

# Analysis of Web Site Portals in some Local Authorities

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## ABSTRACT

The goal of this paper is not to make some statistics regarding web sites in local authorities, but to examine the more innovative portals. In other words, the goal is to analyze the types of site organization and the metaphors on which the sites are constructed by presenting virtual cities.

This quick analysis shows the diversity of approaches (verbal menus, visual menus, virtual cities, hypermaps, etc.) in order to foster a dialog between citizens and local authorities staff and officers, in a perspective of e-democracy.

This article gives some research tracks non only to assess the requirements for the design of web sites in Local Authorities, but also about city governance for which web sites are major tools.

## 1. IMPORTANCE OF WEB SITES

Nowadays, all big cities have a web site. The objective of this paper is not to make a detailed study about their contents, but to examine their organization and underlying assumptions: indeed those choices illustrate very clearly the priorities in terms of governance.

The metaphors are becoming a structuring element for software design and applications. For instance, the screen of the first MacIntoshes were designed with the desktop metaphor. Then, nowadays, practically all existing operating systems are not only visual, but also based on this metaphor.

Those metaphors used in Local Authorities portals reveal the type of relationships with the public, and are a track to follow for e-government and e-democracy. When designing a web site, it is interesting to pose the following questions:

- What is the mission of the organization, and what kinds of services to provide?
- What are the potential users, what are they profiles, and what are they looking for?
- What image to confer, what information to give?

In additions to those considerations, we have to take levels of development and cultural aspects into account.

In this paper, we will analyze only portal contents and organization. Including an item into the portal is assuming that it is important, and that it will act as a major entry point. For instance, if a city include "sports" in the portal, it means that this activity is very important for the responsible. Of course, the design of web sites is sometimes sub-contracted to specialized companies which re-use or impose their know-how to local councilors at the detriment of the image they want to confer. In addition, some politicians underestimate the importance of web sites letting the designing and updating to technicians, whereas a web site must be a key-item in a consistent communication policy for governance.

This rapid analysis was made from a selection of big European and North American cities without completeness. We will give more emphasis to novel aspects, that is to say revealing uncommon and promising visions.

We will not analyze graphic quality of portals in which city logos and emblems are often given, together with the picture of the more famous monument, and a location map in the country.

We will successively analyze the category of users, and the more promising metaphors.

## 2. USERS

During the design of the first web sites, it was relatively difficult to know exactly who the users were. Now, several Local Authorities have constructed their own web site, this task is easier. So, we can distinguish:

- citizens and city-dwellers
- staff
- tourists
- providers and customers
- investors
- home seekers.

### Citizens and city-dwellers

For web site level, the city-dwellers can be considered as citizens, and potential electors.

#### *A/ citizens*

For administrative matters, the citizens must know the rights, and the places where they have to go to fill forms. Now, the forms can be filled through Internet. Anyhow, the administrative machinery must be totally reorganized in order to take these new characteristics into account.

In local authorities, the description of the departments is not always given, and the names of the department heads are provided only very rarely. The barriers between the municipal staff and the citizens still exist.

Interesting examples are the land use plans in Torino\*<sup>1</sup> and Salerno\* in Italy in which all citizens can know their rights regarding their plots, or the rights of the plots they intend to buy.

Regarding online-permitting, practically nothing is done in France. In the US, several cities are offering this kind of services (for instance : Indianapolis (IN)\*, Houston (TX)\*, Syracuse (NY)\*, etc.) See also the State of West Virginia\*). This functionality can present different levels:

- at minimum to inform about the status of a conventional dossier delivered in the municipality,
- to make possible to fill e-forms, and to send huge documents conventionally to the city hall
- or to include scanned documents.

In Geneva\*, they call it "*interactive state*" instead of e-government.

An interesting aspect is the multilingual capability. See for instance Seattle (WA)\* which propose Chinese, Spanish, French and Japanese portals in addition to the English one. See also Barcelona\* and Swiss cities.

### **B/ potential electors**

The portals of several US cities show a picture of their Mayor (Atlanta (GA)\*, Chicago (IL)\*, Richmond (VA)\*, Houston (TX)\*, Seattle (WA), Washington (DC)\*, etc.), so giving the majors the possibility to deliver a short address. This message can be still the same during time (for instance about the importance of the web site in the municipal strategy), or to be modified according to circumstances. Some cities give a short biography of their Mayor (Los Angeles (CA)\*). See also the site of Barcelona\* in which a certain level of Mayor personalization is present..

I have discovered no French web sites in which the Mayor uses the direct medium with the citizens. This situation perhaps reflects a cultural gap between elected people and citizens.

