



MapServer for Dummies

A Business Opportunity
called

ne@poljs
powered by tydac

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1 Abstract

There are basically two ways to look at web mapping: from the server side as a programmer and from the client side as a user. Both, Map-Servers as well as applications, lack in over 90% of the cases dramatically of usability. Setting up UMN MapServer (and as well other Map-Server packages) reminds one of good old assembler times ...

Set the case you manage that, the way to create applications turns out to be lengthy and tough. Finally, if one achieves to put "something" online, it usually lacks severely of usability. And shouldn't a web-mapping application also be eye-catching?

We at TYDAC felt challenged by that, which turned out to be a great business opportunity!

2 Who is TYDAC?

TYDAC, founded 1991 and based in Bern, Switzerland, has gone on to become a leading GIS company with over 450 clients across Europe who are using TYDAC's solutions in many application areas including forestry, planning, geomarketing, environment, telecommunications and so on. Today TYDAC builds its own solutions as well as it integrates leading technology such as from MapInfo, ESRI and Safe Software.

TYDAC has up to date carried out over 40 intranet / internet mapping projects throughout Europe using as base its own product Neapoljs.

More about TYDAC: www.tydac.ch.

3 Neapoljs Background

"Neapolis" is Greek and stands for new city (nea= new, polis=city). We changed it to "New Technology Greek" and created "Neapoljs". The "js" stands for JavaScript, the technology used to develop Neapoljs. Putting your city maps in the Internet is creative like designing a new city (at least a virtual one) and as the world is anyway becoming a village the term might be used for any internet application using maps.

Neapoljs is a Web Mapping Content Management System as well as a Web Mapping Application Development Environment. Using Neapoljs you can create sophisticated applications within a few hours and, once the application is running, you can add new maps and functionality to it at any time within seconds!

Neapoljs is currently available for:

- UMN MapServer
- ESRI ArcIMS
- MapInfo MapXtreme

In addition, Neapoljs can be combined with the powerful data translation capabilities of FME SpatialDirect to create an easy to use and effective data shop or data distribution system.



4 MapServer for Dummies - End User View

4.1 "Quick, Dirty and Ugly" ...

A provocative title, but surfing the web and looking at Web Mapping Applications (the [MapServer Gallery](#) is a good start ...) you often experience the following:

- Most applications are developed by people suffering from the "ArcView Layer Syndrome"
- Standard response when you search for something is "not found"
- Most maps are not really "speaking" and are simply ugly
- The developers didn't see a Web-Designer ever
- Odd and unfriendly navigation functionality
- Online Help is an unknown feature
- If you run on low resolution such as 800x600 (still over 30% of the users) you don't surf - you scroll yourself to death

And so on ...

4.2 A better way to do it

A few hints on how to do it better:

- Use Maps, not Layers ... and avoid any GIS acronyms (such as "Layers" ...)
- Help the User searching, i.e. giving suggestions, lists and so on if something, such as a street is not found ...
- Spend some time on Map Creation ...
- Use a Web Designer ...
- Help, help and more help ...
- Ditch everything that is not needed and avoid any resizing and scrolling wherever possible, remember: more than 30% are still on 800x600 ...

In the examples below we'll try to show what has been done right and what has gone wrong.

