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## **CONSOLIDATION OF THE OPEN INFORMATION RESOURCES IN THE TOURISM SPHERE**

**The article describes the role of data consolidation in the tourism sphere, the need to use existing software tools to handle tourist information is highlighted, the problem of data resources structuring and unified format creation are emphasized, and the scheme of the formation of tourism documentation is presented.**

**Keywords – tourism documentation, integration, consolidated information, information resources structure, tourism sphere, opened web-resources**

### **Introduction**

Tourism development contributes to the increase of the country's income, and hence its economic development. In this regard, the provision of quality tourist services in modern conditions is one of the urgent problems of tourist business. Constant growth of demand for high-quality tourist product requires improvement and increase of its quality by forming tourist documentation based on international standards of issuance, for example, the international standard ISO 9001-2001.

Important is the diagnosis and study of the sources of formation of tourist documentation, because of their structure. After all, from the source type is a further selection of algorithms for data analysis.

### **Problem setting**

Today doing business in the tourism sector is mainly based on the use of relevant information systems, providing rapid processing of a variety of information required in the decision making process.

The characteristic feature of processing tourist information and formation of travel documentation is the need to provide the user with a compact and reliable information about the variety of services on the basis of interaction between the tourist firm and the consumer of a tourist product in real time.

Constant growth of demand for tourist product requires improvement of the tourist documentation based on international standards. Even more important are the issues of structuring and consolidation tourist information, that allows to optimize the processes of making decisions about providing users with a wide range of tourist services.

Therefore, the role of consolidation of data for the development of modern tourism sector is an urgent problem of information support of business processes.

### **Analysis of scientific research**

Researchers today much attention is paid to the peculiarities of usage of information technologies and software in the activity of enterprises of the tourism sphere[18]. There are many papers in which describes the analysis of data in different type of problem structuring of the data and bringing them to a common format [9, 10, 15, 16]. The authors of [20] explore the challenges of data integration using ETL technology (extraction extraction, transformation-conversion, loading boot).

In [11,15,20,21] describe the three types of integration: consolidation, federalization and duplication. Data consolidation consists in formation of a single integrated database (DB) with different primary sources. Using this method it is possible to process and to make significant amounts of disparate information, to conduct the so-called restructuring of resources. Example of consolidation have the technology ETL and data governance ECM (enterprise content management).

In the case of federalization there is a virtual picture of the primary sources of information that takes generated business applications request, and selects the data from the primary sources, integrating them so

that they match the query, and then the data is transmitted in business applications. Access to primary sources is through metadata. An example is the technology of integration of corporate data EIT(enterprise information integration) [ 11,15,20,21].

If there is just copying data sources taking into account the updating of content and, accordingly, transfer them to another place because of the duplication of the original source, then there is a replication of the data. An example is the technology of integration of corporate applications EAI (enterprise application integration) and replication of corporate data EDR (enterprise data replication).

At the present stage of total Informatization increasing impact of information processes on society. It promotes the development of powerful information environment. As a result, tourism organizations accumulate in the course of their activities large amounts of data and face problems of their online processing [9,15,16,21].

In works [2, 7] describes the problem of heterogeneity of data formats, incompleteness of the information received and the method of use of conceptual models, get information out of context for decision making on service of tourists in conditions of incomplete information. Besides exploring the processes of creating documentation, use DFD-diagrams for describing tourist processes, selection of data and processing with the help of corresponding programs [3,11].

However, no General scheme of formation of tourist documentation is not defined rules and parameters of the analysis of structured and unstructured sources.

### **The purpose of article**

Intensive development of the tourism industry, the demand for tourist products need to develop information technologies of collection and processing of information for efficient and reliable provision of travel services to the users.

Structuring and consolidation of information greatly influences the effectiveness and efficiency meet the needs of users and allows to optimize the processes of tourist business.

The aim is:

- to establish the role of structuring and consolidation of information for the development of tourist sphere;
- to support the choice of open web resources for the generation of travel documents;
- find out the necessity of automation of information processing and select rules and parameters of the analysis of structured and unstructured sources;
- to identify the stages of formation of tourist documentation.

### **The use of open web resource for consolidation tourist information**

In the conditions of constant growth of the volume of information of the fragmentation of its sources, availability of various systems of data processing with the purpose of their further consistency,agility, availability on the basis of uniform information space creation, integration of data plays an important role for development of different sectors, particularly tourism.

For the efficient operation and obtain qualitative results tourist organization should create the necessary conditions for operative processing of all available information with the purpose of bringing it to a single standard in order to be able to process the information regarding the provision of the relevant travel services. To do this, you need to consider the processes of selection of the data and processes of verification, cleaning and conversion for further integration with the use of different methods and tools. The proved choice of technology integration and implementation of its software tools will give the company a possibility for adequate monitoring information [9].

