G. M. TIMCAK*-H. P. SCHLEUSENER**-J. JABLONSKA***
The Web2 Environment As a Platform for Making Natural and Cultural Values Accessible to Potential and Actual Clients

Abstract

Services like tourism have to use the possibilities of modern advertising. In particular, these include the World Wide Web (WWW). This platform brings its products and services directly to the customers. To place the information about a region and its tourist offer in optimal manner requires exact definition of elements in the Web based tourist information system (*WETIS*) and their presentation.

We discuss the elements and their integration in other services, the data structures and types, maps and their interactivity. Furthermore, we present tourism related data of selected Slovakian villages and cities. Finally, we give a report regarding our demonstration web page and future development.

The usual tourist information on the web usually relates to the most interesting historical or cultural sights in the region and is marketing oriented. In this way the full image of history and beauty of the characteristic towns and villages is usually missed. Our intention was – in cooperation with the Geotourism students of the Institute if Geotourism – to map also these features of Eastern Slovakia and of the NE Carpathians.

As the web is to serve mainly the tourist community, the map connects to useful information on various facilities available at the given locality. The detailed photo-documentation makes it possible e.g. also to see each traditional house. This is interesting as the number of these houses is decreasing. They are replaced by modern buildings, which lack the regional and local flavour.

Key words: Web2, database, information system, E. Slovakia, NE Carpathians, tourism

Introduction

E-marketing of regions and its settlements as well as tourist areas is of particular economic relevance for the tourism sector. For example, customers nowadays wish to obtain information about locations like hotels, restaurants, routes and tourist attractions. For a user friendly representation, the data should be pictured on maps. Due to copyrights, many of the maps available on the WWW are inaccessible for use. However, recently Google released free maps and their use requires only registration. Yahoo has a similar offer. In this paper we will demonstrate the use of Google maps available on the Internet for the optimal representation of the region of the NE part of Carpathian basin as an example. The *WETIS* portal developed by us, includes an interactive graphical user interface as well as the searching for objects and the possibility to create own objects. Furthermore, it allows the use of Google geographical search functions. The details of the

* Institute of Geotourism, FBERG TU Kosice, Němcovej 32, 04001 Košice, Slovakia; e-mail: gmtkg@tuke.sk
** TU Berlin, Faculty School of Process Sciences and Engineering, Field Computer Science, Gustav-Meyer Allee 25, 13355 Berlin, Germany; e-mail: Heinz.Schleusener@tu-berlin.de
*** Institute of Geotourism, FBERG TU Kosice, Němcovej 32, 040 01 Košice, Slovakia; e-mail: jana.jablonska@tuke.sk

concept, the implementation and possible extensions in future are described in the following paragraphs. The current version is available on the web (http://www.wetis-sk.de/).

In contrast to other web sites, like http://mars.elte.hu/varak/terkep+lista2.php, where very nice pictures of historical buildings and their sections are given, the WETIS web solution has a more active approach and has a wider range of data attached.

The purpose of this work was, however, not only to provide marketing for objects that – according to the prevalent tourist taste – could be of interest and thus be an attractor. We wanted to create a site, where in-depth information is available on individual settlements and their environment. The web site does not contain only data of selected settlements, but of all settlements. This – we hope – may also increase the interest of people in their local and personal history. The GIS solution for the same task (Timčák, Vizi 2006, Vizi, Janičko, Timčák 2008) was found to be less user-friendly and costly.

Although history is a sensitive concept (e.g. Slovak and Hungarian historians do not always agree on the interpretation of historical events), we feel that it is an area that can be clarified only by mutual communication. Still at present, there are hurdles. For example in Slovakia, the Hungarian historical family names have to be written using Slovakian orthography (cf. e.g. Uhláriková 2002). Thus Batthyán would be Baťán, Dessewffy would be Dežofi (irrespectful of the fact that it may be derived from Dessewffy, Desewffy, Dezsőfi, Dezsőfy or any variant of that). Such policy was used in the USSR, where foreign names were simply transcribed according to Russian pronunciation. Thus Schmidt, Schmitt, Schmied, Schmiedt, etc. – all were transcribed as Σ<4H. In this way, the identity of the original name was often permanently obscured.