4.3 How not to do it

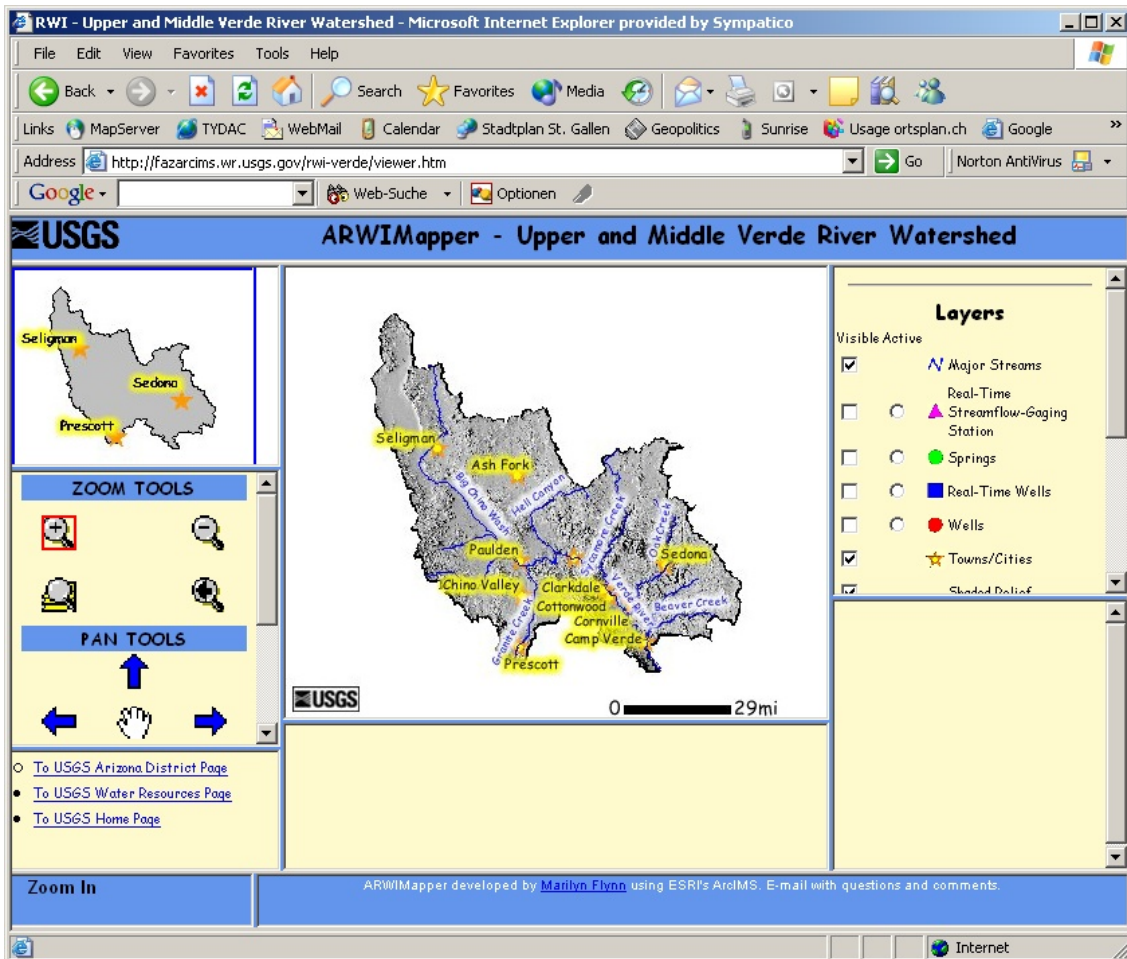


Image 1: Web Mapping - How not to do it.

What has been done wrong from a dummy point of view? ([Link to the application](#))

- Resolution: The image above corresponds approximately to a resolution of 800x600, and such an end user experiences the following:
 - the most important part: the map has the size of a credit card ...
 - she / he has to scroll to see and be able to use all functions ...
 - she / he has to scroll through the legend ...
- The icons of the functions (such as zoom in) are blurred ... please!
- The map is simply ugly. Why not spend two minutes on it?
- ArcView Layer Syndrome, and please what does "active" stand for?
- What is all this empty space for?
- Any help out there?
- And the Web Designer seems to be on a long holiday ...



