A MOBILE APPLIKATION OF REGIONAL TOURIST ROUTES

МОБИЛЬНАЯ АПЛИКАЦИЯ РЕГИОНАЛЬНЫХ ТУРИСТИЧЕСКИХ МАРШРУТОВ

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Abstract: *It is impossible even imagine tourism development without using modern innovative technologies. The modern* ***WEBGIS*** *and Mobile systems allow putting in an absolutely new light the country's tourist potential.*

The tourist routes, tourist facilities and infrastructures indicated on the digital interactive geo-information map (GIS) with textual and visual (photo, video) information, which are integrated on the tourist web-portal and in the touch-screen devices (cell phones, graphics pads, smart-phones) make the mentioned information available in any country of the world.

The Center of Geographic Information of Georgia has developed a mobile application ***"TravelGIS"*** *for the mobile devices operating on the platform of* ***Android*** *and* ***IOS****, which have no analog in the world. The mentioned application is designed in three languages (Georgian, English, Russian) and represents the information-communicative means for tourist organizations (companies and tour operators), tourist destinations and for promoting the whole country's tourist potential. Any interested person can find and select on his own cell phone the information by any desired criteria – country, region, Tourist Company, infrastructure unit, type of tourist services, duration and complexity).*

KEY WORDS: MOBILE APPLIKATION; TOURIST TOURE; CENTER OF GEOGRAPHIC INFORMATION

1. Introduction

Development of the world tourist market fosters search of ways foe effective development of tourism. At present stage, the information technology and software tools become far more widespread in tourist industry. The activities on forming, promoting and marketing of tourist product become impossible without the adequate information management.

GIS – is a modern computer technology for mapping and analysis of real-world objects, as well as developments that took place on this planet. This technology allows combining the work with a database, for example, the query and statistical analysis with the opportunity of a full-fledged visualization and geographical analysis provided by the maps. These opportunities set GIS apart from other information systems and present unique opportunities for its use in tourism.

The GISs vary in data domain of information modeling, for instance, urban GIS, environmental GIS and so on; among them the land information systems are widely used. The problem orientation of GIS depends on those problems (scientific and applied) which are solving within it, including inventory of resources (including cadastre), analysis, assessment, monitoring, management and planning, and support for decision-making. The integrated GISs combine the functional capabilities of GISs and the digital image processing systems (remote sensing data) in a uniform integrated environment [2].

2. Preconditions and means for resolving the problem

The GIS technologies are used in various fields of man's activity: geodesy, land resources management, urban management, assessment inventory, planning of forest resources, landscape ecology, and fire probability.

GIS helps to improve the quality of life through the use of desktop mapping application of the GGP Systems Company. The Project enables to estimate a quantity and availability of the existing recreation areas in the open air.

At the present stage, the GIS technologies are actively used in touristic designing and when organizing exploitation of tourist resources and tourist industry venues. The Google Earth service allows traveling by interactive map of the planet, which is created from the ideally "sewn" to each other satellite imageries with a detailed three-dimensional visualization. On the interactive world map it is possible to study any section and find any point (including by searching), look more closely at the area around it, and, if necessary, even to map an optimal route. When necessary, it is possible to fly over the territory at a specified height and speed, measure the distance, work with GPS and create our own map by laying the own objects on the original map ofGoogle Earth.

There are available on the Internet the interactive maps of some cities, and we shall note that some of them are prepared at a very high level, but most of them still leave much to be desired. The GISs play a special role when developing the projects of long-term planning of tourism development in the region. A peculiarity of geo-informational approach in working out the programs for regional tourism development is creation of a uniform intellectual system, which keeps together: geo-data base, actual non-uniformly scaled digital mapping bases and satellite imageries of the average and high solution, as well as materials of video-observations; methods and technologies of the automatic spatial-temporal analysis of monitoring and modeling; modern geo-portal solutions ensuring the publication and internal use of spatial information through the WEB-technologies [3].

Combination of rich cultural and historical heritage of the Imereti region of Georgia with its natural-resource potential promotes the development of various types of tourism in the region: mental-patriotic; rural; agrarian-ethnographical; children's and youth; business and scientific; eventful; winter tourism; spa and health tourism and so on.

The development of tourism in the Imereti region is largely dependent upon the effectiveness of government regulation and support of travel industry. For the use of tourism as one of the directions of structural economic conversion, it is necessary to increase the effectiveness of regional policy in the field of tourism, strategic planning of tourism development on the basis of systems approach, use of the program-target, design methods of management, and mechanisms of the state-private partnership. We believe that, at present tourism did not reach the required level of development for influencing the economy of the regions.

One of the topical issues of tourist activities in the regions is an organizationof recreational spaces in the suburban zone for urban residents during weekends and public holidays. In this context, it is necessary to offer the scientifically justified programs for distribution of visitors on the territory of suburban zone. Geographical Information System, which contains information on capabilities and peculiarities of a particular territory, should allow creating the project of exploitation of suburban recreation zones. Information provided by Geographical Information System should be divided into the layers dependent on lines of its application:

natural-landscape, historical-cultural, transport, lodging facilities services and so on [2].