If a member of one nationality or ethnic group sees names well known in its culture rewritten, he/she may perceive that as a threat to his national or ethnic identity and decline visiting the place (cf. Grainger, Crouch 2006). A possible solution was indicated by Gvillli and Poria (2006), where the web service, using special software, checks the original country of the enquirer and presents the site description in accordance with the culture/history of the enquirer. That is sometimes seen as unethical or opportunist. We adopted a solution, where in the Slovak text, the personal and locality names are written using the prescribed orthography, but in the description we give all the historical names. A universal solution is still hidden in the future, though even amongst the Slovaks, there is often a feeling that historical names should retain their historical forms (Uhláriková 2002).

In case of geographical names, the situation is somewhat similar. Slovakia has a number of ethnical groups, and all have their names for geographical entities. Thus the city of Košice has a number of names (Kassa, Kaschau or Cassovia). In non-Slovak cultures, if the ethnic name occurs in their language, this is the name that will be easily recognized and contextualised.

The historical data and field data needed for the WETIS were collected mostly by the BSc and MSc students of the Institute of Geotourism, FBERG, TU Košice. Their full list is on the www.kgptour.tuke.sk page.

Data collection

From tourism development point of view, the Kosice and Presov County represent 7 sub-regions name-wise adopted from the times before WWI. *(Fig.1)*.
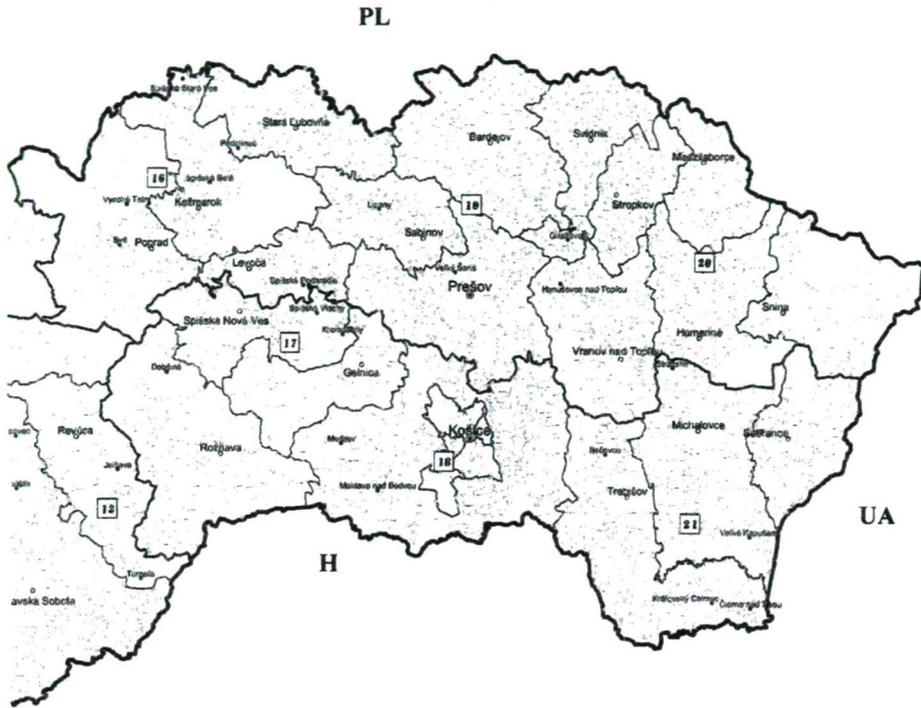
PL

