The regional agglomeration cultural environment integration and development with the use of the territory improvement information technology

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Abstract. Regional agglomerations are the compactly located urban settlements, united by economic, labor and cultural and community links. The issues of ensuring the development of the Samara-Tolyatti agglomeration of the Samara region in the Russian Federation, which consists of 8 urban districts and 8 districts, are considered. The development priorities of the agglomeration are taken into account, reflected in the development strategies of the region, the city of Togliatti, and can be effectively implemented subject to regional integration. The implementation of the identified areas of development is directly connected with the improvement of the cultural environment of the agglomeration, with the use of information technologies and the improvement of territories. Examples of solving tasks are given.

Introduction
The general term “agglomeration” is the integration of components into larger objects with the acquisition of the new properties, characteristics, that is widely used in urban planning - the formation and development of urban areas and other settlements, the spatial organization of the vast landscapes. Regional agglomerations are the compactly located urban settlements, united by economic, labor and cultural-household ties, containing progressive industries, administrative, economic, scientific and design organizations, educational institutions, culture and art, qualified personnel.

Samara-Tolyatti agglomeration of the Samara region, which consists of 8 urban districts and 8 rural districts is the third largest regional agglomeration of Russia, whose population is about 2.7 million people. There are prerequisites, the possibility of forming the third agglomeration of Russia in terms of the economic potential, including the implementation of infrastructure projects: the construction of an additional bridge across the Volga, the intensification of inter-municipal cluster projects. The geographic position of the Togliatti city district is located in the center of the settlement system, allowing us to focus the development of the city, including the formation of a transport and information center [1, 2, 3].

Increased investment attractiveness is also provided by the state support focused on the diversification of the city’s economy as a single-industry municipality in 2016, the Territory of advanced social and economic development was created within the boundaries of the district: TASED Togliatti, with a number of significant, including tax and benefits for the residents [4].

The development priorities of the Samara-Tolyatti agglomeration have been taken into account, reflected in the new development strategy of Togliatti, and can be an effectively implemented subject to the regional integration. Among the 8 priority areas there are [1]:
- “Eco-city” - reduction of waste generation, preservation of natural ecosystems and biodiversity, development of a green economy;
- “Urban community” - the formation of identity by the search and design of the new meanings of socio-cultural development;
- “The City of Large Projects” - the formation of one of the largest industrial, innovation, information technology centers of the Volga region and Russia, in general;
- “City of Life” - the creation of a humanistic environment, the conduct of a modern urban planning policy.

The implementation of the identified areas of development is directly related to the solution of the problems of integration, the development of the cultural environment of the regional agglomeration, the use of information technologies and the improvement of the territory.

Internal and inbound as well as ecological tourism is relevant for active familiarization with Samara-Togliatti agglomeration.

The important factor of supporting the tourism cluster is the information centers formation, based on the dynamic architectural layouts and computer means for interactive presentations.

Priority for the Samara-Togliatti agglomeration object of ecotourism is the bend of the Volga river "Samara Luka", where the specially protected natural areas – Zhigulevsky state natural biosphere reserve name's I. I. Sprygin and the National park "Samarskaya Luka" [5, 6, 7, 8] are located.

The main stages of centers creation work are [9]:
- the survey of the territory, including the allocated sign objects, tourist routes, their description;
- the development of the design projects of initial requirements for panoramic and local dynamic layouts, interactive information materials;
- the design of hardware and software used for the formation of the layout’s dynamic components, to control the components during demonstrations;
- the complete set, production of fragments of layouts, installation the basic constructions and the layouts on the object, adjustment and tests of hardware and software of a complex;
- the formation of interactive information materials – presentations, videos, a set of pictures;
- training of operating personnel; commissioning of the complex.

The selected characteristic results of the object survey for the formation of the information center "Legendary Samarskaya Luka" are shown in Figures 1, 2.

Figure 1. Examples of iconic tourist objects the territory
When developing the design projects, the composition of the center is specified. The architectural variant is shown in Figure 3. The constituent elements of the complex are: PARM-D - panoramic architectural models with dynamic components; LDM - local dynamic architectural models of objects, fragments of the territory; CP-PM - control panels and indications of the panoramic models; CP-LM - control panels and display local models; AWP - automated workplaces based on personal computers; PLC - programmable logic control layout. Visualization of the presentations, video films is provided using the widescreen monitors.

An example of a souvenir architectural model developed based on the results of pre-project surveys, with the inclusion of the dynamic components - imitation of candles burning in a tea-house, is shown in Figure 4. The “Stone Bowl” is a mountain formation in Samara Luka, bordered by mountain slopes and ravines. There are three wellsprings on the slopes of one of the mountains.

One of them, which according to legend, brings health and longevity, received the name - "Miraculous Spring of St. Nicholas."

**Figure 2.** Ethnographic object of the territory "Bogatyrskaya Sloboda»

**Figure 3.** Architecture of the complex of technical means of the information center (option)
Development of the design projects for the development of the cultural environment, improvement of the public areas of the city was made in relation to objects for various purposes:

- The square of the Tolyatti theater “Koleso”; Cultural and leisure center “Burevestnik”, Park of the Universal Sports Complex “Olymп” [10];
- The revitalization of the 12th quarter, square of the 13th quarter of the city of Togliatti; garden of the Pili Makeup Puppet Theater, buffer zone of the forest area of the central district of the city, figure 5.

![Figure 4. The appearance souvenir architectural layouts "Stone bowl" with a photo illustration of the Samarskaya Luka](image)

Particular attention is paid to ensuring the functional development of the territory of the Technopark "Zhiguli Valley" [11], taking into account the solution of problems, attracting children and young people.

A survey of the objects and structures of the techno-park has been carried out, design proposals have been developed for a selected set of promising objects:
- exhibition pavilions: “Residents of Technopark in the sphere of high technologies “Zhiguli Valley”, TASED “Togliatti”, “Industry, Culture and Education”; “Natural tourist zones and objects”;

![Figure 5. Selected components of the buffer zone of the forest area of Togliatti](image)
- presentation pavilion, with cinema and conference rooms; stage for celebratory events; walking area with recreation areas and communication; information wall area; training area; rental area of sports equipment, equipment; children's techno-park, golf zone, laser tag, figure 6.

The main interest, according to the results of pre-project polls, for the techno-park residents and employees, the university employees and students are:
- a sports equipment rental area, pavilion with rental equipment; Kids Techno-park - where children can understand the world of adults, can gain knowledge about professions, primary skills of activity with the use of technological and measuring equipment, software.

The building and the territory are oriented to the design of the concept, including the long-term development of the Kvantorium-63 Region children's technology park under the construction in the region.

![Figure 6. Area of rental sports equipment, children's techno park](image)

Summary
The achievement of the results determined by the priorities of regional and municipal social and economic development strategies is ensured, inter alia, by the project activities and the implementation of projects aimed at integrating, developing the cultural environment, supporting the tourism cluster, and improving the facilities and territories of agglomerations. The formation of information centers with the use of technologies of dynamic architectural modeling, computer presentations, the development of inbound and inbound tourism, support for the vocational guidance of children and young people is relevant.

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