OpenStreetMaps as Alternative Digital Source Map

Interreg IV B NSR Project "Waterways for Growth"

The need for map-based presentations of portal contents in the Internet remains high. However the issue with maps and their Internet presentation goes hand in hand with a series of problems, which can only be comfortably solved by very few suppliers. The most important problems are the scope of use, the transformation of coordinate systems, the completeness (covered area, standards, sheet line system, etc.), the actuality and variability (techniques, formats etc.). Aside from the commercial suppliers Google maps, Bing maps etc. the only serious alternative is the OpenStreetMaps Project (OSM).

What are the essential pros and cons of the OSM-maps in comparison to the commercial concepts such as Google maps? The advantages of **Google maps** can shortly be summarized: *cost free, international, professional, comfortable* and *fast*, which are coupled with a series of disadvantages:
A. Actuality of the maps / aerial photographs: copyright issues / date says nothing about the actuality of the data. As an example, from the Federal State of Bremen the aerial photograph used is from the year 2003. This map does not show the touristic major projects from the last few years in the central picture of the city.
B. Quality and accuracy of information on the maps: *Problem map entries:* in respect to soft information (restaurants, hotels etc.) there is a numerous amount of old or incorrect entries.
Problem community-entries: For a long time the community-entries were especially considered an additional benefit in the eyes of a broad mass of Google maps users. However the clear identity of the sender and with this the quality of the entries mingle to become a wasteland of information and data.
C. Terms of use for Google services: *Problem legal security:* For many Google map users the terms of use are too noncommittal. Both in the scope of ones own terms of use and in the intervention rights which Google grants itself.
Problem Google API: Free use of the maps is coupled to Google's own API. Despite the advantages this aspect is often considered a double security of Google, which is imposed upon the operator. Additionally it also limits extended presentation forms.
Problem broader use: Google Maps „API Premier" must be used for advanced services resp. closed/non-public applications. Indicated yearly costs starting at 10 thousand Dollars.

The advantages of the **OSM-maps** can be summarized as follows: *Cost free / copyright free, international, flexible, detailed, integrative (community-approach) / extendable / individual*, *exportable* and *specialized*.

Cost free/copyright free: The legal situation is clearly defined by OSM. The maps can freely be used. With this in contrast to Google Maps a map section can for example be used for any purpose and can also be printed out. Mandatory is only the origin of source and the right of further usage by others.

The maps are flexible: Should for example a new street be built, this will only show up on Google Maps months and sometimes years later. In OSM the insertion is completed with a few clicks and the update time is established within a few hours.

Richness of map details: OSM-maps have a high level of detail possibilities. Aside from streets, bicycle paths, pedestrian and shopping zones, bars, restaurants and all other important local information can be included on the maps. With this a creative realm for an unlimited number of specialized theme maps is given.

Special OSM derivate: OSM-data Indicated as „preprocessing", has evolved to be special services and theme applications. Some of these are for example, OpenSeamaps, OpenRouteService (ORS), OSM-3D.org etc.

Integrative, expandable, individual: In accordance to the Web 2.0 approach OpenStreetMap is a participating approach, which can be integratively extended by persons or institutions. Due to this, regional highly specified information is possible.

Export of map pictures / partial data records: A far-reaching also commercial use of OMS-data is possible through the export possibility of picture materials and the various base data in XML format. With this, data for free navigational systems can just as well be used as for proprietary navigational systems. Picture data is offered in common export formats through rendering-tools.

In contrast what are the essential disadvantages of OSM? On the one hand the project carries the tendency of becoming a vast Moloch and on the other hand of losing itself in a vast number of partial projects. However the main challenges lie in the *completeness, technique / infrastructure, error / manipulation* and the *complexity*:

Completeness: Because the OSM-maps are a participation project. This enables the maps to be very detailed in the population centers in contrast to the rural areas. The OSM-community tries to deal with this matter through targeted *mapping events*.

Technique / infrastructure: The OSM-project is dependent on community-help and donations. Due to this the project cannot match Google or Microsoft especially in the fund intensive areas such as software updates, server farms etc. This becomes evident in the access times and admin-tools.

Error / manipulation: Each registered user can make changes to the source map. There is no automatic protective mechanism against errors or misuse. However, errors can be corrected on OpenStreetBugs with other users.

Complexity: Not everyone is immediately able to make entries to the OSM-maps, because the necessary knowledge level (technique, know-how etc.) is relatively high in comparison to other Web 2.0 projects.

Conclusion: The OSM-project is an alternative. This is evident through the centralized participation approach and also through the professional map presentation. OSM is flanked by further developments, which already currently exist through central co-operations (Wikipedia, Apple-/iPhone-Apps, Android-Apps, Windows Mobile-Apps, Microsoft Bing Maps etc.). With this OSM will probably be the Internet „map“ of the future.

http://www.openstreetmap.org/