Federalization of the data it is advisable to use in the sphere of tourism, as it is difficult to create a virtual base with a large Kapilvastu information, and it may create technical problems with servicing a large number of users.

Data integration using replication creates problems with increasing the credibility of the resource, because during the copy process, you create an identical or similar resources, which may cause certain scattering of information, not its concentration in a single, unified resource. Besides, duplication of data suitable for homogeneous sources of information, so use it in the process of formation of tourist documents based on open web resources is not advisable.

There is also a hybrid approach to data integration, which brings together consolidation methods, federalization and replication (Fig.1). An example of the application of a hybrid type can be called integration of data on customer data integration). CDI to provide full information about it. This approach is also used in tourism. For example, General data on tourists stored in a single consolidated database, and the order of the tour can be federalnovo. If the consumer of a tourist product updates information about yourself, such updated as a result of distribution of the data is sent to other systems [11,15,20,21]. however, given the weaknesses of federalization and replication, hybrid method should not be used.

Therefore, in the processes of formation of tourist-based documentation for open web resources is appropriate to use for data consolidation, since informational web sources are characterized by fragmentation of data and heterogeneous, and through the mechanism of consolidation is possible to generate ready holistic tourist resource (Fig. 1).

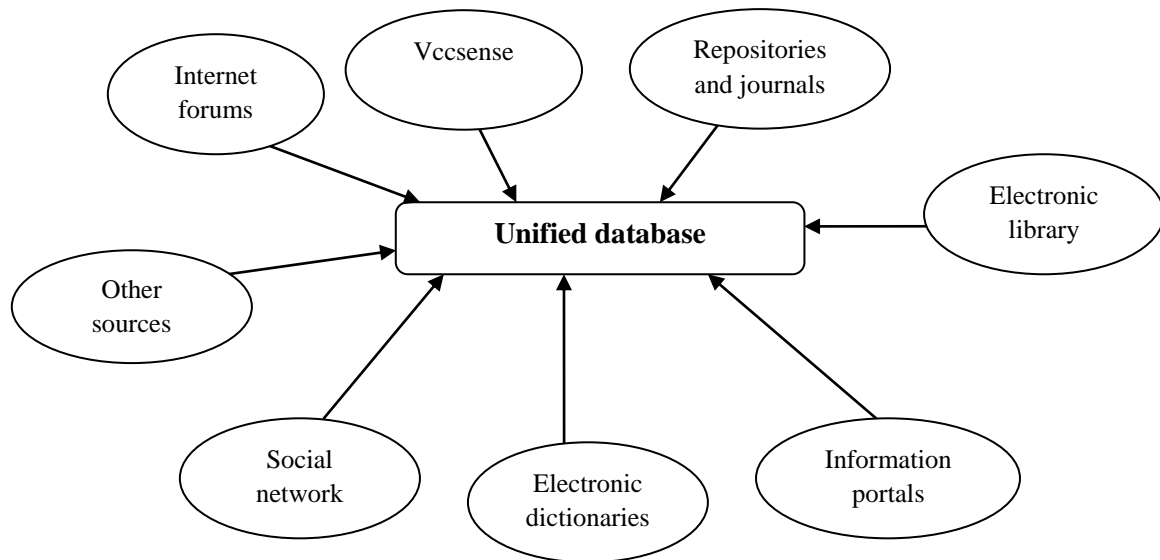


Fig.1. The General scheme of consolidation of sources tourist information

In the processes of formation of tourist documentation appropriate to use open web resources. The availability of the required information plays an important role for the efficiency of its treatment. Free access to different sources of enhancing the reliability of obtained results. Open source promote a more rapid dissemination of information, editing capabilities are characterized by a greater degree of reliability and subject Kapilvastu. Open web resources to facilitate rapid access to various data sources. Through search engines, you can collect a large variety of tourist information.

So, today all tourism businesses operate with large amounts of data that needs to be consolidated. The consolidation of information require a common data format. The mechanism for working with data can be represented as follows:

- first you need to analyze the available sources of information, divide them into structured and unstructured, group, choose data sources;
- choose necessary information by using search tools;
- save selected data, conduct their structuring, to reduce to a common format for further automatic processing;
- saved data processing (you must have a full set of features including search, display, editing and converting), to form a set of rules and parameters of the analysis of both structured and unstructured sources, and apply them in their work the process can be documented;
- for data exchange should be used various mechanisms, for example, archiving and transmission networks, publication, etc. [8,13,19,22].

However, web data of various formats, obtained from disparate sources are stored in disparate systems, and to perform a wide range of actions data need to be integrated, by consolidating the obtained results, in particular, for example, using XML technologies.