Fig. 1. East Slovakia with the tourism regions marked by numbers. Explanations: 13 – Gemer/Gömör, 16 – Tatra/Tátra, 17 Spis/Szepes, 18 Kosice/Kassa, 19 Saris/Sáros, 20 Upper Zemplin/F. Zemplén, 21 – Lower Zemplin/A. Zemplén (*Adapted from:* www.economy.gov.sk)

For our research, Kosice County was divided into units containing approximately 10 settlements, where a comprehensive set of data was collected (Tab.1; Timčák 2006). As already mentioned, field data were collected mostly by BSc and MSc students during the work on their thesis. The coordinates were taken by Garmin Venture Cx GPS unit. Digital photographs were taken not only of objects of historical, cultural, leisure or administrative interest, but also hospitality related objects. Furthermore, photographs were taken of traditional rural buildings that could be of interest for rural tourism development.

The data on photograph localisation were also inserted to 1:10 000 map sections for double checking the XYZ coordinate values *(Fig.2)*.

At present, data on Čičarovce, Veľké Kapušany, Čierne Pole, Bajany, Maťovské Vojkovce, Budince, Ruská, Kapušianske Kľačany, Veľké Slemence, Ptrukša, Opiná, Kecerovský Lipovec, Mudrovce, Rankovce, Herľany, Vyšná Kamenica, Nižná Kamenica, Košický Klečenov, Svinica, Dargov, Sady nad Torysou, Olšovany, Ďurkov, Košická Polianka, Ruskov, Vyšný Čaj, Nižný Čaj, Vyšná Hutka, Nižná Hutka, Blažice, Bohdanovce, Zemplínska Nová Ves, Stanča, Kožuchov, Zemplínsky Branč, Lastovce, Hrčeľ, Novosad, Kašov, Kysta, Luhyňa, Veľaty, Ovčie, Víťaz, Široké, Fričovce, Poľanovce, Pongrácovce, Korytné Harakovce, Beharovce, Dúbrava, Slovenská Ves, Bušovce, Jurské, Ihlany, Krížová Ves, Spišská Belá, Mlynčeky, Rakúsy, Stráne pod Tatrami, Kežmarok, Lúčky, Hažín, Zalužice, Čečehov, Jastrabie pri Michalovciach, Michalovce, Lastomír, Laškovce, Šamudovce, Krásnovce, Iňačovce, Lúčky, Hažín, Zalužice, Čečehov, Jastrabie pri Michalovciach, Michalovce, Lastomír, Laškovce, Šamudovce, Krásnovce, Iňačovce, Ondavka, Vyšná Polianka, Varadka, Nižná Polianka, Hutka, Mikulášová, Smilno, Jedlinka, Becherov, Zborov, Chmeľová, Giraltovce, Kobylnice,

Mičakovce, Železník, Kračúnovce, Lúčka, Kuková, Želmanovce, Dukovce, Kalnište, Lužany pri Topli, Slančík, Slanské Nové Mesto, Kalša, Slivník, Egreš, Plechotice, Čelovce, Nižný Žipov, Kuzmice, Brezina, Čaklov, Zámutov, Jusková Voľa, Vechec, Kamenná Poruba, Davidov, Banské, Cabov, Sečovská Polianka, Sačurov, Sabinov, Uzovský Šalgov, Pečovská Nová Ves, Jakubova Voľa, Červenica pri Sabinove, Červená Voda, Drienica, Jakovany, Olejníkov, Lutina, Hranovnica, Spišský Štiavnik, Vydrník, Jánovce, Abrahámovce, Vlková, Vrbov, Žakovce, Hôrka, Švábovce, Hozelec, Gánovce, Poprad, Mlynica, Veľký Slavkov, Hanušovce nad Topľou, Medzianky, Pavlovce, Petrovce, Hermanovce nad Topľou, Bystré, Čierne nad Topľou, Michalok, Petkovce, Skrabské (63 settlements) are already prepared for inclusion.