4.4 A possible way to do it

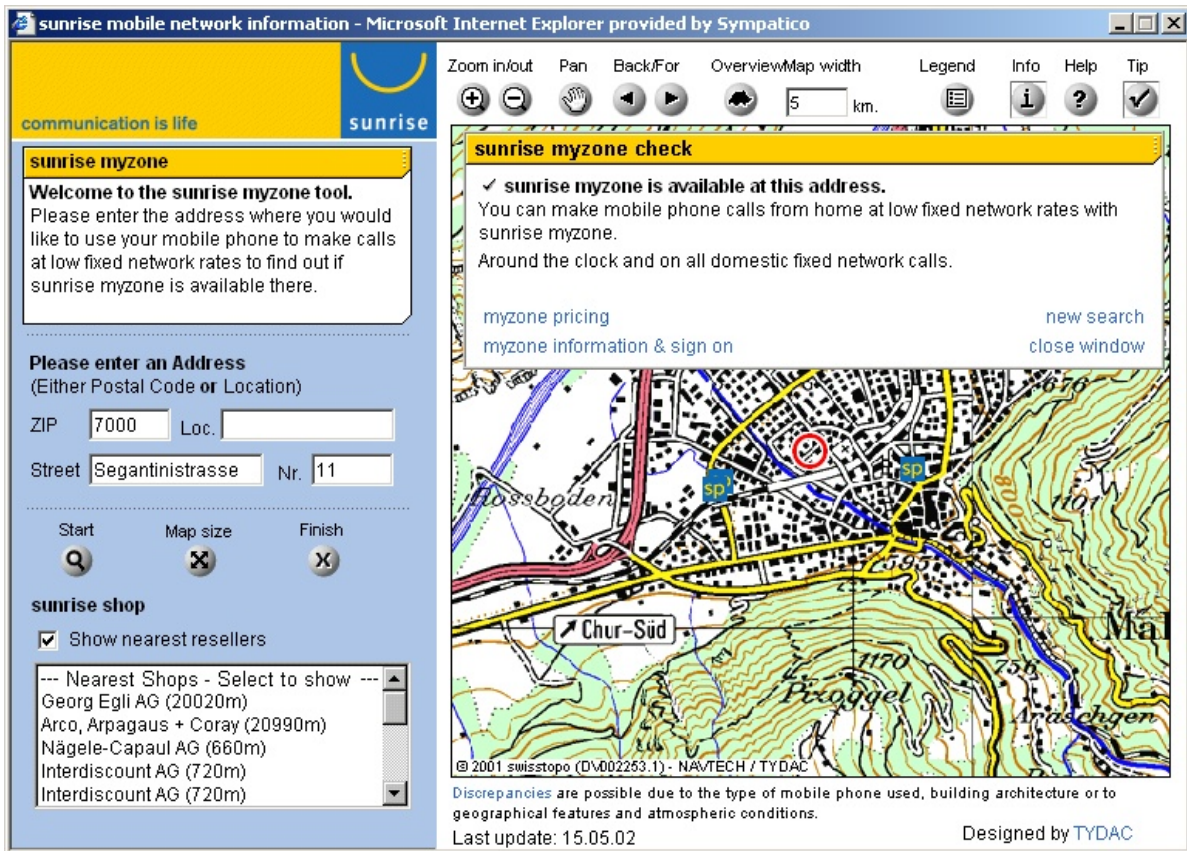


Image 2: Web Mapping - A possible way to do it

What has been done better here? ([Link to the application](#))

- Resolution: The image above corresponds approximately to a resolution of 800x600 and everything is perfectly visible:
 - The map has the maximum possible size as every unnecessary "junk" (such as all browser functions) has been removed. Remember: the map is the most important thing (corporate design should understand that too!)
 - There is no scrolling except where clear, suitable and not avoidable (List of Shops, bottom left).
- Clear and readable map.
- Clear, readable, and helpful information.
- Sophisticated navigation tools such as zoom in by using window and real pan, address search where you always find what you are looking for.
- Help: Extensive Tooltips to all functions (not visible in the image above), complete on-line Help.
- Extensive usability testing has been performed and web designers were at work.
- Additional goodie: Four languages supported (English, French, German, and Italian) and all accesses and resulting answers are logged.



5 MapServer for Dummies - Creating Sites

5.1 Headache ...

Again a provocative title, but setting up a web server, installing a Web Mapping Software and getting an application to run is quite a headache, sometimes even if you are a techie (this not only true for UMN MapServer, but as well applicable to products like ESRI ArcIMS and MapInfo MapXtreme). Typical issues are:

- Extremely complex installation: Web-Server, PHP, MapServer Software etc..
- Application Development skills are a must as the out-of-the-box stuff is just ugly.
- Creating comprehensive Maps is unavoidable.
- Creating Symbols, Icons, Graphs etc. is inevitable.
- Sophisticated functionality, such as PDF print, sophisticated querying capabilities and so on have to be developed from scratch.
- Poor, missing documentation; or the opposite: too much documentation!
- Web Design Skills are definitely necessary.
- You might want to define different Users and Groups.