## **The analysis of web sources for formation of tourist documentation**

Therefore, one of the main sources of information is the Internet. This information environment, the main basis of which is open web resources available for wide circle of users. Of course, most of these resources is not valuable from the point of view of probability and reliability of information, so you always need to carry out a large number of information-analytical work in order to filter the information and avoid misinformation is spread specially false data with the purpose of introduction of user confusion.

Therefore it is always necessary to analyze the data with regard to all the rules of the analysis of the type of information source, compare information from different sources, to view both positive and negative feedback, focus on the prestige of the forum, to take into account the subjective characteristics of the source, to identify the level of interest informant in the dissemination of information.

In order to properly analyze the data, you need to first divide structured and unstructured sources, and determine the parameters and rules of their analysis, to create a repository of structured and unstructured sources tourist information, to carry out the structuring of unstructured data and the result of aggregation of the data of tourism to form a consolidated information resource travel documentation (Fig. 2).

The heterogeneity of the data creates the need for their division into structured (for example, formalized texts, information from the databases and the like) and unstructured (for example, faxes, e-mail, voice mail, multiple file documents, presentations, etc.), with the aim of further choice of an adequate set of rules for processing of heterogeneous information [19].

A very large amount of information is unstructured, so you need to choose effective tools by bringing information to a consistent look for further analysis and systematization.

Problem structuring the data is urgent and complex, so it must be addressed comprehensively, using different approaches, concepts, technologies and processing tools.

Any data source later processed over him manipulations are taking place and information is of particular species, adapted to the format and further involved in processing and research, persisting in a structured form.