Up to date, about 400 villages, cities and their surroundings were documented in a detailed manner. The resulting data-sets are subsequently being reworked into forms suitable for the web portal (see *Tab.1* and *Fig. 5*).
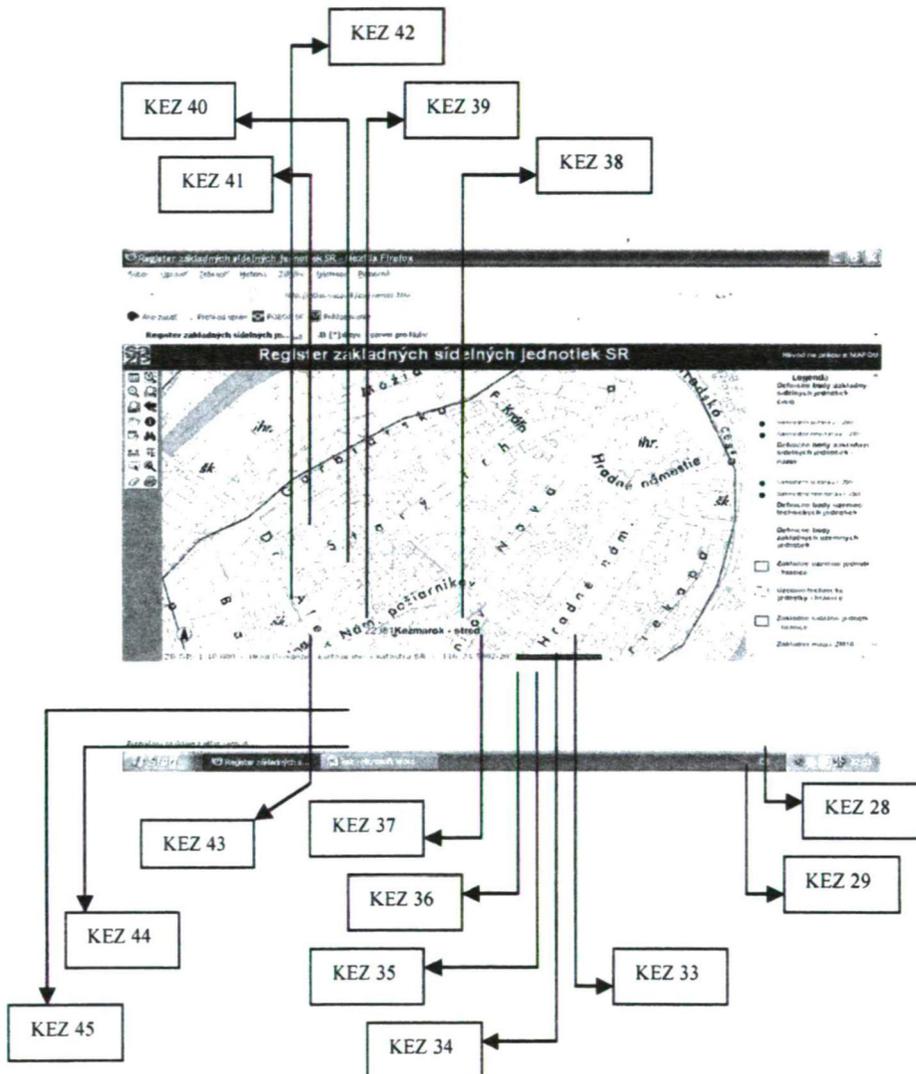

Fig. 2. A 1:10 000 map segment of Kezmarok city. The inserts localize the photographs of objects of interest. The codes identify the photographs. This identification has also a corresponding XYZ coordinate set (Hric 2008).

