Izvestiya, (in Russian).
- 6. Vasiljevic D., Markovic S., Hose T., Basarin B., Lazic L., Stojanovic V., Lukic T., Vidic N., Jovic G., Janicevic S., Samardzija D. (2009) The use of web-based dynamic maps in the promotion of the title Loess Plateau (Vojvodina, Serbia) a potential geotourism destination. Geographica Pannonica, N 13 (3), pp. 78–84.
- 7. Zonn L. (1990) Place images in media: portrayal, experience, and meaning. Maryland: Rowman & Littlefield Publishers.

Received on January 17th, 2017

Accepted on February 9th, 2017



Vladimir S. Tikunov is Professor, D.Sc. in Geography, Head of the Laboratory of Complex Mapping, MSU Faculty of Geography, and Director of the Center of the World Data System for Geography. He is Professor Emeritus of the Lomonosov Moscow State University. He lectured at a number of national and international universities. He has led a number of Russian and international projects. His work has been used in many thematic maps and atlases: National Atlas of Russia (Editor-in-Chief of Vol. 3), Environmental Atlas of Russia, Atlas of Socio-Economic Development of Russia, Atlas of the Khanty-Mansi Autonomous District – Yugra, etc. He is a recipient of the D.N. Anuchin Award

for his work in mathematical cartographic modeling. He is also a recipient of the Award in Science and Technology of the Russian Federation Government for the development of environmental and natural-resources atlases of Russia. He was Vice-President and, currently, is Chairman of the commission of the International Cartographic Association. He has been a member of the editorial boards of 14 Russian and international journals. Since 1994 he has been organizing annual international conferences InterCarto-InterGIS that take place both in Russia and abroad. He published over 500 scientific works, including 21 monographs, textbooks, and manuals in 28 countries of the world and in 14 languages.



Vitaly S. Belozerov is D.Sc. in Geography, Professor, Acting Director of the Institute of Mathematics and Natural Sciences, Head of the Department for Socio-Economic Geography, Geoinformatics, and Tourism, and Vice Provost for Academic Affairs and Academic Development of the North Caucasus Federal University. He has led a number of Russian and international projects. The results of his research have been incorporated in different atlases: The Ethnic Atlas of the Stavropol Region, Migration Processes in Russia, The Educational System of Stavropol Territory, etc. He is Regional Chairman of the Community Advisory Council for Migration under the Department of the Federal Migration Service of Russia for the

Stavropol Kray. He is the editor of one and a member of the editorial boards of four scientific journals. Since 1998 he has organized eight international and national conferences on the issues of resettlement, ethno-demographic and migration processes, and geoinformation monitoring. He published more than 150 scientific works, including eight monographs and textbooks.



Stanislav O. Antipov is Teaching Assistant at the Department for Socio-Economic Geography, Geoinformatics, and Tourism of the North Caucasus Federal University (NCFU). He is one of the organizers of the annual events at NCFU: International Day of GIS and International Migrants Day. He is a participant of Russian and international conferences and competitions, for example, the ESRI Conference in Russia and the CIS and InterCarto-InterGIS "Sustainable Development of Territories: GIS Theory and Practical Experience." He has been involved in the studying of tourist destination and the application of GIS technology.



Cui Weihong is Full Professor and PhD student supervisor at the Institute of Remote Sensing and Digital Earth (RADI), Chinese Academy of Sciences (CAS). He is Member of the International Eurasian Academy of Sciences (IEAS), Secretary General, member of presidium and member of standing committee of the China Science Center of the International Eurasian Academy of Sciences (IEAS, China). In 1986–1990 he was Associate professor of Urban Planning Department, Virginia State University (USA). He is a recipient of a number of China's national Scientific and Technological awards. He has published over 200 papers and seven books.



Dorijugder Purevjav since 2002 works as a scientific researcher on Minority cultural issues and English translator at the International Institute for the Studies of Nomadic Civilizations (IISNC), UNESCO. At present she is the Director of IISNC. In 2013 she received her PhD degree on Medieval language correlation between Mongolian and Turkish languages. She has been coordinator of IISNC's research programs on "Comparative Studies of the Civilizations" (2003–2005), "Comparative Study of National Minority" (2002– 2005) and "Culture, Ethnography and Anthropology at the Borderland of Mongolia and China" (2006-till now). She has published more than 8 scientific works, including 1 monograph.