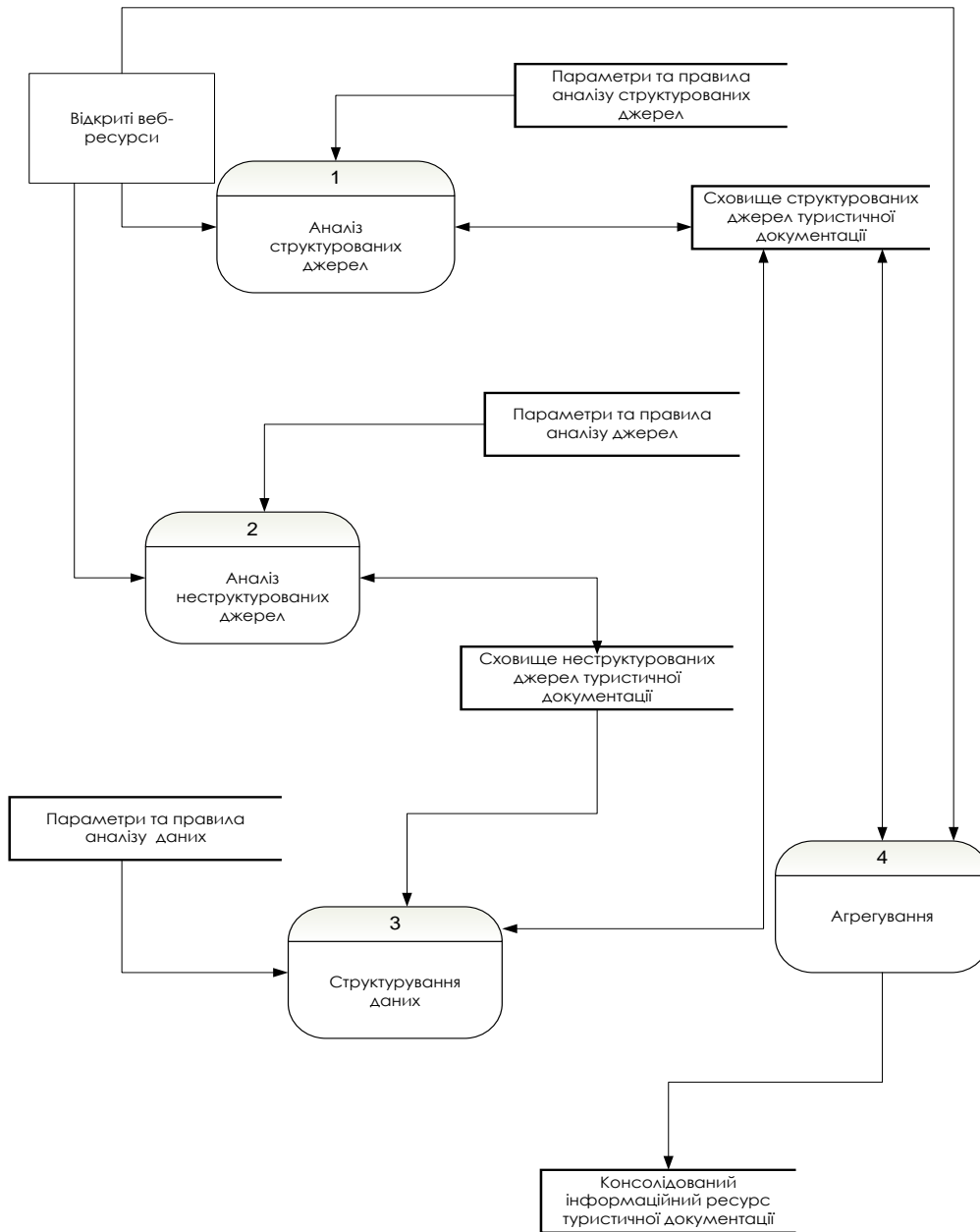


Fig. 2. Scheme of the analysis of information sources for formation of tourist documentation

Obtaining information is performed with the help of certain tools extraction of data with which to present information in a unified, single adopted in the format of 3) [22]. In any of the tourist organization of the important activity is the processing of information, which should be automated to accelerate the process of data manipulation. For this, the data must be kept to a unified format.

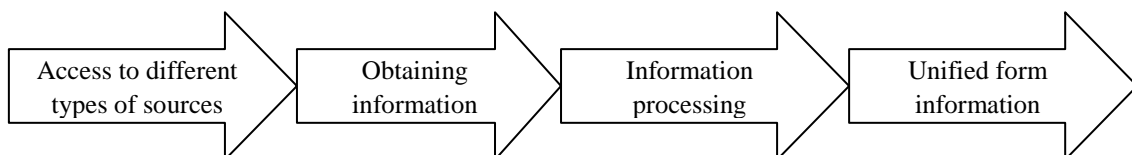


Figure 3. Technology of formation of tourist documentation

Today, for the extraction of data, you can use special information and analytical system that before beginning processing of information can be configured for specific data sources. According to the source type to form a set of rules to process the data in accordance with the structure and set their system. To process unstructured sources, it is necessary to use information thesauri, Boolean conditions, dictionaries subject area [8]. Processing of unstructured sources requires more time, because they should first of all be reduced to a structured mind.

For processing, you must also specify criteria for the selection of data. Then the information from structured sources should be reduced to mean the internal structures of informational objects selected information-analytical system and store in the database.

You want to choose a software that will allow you to consolidate information from different sources, edit it by converting to a single format for visualization, preservation and further manipulation, creating a certain model of data for analysis.

In order to group sources on the structure, you need to clearly delineate the areas on which the information important for the tourist. This will help to identify the main thematic areas of extraction, and in the further will allow to systematize the basic rules of data analysis both structured and unstructured.

From this point of view should be documented such basic areas as: accommodation, tourism facilities, catering, entertainment, sightseeing tours, accommodation, transportation, information on place of rest, insurance, travel formalities, tours, hotels, etc. with Full and adequate information about each of these themes will provide the proper quality of services.

### Stages of formation of tourist documentation

Any document life cycle is composed of such stages as: birth, installation, publication, archiving. On this basis, the formation of tourist documentation includes such stages as: analytical, search, data processing, creation of documentation and manipulation documentation (Fig.4).



Fig. 4. Stages of formation of tourist documentation

At the analytical stage it is necessary to carry out information-analytical survey of the problem, to understand what information is missing, what type of documentation you need to create and develop a tourist project documentation. For this you need to identify gaps in the tourist information based on the analysis of opinions, requests, complaints and suggestions of consumers of tourist product, to analyse the requirements of the modern tourist market, and to form the criteria for qualitative travel documentation.

At the search stage, in order to find the tourist information you need to choose the system of information search for the formation of an information request, be traced or found information corresponds to the request parameters and to carry out the selection of information before choosing a technology, methods and tools of information extraction.

The next step is to develop templates of documentation by filling their processed data and the translation was created in electronic form.

Created documentation claim after testing and verification of the suitability and put into operation.

The formation of tourist documentation is difficult, time-consuming, highly skilled specialists, the implementation of electronic information technologies of information processing, means of its groups, identification of sources of tourist information, a logical analysis of materials, selection of methods, data extraction, data until one is available for the consumer of a tourist product through the consolidation of the processed data.

### Conclusion

Consolidation, as a type of integration allows you to transform disparate initial data in a single resource, ensuring the integrity, coherence and reliability of the content.

One of the main sources of information in tourism is open web resources with a free access of the user.

Important component of any tourism organization is the automated processing of information, which requires the construction of data to a unified format.

Actual and at the same time the complex is the problem of structuring the data obtained. To convert the unstructured texts into information suitable for formation of tourist documentation, use the appropriate computer algorithms and data processing program. It is necessary to form a set of rules and parameters of the analysis of both structured and unstructured sources, with the aim of adequate information processing.

The stages of formation of tourist documentation that allows to optimize the tourist activities.

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