Table 1. Primary data types collected for the WETIS (present authors)

Descriptor type	Number of subgroups	Descriptor type	Number of subgroups	Descriptor type	Number of subgroups
Environment type and quality	9 fields, 30 data types	Services	5 fields, 19 data types	Demographic data	3 fields, 15 data types
Man-made objects	9 fields, 36 data types (including XYZ coordinates and photos)	Transport and telecommunications	8 fields, 33 data types	Projects	3 fields, 15 data types
Tourism related enterprises and facilities	11 fields, 42 data types	Existing tourism related programs	6 fields, 26 data types	Information (books, guides, maps) and promo materials	5 fields, 12 data types

Fig. 3. An example of photographs taken in Kezmarok and listed in Fig.2 (KEZ 43) (Hric 2008)

Basic WETIS concepts

It is a complex task to design a portal which offers a user friendly and comprehensive representation of a region. Examples of appropriate portals are still seldom available. The main challenge is to develop a solution which informs the user about a region in a concise and up to date manner. Moreover, a certain adoption to user behaviour is desirable.

In our *WETIS* solution, we decided to use the Google maps instead of Yahoo ones, as they are more detailed and contain a better representation of Europe. We did not consider the MapPoint Web Service of Microsoft since there are copyright costs depending on the number of users and/or transactions.

The Google maps had to be integrated into the *WETIS* portal. It required to write program code for certain new functions. Basically, a database contains the georeferenced data which can be extended by the user. The solution may be easily extended e.g. by the incorporation of further modules like Blogs which allows an adjustments according to a

particular project requirement. The basic project page, the portal page, shows the actual offers of the site *(Fig.4)*. The *Fig. 5* gives an impression of the menu point "Search an object".

Fig. 4. The basic project page (portal WETIS East Slovakia)

Fig. 5. The object search page

At present, we are working on a partially open section of the WETIS, where not only the administrator, but users can insert their photos, their trails and descriptions. In this way the WETIS could be a very rich source of information for all potential users, be it tourists or professionals. The possibilities will be "Add and display routes", "Add and display areas" and "View animated routes".

Implementation

Programming
In order to incorporate Google maps, on the client side JavaScript is used. This allows also the application of AJAX (Asynchronous JavaScript and XML) concepts.

The georeferenced elements to be represented on the map are stored in a MySQL database. The readout of the data is performed on the server using PHP.

Google Key
Google key is needed for the implementation of solutions offered by Google into one's own projects. It can be generated by a Google Account and is transferred with JavaScript to Google. The Google key is limited for the use of one URL.

Design of the graphical user interface
The structure of the search and other pages is given in figure 5. It contains the map on the right hand side below the head and the navigation on the left hand side. The Login field of the Administrator is located in the head *[Admin]*. An Admin has the right to edit the data base *(Fig. 6)*.

Project WETIS- SK: Edit data base entries

Search term(s)   ke   Note. Input 2 characters at least, separate terms with spaces.

Result of searching for ke 137 hits

ID	PrID	Object	Filename photo	Photo	ZIP	Town	Country	Short description	Edit
318	JUR 2	Obecny urad	JUR02.jpg		05994	Jurské	Slovensko		Go
317	JUR 1	Rimsko katolicky kostol sv. Juraja	JUR01.jpg		05994	Jurské	Slovensko		Go
174	KK48	Futbalove ihrisko	KAKL0432.jpg		07901	Kapušianske Kľačany	Slovensko		Go
172	KK46	Materska škola	KAKL0409.jpg		07901	Kapušianske Kľačany	Slovensko		Go
162	KK37	Obecny urad	KAKL0419.jpg		07901	Kapušianske Kľačany	Slovensko		Go
173	KK47	Opravovňa aut	KAKL0428.jpg		07901	Kapušianske Kľačany	Slovensko		Go
166	KK40	Predajňa potravin	KAKL0424.jpg		07901	Kapušianske Kľačany	Slovensko		Go
168	KK42	Rarv Bar	KAKL0426.jpg		07901	Kapušianske Kľačany	Slovensko		Go
169	KK43	Reformovany kostol	KAKL0394.jpg		07901	Kapušianske Kľačany	Slovensko		Go
164	KK38	Rimokatolicky kostol	KAKL0395.jpg		07901	Kapušianske Kľačany	Slovensko		Go
165	KK39	Rod.Dom č.d 36	KAKL0442.jpg		07901	Kapušianske Kľačany	Slovensko		Go
167	KK41	Rod.Dom č.d 98	KAKL0435.jpg		07901	Kapušianske Kľačany	Slovensko		Go
170	KK44	Rod.Dom č.d 90	KAKL0444.jpg		07901	Kapušianske Kľačany	Slovensko		Go
171	KK45	Zvonica	KAKL0395.jpg		07901	Kapušianske Kľačany	Slovensko		Go
384	KEZ 66	Areal rimsko - katolickeho kostol Sv. Kríža	KEZ66.jpg		06001	Kežmarok	Slovensko		Go
345	KEZ 27	Cirkev adventistov siedmeho dňa	KEZ27.jpg		06001	Kežmarok	Slovensko		Go
359	KEZ 41	Club hotel **	KEZ41.jpg		06001	Kežmarok	Slovensko		Go
375	KEZ 57	Cukraren č. 50	KEZ57.jpg		06001	Kežmarok	Slovensko		Go
330	KEZ 12	Dom Slovensko- Polskeho	KEZ12.jpg		06001	Kežmarok	Slovensko		Go

