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TACTICAL MODEL FOR CONSTRUCTING A PROTOTYPE OF AUTOMATIZED ASSESSMENT OF TOURISM ECONOMIC IMPACT

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Research Problem

- Regional tourism authorities are increasingly interested in regional statistics of tourism for designing policies, the characteristics of tourism flows, the structure of supply and demand, etc. (UNWTO/INRouTe, 2013).
- In 2013 the United Nations agency World Tourism Organization (UNWTO) developed the Guidelines for Socio-economic Measurement and Analysis of Regional Tourism and admits that the **'economic impact' (EI) of tourism must be estimated by applying models** (UNWTO/INRouTe, 2013).
- Explore ways to combine the use of traditional and mobile positioning data (MPD) in assessing the EI of tourism in line with the opportunities of the digital age.
- To provide an **automated evaluation of the tourism EI**, the study is based on the research work started in 2017 that resulted in the development of a theoretical **strategic model** for the construction of the prototype for two interconnected digital applications – 'Data Bank' and 'Data Analysis' – as a unified solution.

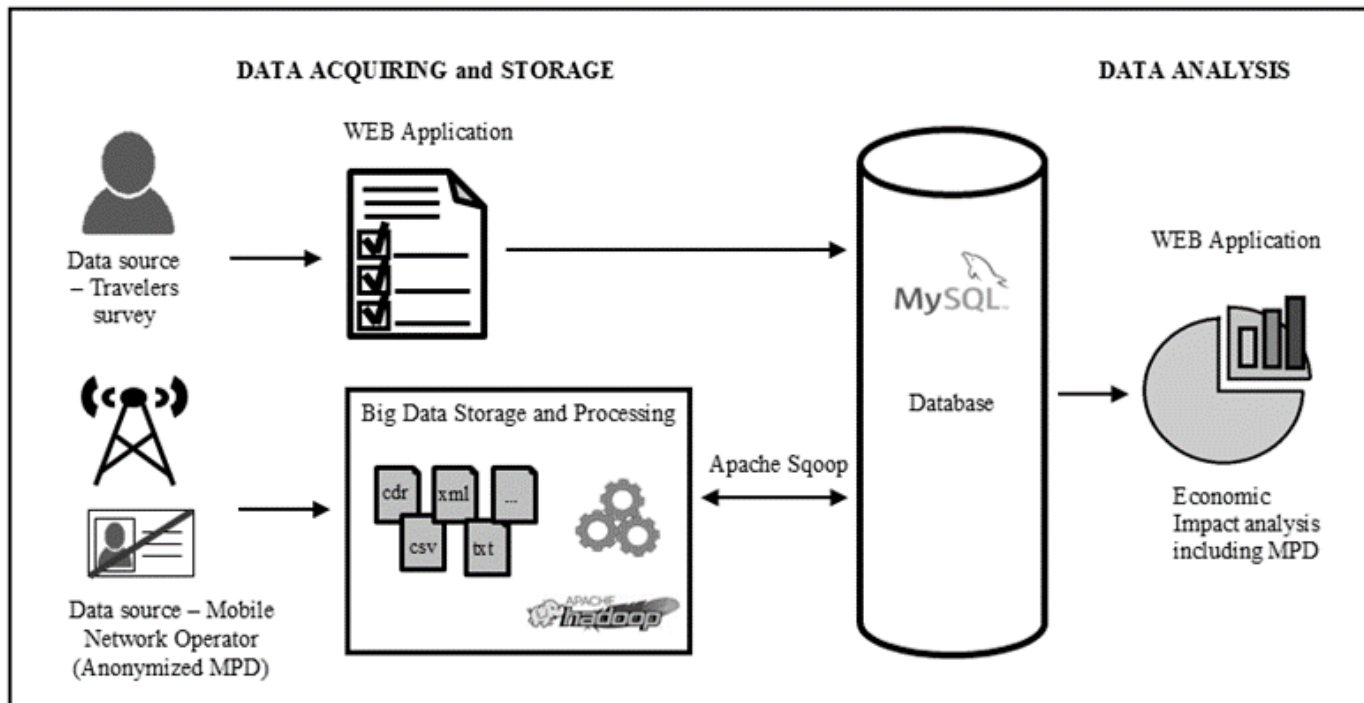


Figure 1. The strategic model for automating tourism economic impact assessment, and for supplementing it with the spatial dimension (created by authors)

Research Aim

Development of a theoretical **tactical** (technological action) **model** required for the practical construction of the prototype.

Research Object and Subject

Object – the technological possibilities in the construction of the prototype;

Subject – the effects of the collaboration of technologies

Research Methods

- The study is a **qualitative research**. It is based on applied and scientific literature and practical findings. The study uses the monographic, descriptive, abstract-logical methods, comparative analysis, analysis and synthesis, induction and deduction.

A significant range of information sources and technical, analytical descriptions is provided by the official websites of software developers.

Results and Discussion

The technological capabilities and their collaborative effects have been investigated in line with the requirements included in the prototype Software Requirements Specification (SRS). There are three areas investigated:

1. Technologies for the prototype component 'Data Bank';
2. Technologies for the prototype component 'Data Analysis';
3. Interaction of technologies for the prototype development.