And so on ...

5.2 Some Aspirin ...

What about if you would get something like that?

- An easy and understandable Setup Routine that would lead you through the installation from A to Z or better W to W (means from Web-Server to Web-Mapping).
- A Content Management System that would help you to set up the site.
- Tools to create Maps from within your Desktop Mapping Software such as ArcView or MapInfo Professional .
- An extensive Collection of Symbols.
- An extensive Collection of Templates to choose from for the GUI.
- A Documentation that deserves the name.



6 Here it comes: The Business Opportunity

All of the above said, one sees following headaches coming along, if one starts off from scratch setting up a Web Mapping Application:

- All what has been said under 4 from an end user point of view.
- All what has been said under 5 about creating sites.

What, if there would be something that would take care of everything? There is where we saw a great business opportunity coming our way. One we called "Neapoljs".

6.1 Neapoljs - A bit of History

All started in 1998 when MapInfo released MapXtreme and we started to play around with it and eventually realized the potential behind Web based Mapping Applications. Already in early 1999 we developed an application for diAx (today sunrise), a Swiss telecommunication company and later on we won a contract to create a site for the City of St. Gall. The first releases already allowed the client to configure the application himself, such as being able to add maps and search options using an Access Database. However, the User Interface was built in Java and was therefore pretty static and not easy to change. In addition, personally, I always had an aversion against Java. Therefore, in 2000 we decided to port the basic application to DHTML and JavaScript to make it as flexible as possible: Neapoljs was born.

Neapoljs evolved and eventually was ported to ESRI ArcIMS and UMN MapServer in 2001. About 40 applications were created using Neapoljs as a base since then across Europe. However, it is still mostly based on an MS Access GUI or a PHPMyAdmin "sort of GUI". In addition, based on client requests, a lot of functionality was added, and, to be honest, Neapoljs started to become a bit of a patchwork. Finally, in 2004, we decided to rewrite Neapoljs from scratch and to create a database independent administration front-end - better: to create a web based Web Mapping Content Management System. Neapoljs WMCM was born.

6.2 Overview Neapoljs WMCM

Looking back we had six years of experience creating Web Mapping Applications and most of the clients needs were integrated into Neapoljs. The new version, however, should cover even more needs and our aim was to create something even enabling our sales people to create and administer a site ☺.

The functionality of Neapoljs WMCM includes (see tree on the image below):

- Ability to create sites from a wide choice of design templates
- Language support
- Support for optimized GUIs for different screen resolutions
- Ability to change the position and look of any element on the page and to create custom templates
- Administer and organize maps and layers
- Administer all kind of search options
- Support for legends

- Administer the info tool (query data capabilities)
- Sophisticated printing using HTML and PDF output
- Support for users and groups
- Advanced logging functions

Example: Creating sites from templates:

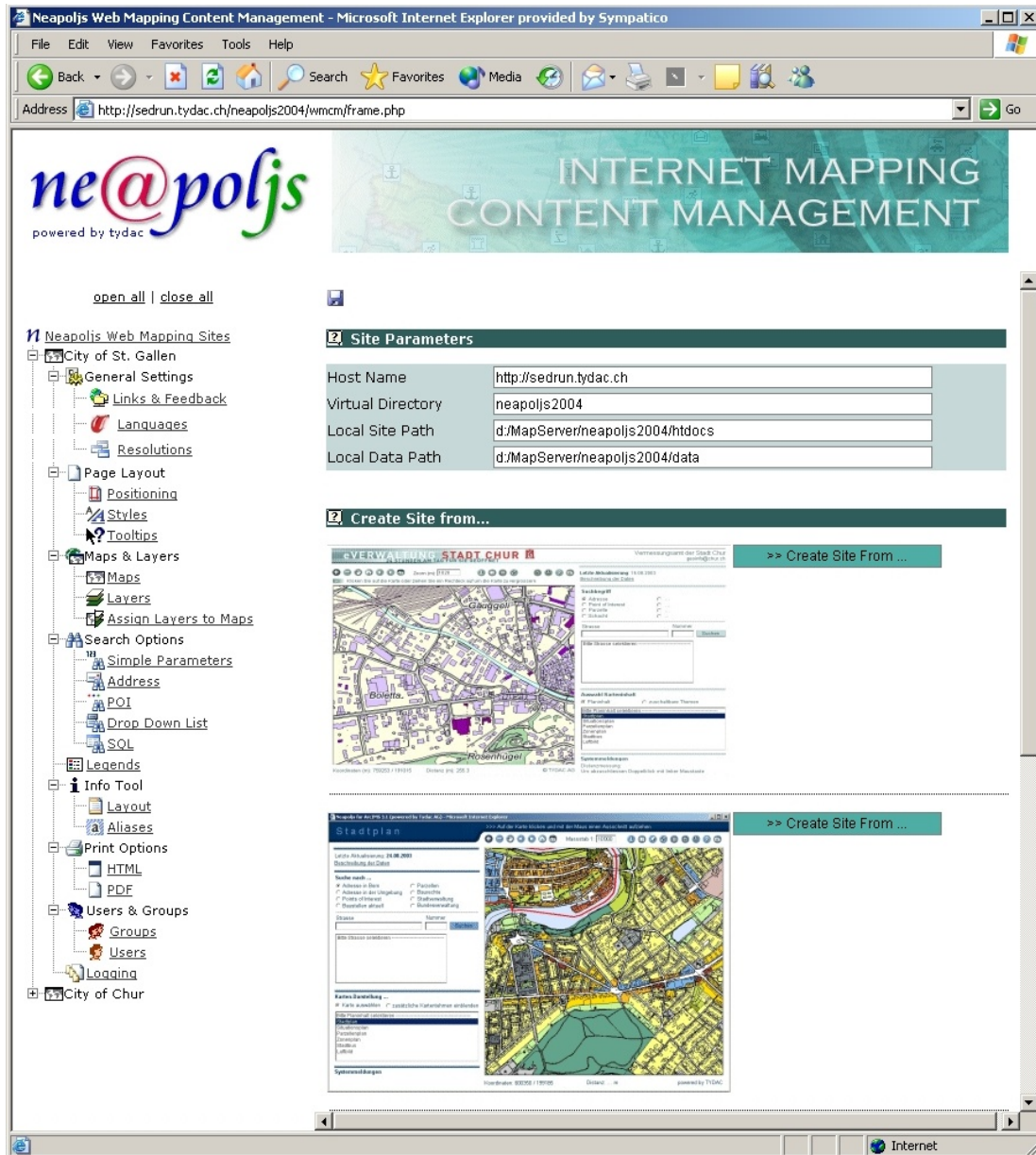


Image 3: Neapoljs WMCM, Creating Sites from Templates

We plan to release Neapoljs WMCM end of August 2004. Stay tuned on www.neapoljs.com.