Fig. 6. The WETIS database system – location data

Functionalities of the Google map in the left window

In the upper left corner there is a tool to move, to centre and to zoom the map. On the right hand side there are buttons in order to switch the type of the map *(Fig. 7)*. These concern:

Map: Map view
Satellite: satellite view
Hybrid: satellite view with overlayed road map

Fig. 7. **Buttons for changing the type of map (present authors)**

A scale is located in the lower left area and an overview of the map is given in the lower right area. The georeferenced objects stored in the database are shown on the maps by arbitrary icons. A mouse over icon function delivers information of the object like address, picture with links or a detailed description.

Center

The coordinates (latitude, longitude) are shown. The administrator can use the *[add to DB]* function in order to insert an object into the database.

Search in Database

Objects, regions or cities can be searched for. If search failed, it is announced by „*Nothing found. Try again*". In this case the inserted text should be checked or replaced by a different request. A successful search represents 10 results per page which could be selected in a list *Fig.8*).

Fig.8. **Search form and results for query "kultur dom" (present authors)**

The check mark in front of the results allows to fade in or to fade out the corresponding object on the map. The function *[hide all]* hides all objects on the map whereas *[show all]* makes all objects visible. In the case, that the georeferenced object is a company (e.g. a hotel), it will be indicated by square brackets on the map. An arrow appears on the map when moving the mouse over the results showing the corresponding object. A click opens the bubble with details.

Search by Google's Geocorde

This function allows the search for an arbitrary address *(Fig.9)*. The input has to be done in the sequence *street, city, region*. Maximum five results are displayed. In this case the request should be specified. There are also functions *[hide all]* and *[show all]* as in the aforegoing part *Search in Database*. The administrator can insert data via the link *[add to DB]*.

Search by Google's Geocorder i

stary smokovec, sk | Go! |

Found 1 result

☑ Starý Smokovec, Slovakia

Fig. 9. Google's Geocoder form

Inserting data into the database

The administrator can add entries into the database. This is carried out by the function *[add to DB]* in the window *Center* or *GeoCorder*. The link *[Add to DB]* opens a new window. *WETIS* tries to adopt the data from Google (Fig. 10). After having filled-in the fields, the input is finished by *OK* followed by the conformation of the entry. The object is shown after a refresh of the main page.

Center (Lat, Long)

49.2552574, 21.6073608 [add to DB]

Fig. 10. The admin tool link (present authors)

Conclusions

The *WETIS* portal provides information on villages and towns in E. Slovakia. It contains data on history, services and also provides images of objects of interest. The *WETIS* portal in an ongoing project that will reach its full information capacity (nearly 1000 settlements) before 2014. In future, it could be expanded to other regions, too. Alongside with this project, the GIS_TOUR project (Timcak, Vizi 2006) is running, but GIS on the web is a far more demanding project than the WETIS.

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