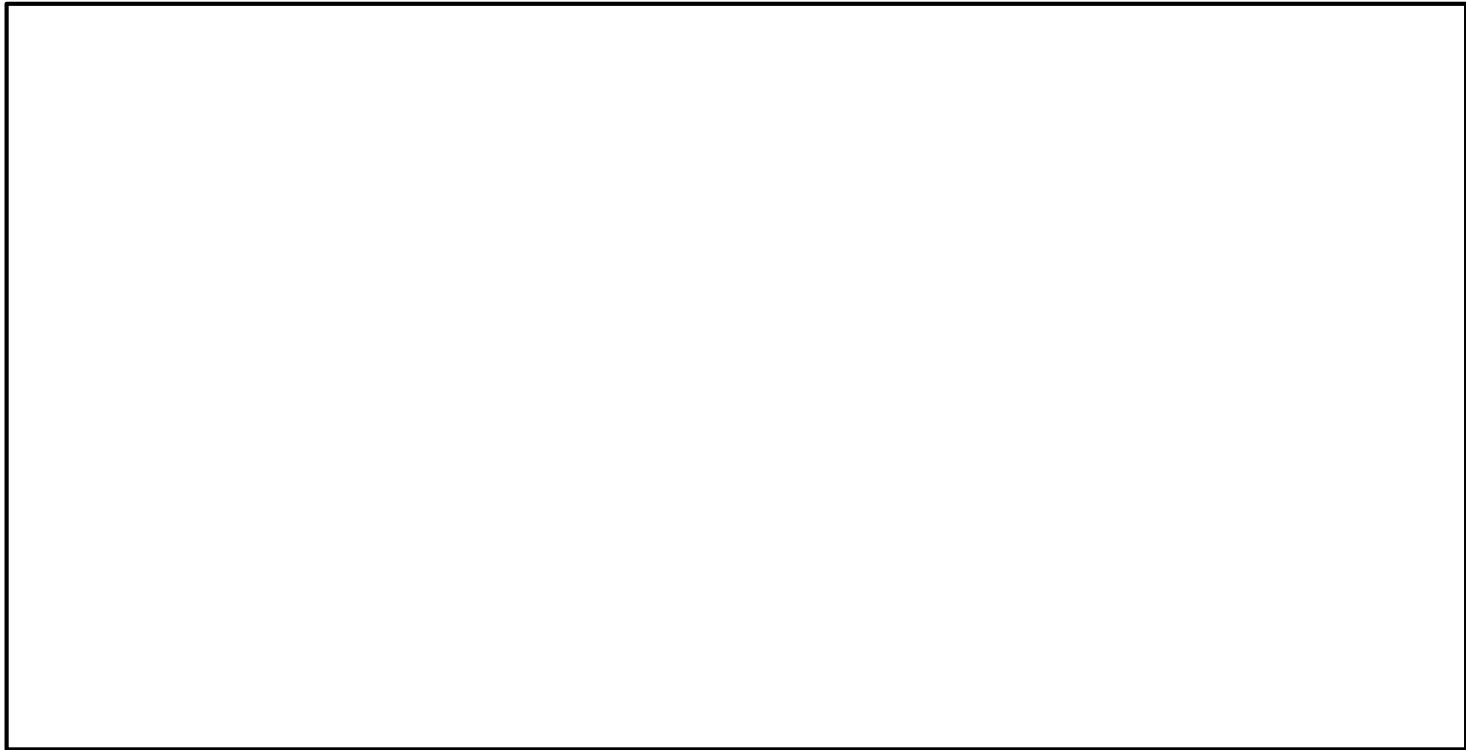


Figure 2. The tactical model for the construction of the prototype of the automatized assessment of tourism economic impact (created by authors)

Theoretical values of the model:

- The ability of the model to be flexible – the wide range of the available library modules in the 'Data Bank' and 'Data Analysis' structure will allow the solution to be used for other research in future;
- Using the 'Data Bank' content management system, authorized users will be able to easily create new multi-language survey forms, sort the data submitted there, and create new data views;
- The 'Data analysis' interactive interface will allow easy and fast data analysis and visualization;
- The standalone system eliminates the risk that a platform manager stops working or makes significant technological changes that threaten the sustainability of the model;
- A model based on open source technologies ensures that there is no need to buy/subscribe to licenses, and the technologies selected provide a possibility for it to be 'transferred' to one of the cloud computing platforms in the future;
- The technologies support distributed computing.

Risky technological features of the model:

- The technological combination consists of a set of components, libraries, and it can complicate the technological installation, configuration and administration of the practically implemented prototype.
- The limitations of the mutual collaboration of libraries are not fully known. Thus, there is a risk of being forced to change the libraries.

Future prospects for the practical implementation and maintenance of the model:

- To evaluate the integration possibilities of the applications' interfaces, including a unified authentication mechanism, taking into account data security aspects;
- To assess available resources to separate the externally available information systems from the internal at the network level;
- To migrate the model to one of the cloud computing platforms.

Conclusions

1. The tactical (technological action) model of the construction of both prototype components – 'Data Bank' and 'Data Analysis' consists of a combination and joint operation of 4 platforms (servers);
2. The model includes promising open source technologies that are combined to produce a powerful framework that can process, analyse and visualize both traditional data and MPD;

3. The tactical model complies with the conditions of the SRS – using free open source solutions that must be able to operate with traditional and MPD, perform simple and more complex calculations, and the statistical analysis and visualization of results. Taking into account that the methodology for evaluating tourism EI is a set of mathematically static (fixed) actions, the requirement for ensuring a higher staticity of the model is also met – considering the peculiarities of cooperation of all involved technologies, it is possible to transfer the model to one of the cloud computing platforms;
4. In the course of the research, the values of the model, possible risky features and future perspectives for the implementation of the model have been identified. This proves that there is a basis for the continuation of the research, but already in parallel with the technical development of the prototype.

Thanks!
Time for discussion!