7 Appendix: Neapoljs Samples

7.1 Swissgeo - Your Guide through Switzerland

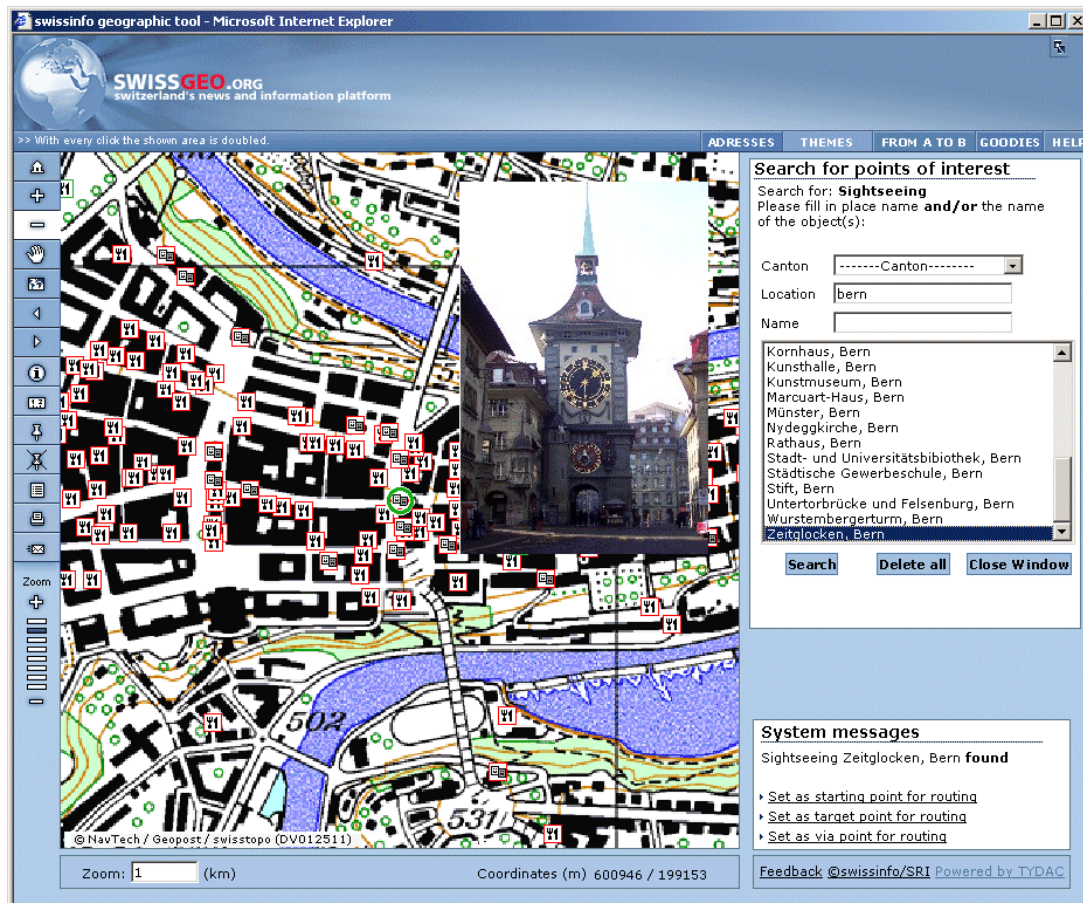


Image 4: Swissgeo - Your guide through Switzerland

Swissgeo is the most complete online Geographical Information System about Switzerland. The really impressive part of the application is the wide collection of points of interest and the related information coming along with them:

- **Tourism:** Hotels, Castles, Tourist Information Offices, Camping, Youth Hostels, Bars etc.
- **Culture:** Museums, Theaters, Sightseeing, Breweries etc.
- **Entertainment and Sport:** Skiing Areas, Alpine Huts, Wellness, Thermal Bath etc.
- **Mobility:** "real-time" traffic situation, webcams, gas stations, car rental, parking, routing etc.
- **Nature:** lakes, waterfalls, mountain peaks, zoos etc.
- **Services:** pharmacies, hospitals, cash machines, universities, libraries, embassies etc.

The application is available in **10 Languages (!)**: Arabic, Chinese, German, English, Italian, Japanese, French, Portuguese, Romanic and Spanish.

