THE SOCIAL USABILITY
OF GEOINFORMATION PRODUCTS

UŻYTECZNOŚĆ SPOŁECZNA
PRODUKTÓW GEOINFORMACYJNYCH

Jerzy Gaździcki

Council of Spatial Information Infrastructure
Polish Association for Spatial Information

Introduction

The domain of spatial information recently has been developing very fast in Poland. Taking advantage of the achievements in information and geomatic technology and of stimulating influence of legal provisions and financial assistance of the EU, a number of projects have been implemented providing for the expansion and modernization of existing resources of geospatial information. New geospatial databases have been established meeting up-to-date standards and ensuring semantic, technical and organizational interoperability, as well as new systems in the form of regional, local and thematic spatial information infrastructures, several geoportals and geospatial data services providing convenient access to the stored data concerning specific area and thematic range.

Before approval, every project should be assessed from the point of view of its expected results. The basis for this assessment provides cost-benefit analysis performed in the scope limited by available data and experts' qualifications (Gaździcki, 2013). Irrespective of this kind of analysis of expected costs and benefits, the assessment of already functioning products, existing for long time or implemented in the recent years, is necessary.

This paper has been written on the occasion of the Polish Association for Spatial Information XXIII Conference "Spatial information infrastructure as a tool to develop information society", Warsaw, 6-8 November 2013.

The notion of usability in information technology

In IT, we call usability the attribute of products that is decisive for their quality. This notion is applied to the products in the IT sense, first of all to interactive appliances, applications and websites. According to the standard (ISO 9241, 2006), usability can be understood as the effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments. In this definition **effectiveness means** the accuracy and completeness with which users can achieve their goals, efficiency – the resources expended in relation to the goals achieved, **satisfaction** – the comfort and acceptability to its users and other people affected.

The user of a website of low usability risks failure and unnecessary loss of time which may discourage him and lead to resignation from further search for necessary information. The use of such a website may be connected with difficulties to:
- understand its purpose and functioning,
- assess the possibility to satisfy personal needs of the user,
- correct the errors caused by the lack or insufficient information about performed operations,
- interpret the results obtained.

Web usability and its testing raise particular interest. The source of information about this subject worth recommendation is the handbook used by the European Commission and binding within the family of EUROPA websites run by the EU institutions (European Commission, 2013).

The concept of social usability of geoinformation products

The general purpose of geoinformation products e.g. geospatial databases, geoportals, cartographic products and various geospatial services is to serve the society by providing knowledge about space that is of interest for citizens. It is assumed that the society has the features of information society and is prepared to take advantage of up-to-date information and communication technologies. A member of information society receives geospatial information by contacting, in general, a selected product, the task of which is to disseminate information. However, in the process of creating, processing and storing the information he is interested in, several products may participate forming a chain of geospatial products.

In the case of geoinformation products, it is advisable to extend the notion of usability known in IT in a manner making it possibile among other things to:
- consider usability of geoinformation products on the scale of information society,
- ensure independent verification of the assumptions made in feasibility studies of projects and related to the benefits expected in the effect of implementation of geoinformation products,
- make an assessment of geoinformation products aimed at increasing their usability,
- identify and exchange good practices.

The social usability of a geoinformation product is defined in this paper as an attribute of this product expressing effectiveness, efficiency and satisfaction with which identified in the

society user groups achieve their goals. It is proposed to evaluate the social usability by means of a report taking into account the following components of its content:
1) general assessment of usefulness of a product to realize the assumed objectives and tasks which require the use of spatial information and serve the society,
2) characteristics of identified target user groups and their needs,
3) characteristics and evaluation of the product in the respect of:
   - ❍ accessibility of the product (dissemination of the information about the product, procedures used, restrictions, costs),
   - ❍ the manner the product is used (adaptation to the user needs in the respect of functionality, interface, accessibility),
   - ❍ quality of results obtained by means of this product and easiness of their interpretation,
4) characteristics and evaluation of the product as means for the dissemination of geospatial information in the society, taking into account, if possible, data on the number of uses of the product on annual scale, including estimation of:
   - ❍ percentage of the number of uses recognized by users as satisfactory and meeting their expectations,
   - ❍ percentage of the number of uses recognized by users as unsatisfactory, discouraging to further uses of the product.

The concept presented is formulated from the point of view of information society and reflects the contribution of geospatial information to its development. It refers to some extent to research carried out on classification, functionality and thematic scope of geoportals (Dukaczewski et al., 2012).

Elaboration of the report about social usability

The report about social usability of a given product should be elaborated by impartial experts assisted by a group of testers representing typical users of the product. The data mentioned in item 3 of the content of the report may be obtained by means of appropriate IT means, analyses, test examinations and surveys e.g. conducted in connection with the use of the product by users.

In the report, conclusions and recommendation should be included, which may refer to:
- ❍ a specific analyzed product,
- ❍ all products of a given kind.

As the report about social usability is made *ex post*, it does not contain cost and benefit analysis which constitutes an important element of feasibility study of undertaken projects. However, some economic considerations may be necessary to justify conclusions and recommendations of the reports.

Conclusions

1. The experience arising from intensive works in the area of geospatial information carried on so far in Poland should be carefully analyzed, and the resulting findings should be properly exploited in planning of further works, taking into account potential financial means from the EU budget for the years 2014-2020.

2. Both in the analysis of the results of works conducted and in planning their continuation it is necessary to observe the needs of the most important collective user which is the information society. This requirement is expressed by the concept of usability of geoin-formation products.

Bibliography

Dukaczewski D., Ciołkosz-Styk A., Sochacki M., 2012: Geoportale regionalne wybranych krajów Europy – studium porównawcze. (Regional Geoportals of Selected European Countries – a Comparative Study). *Roczniki Geomatyki* t. 10, z. 4. *(Annals of Geomatics*, vol. 10 issue 4), PTIP Warszawa.

Gaździcki J., 2013: Infrastruktura informacji przestrzennej w świetle doświadczeń wdrożeniowych w Pol-sce. (Spatial Information Infrastructure in the Light of Implementation Experience in Poland) *Roczniki Geomatyki*, t. 11 (w druku), *Annals of Geomatics*, vol. 11 (in print)), PTIP Warszawa.

ISO, 2006: ISO 9241: Ergonomics of Human System Interaction. www.gobookee.net/iso-9241/

European Commission, 2013: Information Providers Guide. The EU Internet Handbook. www.ec.europa.eu/ipg/

Abstract

In the paper, the social usability of a geoinformation product is defined as an attribute of this product expressing effectiveness, efficiency and satisfaction with which user groups can achieve their goals. It is proposed to evaluate the social usability by means of a report taking into account the following components of its content:

1) *general assessment of the usefulness of a product to realize the assumed objectives and tasks which require the use of spatial information and serve the society,*
2) *characteristics of identified target user groups and their needs,*
3) *characteristics and evaluation of the product in respect to:*
   - *the accessibility of the product (dissemination of information about the product, procedures used, restrictions, costs) ,*
   - *the manner how the product is used (adaptation to the user needs in the respect of functionality, interface, accessibility),*
   - *the quality of results obtained by means of this product and easiness of their interpretation,*
4) *characteristics and evaluation of the product as means for dissemination of geospatial informa tion in society, taking into account, if possible, data on the number of uses of the product on annual scale, including satisfactory uses.*

It is suggested that this approach be used when evaluating the results of geoinformation projects and planning the new ones in Poland.

Professor Jerzy Gaździcki
gazdzicki@post.pl