The conducted analysis of GISs developed in various regions of the country enables us to conclude that at present in Georgia, the scientific-practical activities on introduction and application of geo-information systems in the field of tourism for planning and monitoring of activities is not developed yet. With creation of prospective development programs in Georgia's regions, the technologies should become the essential foundation of a uniform tourist-recreation system of Georgia.

There is established in Georgia a non-governmental organization Geo-Information Center of Georgia (TravelGIS), which is aimed at promoting the development of tourism infrastructure [3, 4]. The main direction of the activities include as follows: creation of the National Geo-Information System of Tourism; the continuous safety monitoring system of the group and individual tourist routes across Georgia by using the GIS and GPS technologies; organization of virtual trips on the country's tourist routes for domestic and foreign travelers.

The modern GIS technologies allow creating the geo-tourist GISs, in other words, the mass integrated data of tourism for organizing the tourist activities. Each traveler by using the materials of such GIS will be able to quickly accept any information in the form of maps, digital models, graphs, diagrams and other modes of visualization. The specialized tourism GIS optimally has four databases: tourist resources, service characteristics, tourist statistics, and geographical information. The development of the project of a particular GIS is carried out, as a rule, by the group of various-profile specialists engaging in work the additional executives at different stages. These stages comprise: formulation of goals and specification, determining the organizational resources and restrictions, generation and assessment of alternative projects, integral estimation of costs and profit.

Threemaindevelopmentstages:

– evaluation of the goal and resources (description of the goal and consumer needs, description and assessment of required data and methods of gridding, inventory of sources and specification of data files, evaluation of the system's specification);

– generationandassessmentofalternativeprojects (descriptionoftherequirementsofequipmentandmathematicalsupport, feasibilityandcostsevaluation, descriptionandassessmentoflegalandpoliticalaspects);

– integral estimation of the systems' specification (final assessment of profit, costs and impact).

Aggregate of control means (a command menu, toolbars, pictograms, buttons, dialog boxes, etc.), which are used for interaction of user with the geo-information system, forms the user interface of GIS. By using these control means, the user carries out certain functions, runs applications, adjusts the required mode of operation (for example, selects the unit of measurement) and so on.

With the purpose of promoting the tourist resources of the country's regions, the Geo-Information Center of Tourism has developed an application of tourist routes TravelGIS for the **Android** and **IOS** mobile phones. The mentioned application is designed in three languages (Georgian, English, Russian) and it can be used for choosing the required tour by some parameters – visited country, Tourist Company, type of tour and others. The tour chosen in such a way "opens' on the electronic map on the display of your smart-phone in the form of linear object. The tourist resources (the monuments of cultural heritage, natures, museums, etc.) as well as the objects of tourist infrastructure (hotels, food-service objects, camping and picnic sites, etc.) are designated on the electronic map in the form of point objects. After pressing any of them on the smart-phone display, there will "open'" the photo of this particular object and displays textual information. Here, on the electronic map, by using the GIS technology, you will be able to detect precisely your location and thereby to exclude the possibility of deviation from the route, and to ensure tour safety.

At present, the market of geo-information services is actively developing. It is necessary to create the national geo-information system on the basis of regional GIS systems, and to integrate it in the world geo-information system of tourism. The regional GIS system should contain the actual objects of tourism shown on the tourist geo-information map with the appropriate geo-information data, as well as with visual and textual information.

In accordance with the regional economic policy and on the basis of integrated territorial planning, the investment projects of tourism development in the regions should be accompanied by implementing complex measures, and first of all, by the creation of the effective geo-information map containing the map material, the objects of the world's cultural heritage, conservation areas, national parks, road conditions, lodging objects, internal transport and so on.

The wide application of geo-information technologies should significantly foster the expansion to the required level of territorial planning, and therefore to foster the increasing validity of made management decisions, including related to the tourism development [1].

3. Conclusion

In this context, it would be advisable to develop the program of the recreation tourism development in the Imereti region on the basis of using the geo-information technologies, which should envisage:

- study of natural monuments and other tourist attractions in the region;
- designing of new tourist routes with use of geo-information systems of tourism;
- the establishment of the continuous monitoring system throughout the territory of the Imereti region with the use of modern information technologies;
- optimizing the process of choosing the tourist routes;
- issuance of information materials on tourism;
- organization of trainings, seminars, exhibitions, contests and conferences;
- participation in creating and improving the legal framework on tourism.

The development of the program of the recreation tourism development in the Imereti region on the basis of using the geo-information technologies should enable us to carry out the analysis, define the territories suitable for organizing a particular type of tourism, and identify the relationships between various parameters.

The establishment of tourism-oriented GIS of the Imereti region of Georgia will enable us to make spatial requests and carry out the analysis, define the territories suitable for the required activities, and identify the relationships between various parameters. Information placed on the map of resorts, their disposition plans, quality of service, photos of rooms, beaches, names of local cuisine dishes and other information will provide the tourism companies having access to this GIS with the considerable advantages.

4. Literature

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