7.2 GeoPolitics - Over 30 Years of Democracy online!

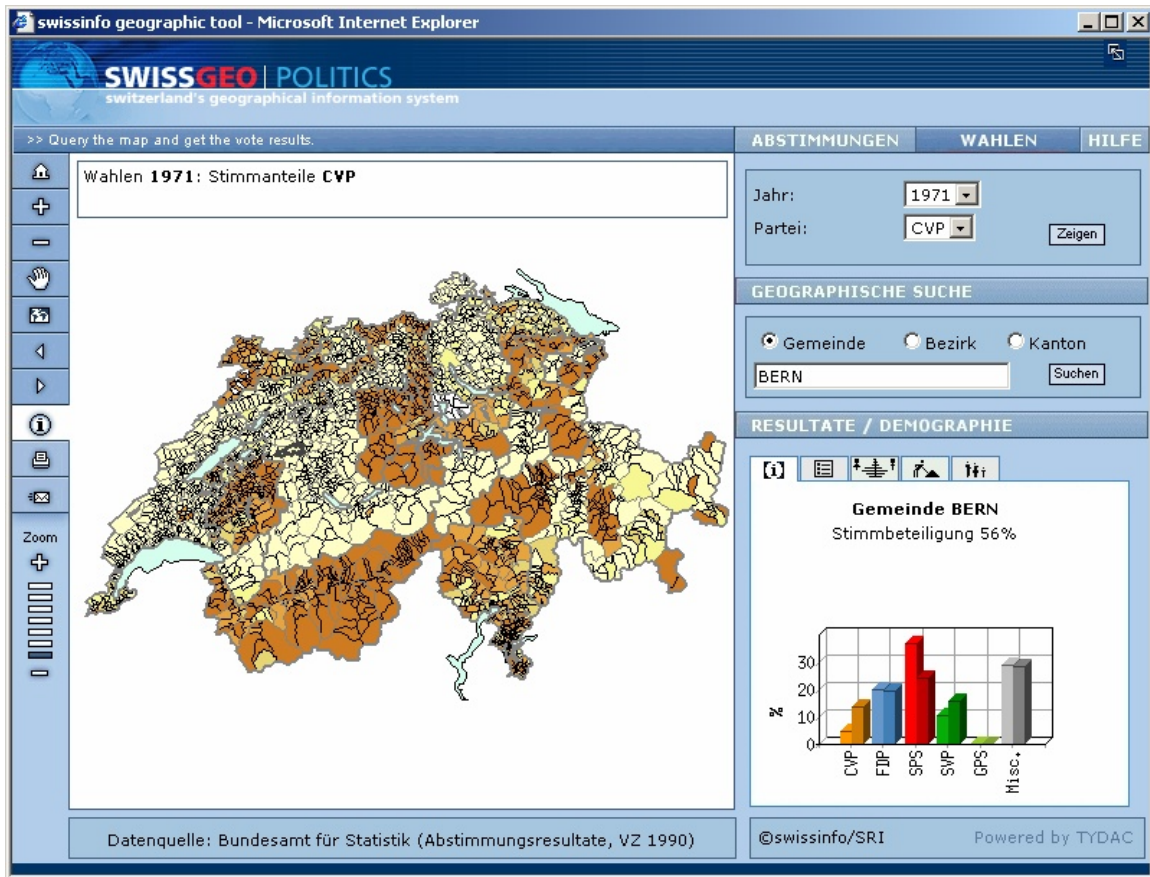


Image 5: GeoPolitics - 30 years of democracy online

Switzerland is known as one of the oldest democracies in the world. Fact is that we have referendums about more or less important things taking place almost every month. GeoPolitics is a review of all elections since 1971 (means since we made the mistake to allow women to vote ☺ - that's how old the democracy really is ...) and of all referendums since 1981.

The application allows you:

- To search for any referendum by year or keyword and visualize the resulting thematic map
- Search and see the results on a canton, district or commune level (over 3'000 communes) along with diagrams about age, employment and household size
- See all elections since 1971 for the five largest political parties

The application is available in the four national languages.



7.3 The most complete City Guide: St. Gall

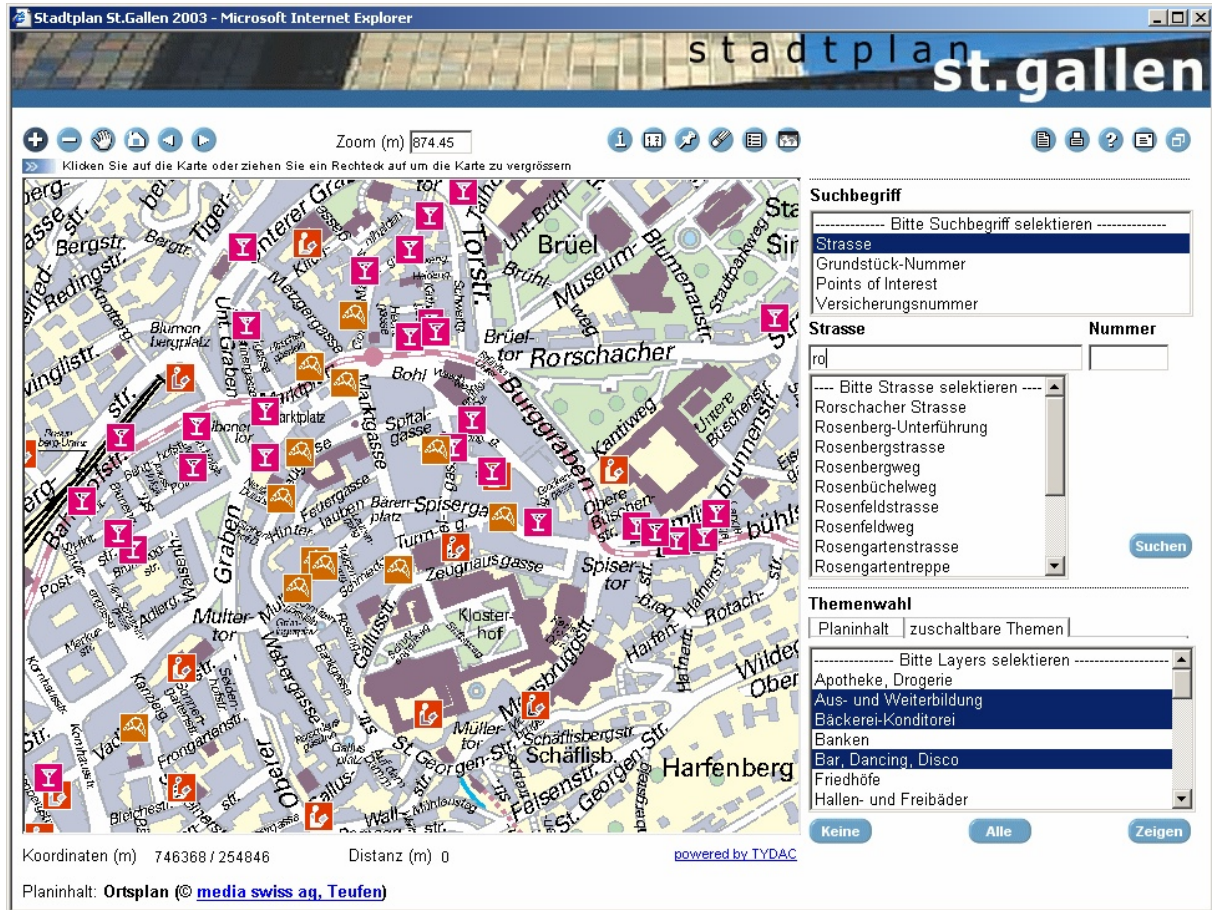


Image 6: 7.3 The most complete City Guide

The amount of geographical information published on this site is with over hundred different maps simply mind-blowing:

- Historical maps since 1830
- Surveying, Parcels
- Land use, planning, protected areas
- Arial photos, City map, Bus lines
- Noise cadastre, street maps, mobile antennas locations, garbage collection locations and so on

In addition one can search and display thousands of Points of Interest, such as even bakeries, butcheries, kindergartens, banks, cinemas, kiosks and so on.

If one moves to St. Gall, there is no question that this application can't answer!



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Flavio Hendry is civil engineer by profession and has over fifteen years experience in the field of GIS. After a few years working in the civil engineering field, all started 1988 within IBM meeting up with a product called SPANS, which made him start up his own company in 1991 using the same name as the former Canadian developers of SPANS: TYDAC, based in Bern, Switzerland. During in career in GIS he gained experience in many application areas, such as forestry, planning, geomarketing, environment, telecommunications and so on. As CEO at TYDAC he is currently mainly in charge of Web Mapping Application Design, the TYDAC Web Sites and helps out in marketing, technical support, teaching etc.