Some portals give the details of Local Council minutes (Cardiff\*, Savona\*, Strasbourg\*, etc.), and budget (Brescia\*, Geneva\*, etc.).

### **C/ other aspects**

Many cities deliver public information: almost all give the lists of cultural and sportive events. On some sites, sportive results are given.

Urban risks are also present in some places. The example of Genoa\* concerning landslides (Figure 6) in one of the more interesting. See also Minneapolis (MN)\*, Montgomery (AL)\*, Fresno (CA)\*, San Antonio (TX)\*. After the September 11, 2001 attack, several cities have included information relative to terrorism protection (Baltimore (MD)\*, Boulder (CO)\*, Miami (FL)\*, San Diego (CA)\*. The Freiburg\* site gave information about anthrax in October 2001.

### **Staff**

For staff, generally an Intranet is made for their work, and so it is not accessible from outside people. This kind of functionality is not analyzed here. In this category, we can nevertheless include the persons interesting by being employed by a local authority: some cities have a list of available jobs (Boulder (CO)\*, Charlotte (NC)\*, Lynchburg (VA)\*, Minneapolis (MN)\*, Phoenix (AZ)\*, Sacramento (CA)\*, etc.), sometimes with online job application form.

### **Tourists**

Tourists represent a moving population to attract. Let us remind that in some cities, tourism is the number one activity. For that, tourist offices propose lists of landmarks, museums, etc. to visit, giving opening hours, prices, together with restaurants and hotels. For instance, see: Venice\*, Florence\*, etc..

### **Providers and customers**

Commercial relationships are more or less absent in French Local Authority sites. In Italy, for instance almost all sites present a major access to opportunities for bids and contracts. Same things in Spain.

### **Investors**

Whereas the majority of city councilors affirm to give a paramount importance to local business, in France, practically nothing is done, except sometimes by means of local Chambers of Commerce.

For investors, it is very possible to give a list of vacant industrial areas, to list the potentialities of local banking, to exhibit detailed maps.

### **Home seekers**

Attracting new city-dwellers is also an important aspect for city governance. But alas few sites are giving an exhaustive list of plots, vacant houses, or allotments in course of development, whereas realtors are only listing or mapping what they have in stock. But apparently no city is giving a complete list of real estate companies.

### **Uncommon information**

This analysis has also showed other uncommon contents:

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<sup>1</sup> The URL's of city names followed by an asterisk are given at the end of the paper.

- Pavia\* gives a copy of Euro notes in their portal ; indications about Euro are also present in Melilla\* and Bordeaux (maybe, they will disappear in early 2002);
- some cities give their local temperature (Novara\*, Leicester\*, Newcastle\*, Southampton\*, Vicenza\*, etc.); Leeds\* presents 4-day forecasts;
- Chambéry\* gives a list of local celebrities;
- Besançon offers information regarding tobacco and teenagers;
- Glasgow\* has a web camera over the city;
- Bergamo\*, Cambridge (UK)\*, Birmingham\*, Pisa\*, etc. have a research engine;
- Norfolk County was presenting its condolences for the September 11 New York attack victims during a few weeks;
- Padua\* proposes to access to the portals of its twin cities;
- Bergamo\* proposes an access to Italian constitution and laws directory;
- Neaples\* allows the access to professional orders (architects, engineers, etc.);
- Manchester\* welcomes complaints or compliments on its services;
- etc.

Now that the need requirement is partially achieved, let us try to analyze metaphors structuring web sites.

### 3. MAIN METAPHORS

According to the Merriam-Webster dictionary, a metaphor is "a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between them (as in drowning in money)". In computing, it means using an analogy for designing a system, or especially its human interface. For instance, the metaphor of an office initially proposed by Apple, is now commonly used in interface design.

Recently, considering the evolution of technology (especially the Internet technology) and its incidence on cartography Cartwright (1999) has proposed to extend the map metaphor using delivered multimedia. So, in addition to maps, he gave nine metaphors for displaying geo information. These metaphors are seen to offer access genres that are complementary to the use of maps, and are, thus, intended to be used in conjunction with maps:

- **storyteller**, by which a user is being told about the geography of a designated area, for instance its evolution;
- **navigator**, by offering a tool to assist users in finding where information is located; more particularly this metaphor will give support for users who were not good at interpreting abstract models, including maps;
- **guide**, when assuming that the user has, neither prior knowledge of the area being portrayed, nor the ability to effectively navigate through individual scenes;
- **sage**, as a metaphor suggests access to expert advice or information that provides support for decision-making or information appreciation; by using hot links, the user can get immediately answers to his interrogations; this metaphor is similar to clickable hypermaps;
- **data store**, by linking to other information about the area under current investigation, without needing to display all of this information;
- **fact book**, by enabling access to a plethora of facts, both about an area under study and other areas about which comparison might have to be made;
- **gameplayer**, by offering things such as map-building game that allows users to learn the grammar of mapping; the goal is not to play the game, but to use gaming skills to explore geographic information;
- **theatre**, which is based on a stage, players and a script; the stage is the three-dimensional space (plus time), the players are the things that occur on the stage, or the elements of the landscape, and the script can be written either by the product author, or interactively by the user;
- **toolbox**, by offering a set of tools to users, perhaps to make decisions or to explore information.

Those metaphors can be interesting in order to organize information and applications by a potential users. A key-element often required is to use only a single consistent metaphor during an application. When it is necessary to change metaphor, the user must be informed about this new way of structuring.

Apparently, those metaphors do not seem to be very well used in constructing local authorities web sites, even if some of them can be deeply embedded. The made analyses show that the majority of them hesitate between something like a municipal journal to tourist booklets. Regarding portals, the following distinctions seems to be more relevant:

- a totally verbal menu
- a visual menu
- a virtual city
- a hypermap.

Let us examine all of them.

#### Verbal menu

The totally verbal menu, i.e. with hierarchical lists of provided services is not very frequent whereas it was common at the early beginning, especially for those using HTML language; presently, the new languages allow more flexibility. So, more and more portals are illustrated by adding drawings or pictures, or regrouping services by category. In France, the Minitel style is no more in use, and homepages are going to some sort of presentation pamphlet: the web site is no longer seen as a guide for administrative matters, but moreover as a multimedia booklet more elegant and more sophisticated. The Lyon\* portal is a good example (Figure 1) of elaborated textual menus. See also Miami (FL)\*. The main advantage of a verbal menu is the rapidity for connection.



Figure 1. Lyon homepage (English version). Source : <http://www.mairie-lyon.fr/en/index.html>.

### Visual menu

Verbal menus are more and more replaced by visual menus. Figures 2 and 3 give homepages for Zurich Municipal and Milano\*. Let us examine Zurich Municipal homepage: the student hat seems to indicate a link to schools, but the apple meaning is not very clear: in reality, this is for health services<sup>2</sup>. In our culture, since the visual vocabulary is not totally standardized (in contrast with iconic languages such as Chinese, Egyptian, Mayas, and so on). To avoid this kind of problem, a hybrid combination of words and icons is generally used. See for instance Edinburgh\* and Lynchburg (VA)\*. An other example is Palermo\* homepage.

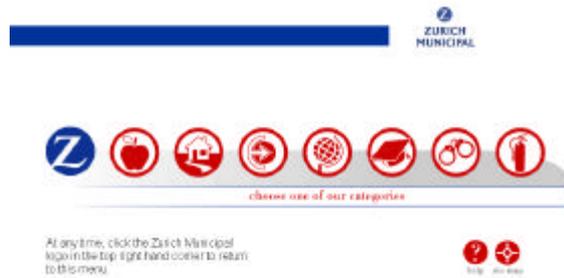


Figure 2. Zurich Municipal homepage. Source: <http://www.zurichmunicipal.com>.

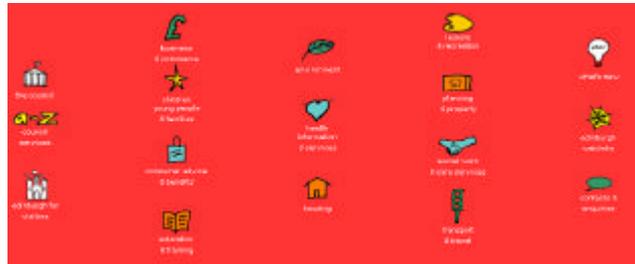


Figure 3. Edinburgh homepage. See <http://www.edinburgh.gov.uk>.



Figure 4. Bologna homepage. See <http://www.comune.bologna.it>.

### Virtual city

In another direction, there exist portals based on a sort of virtual city. An excellent example is the homepage of Bologna\*, Italy (See Figure 4). As pictograms such as train's or theatre's are meaningful, the interpretation of some buildings can be misleading. To correct this drawback, some words are added such as "ristorante", "shop" or "lex" (it is interesting to notice that in order to be understood for anyone, some "international words were selected", one of them is in Italian (ristorante), a second in English (shop)

<sup>2</sup> Initially, I believed that Zurich Municipal was the English version of the Zurich city homepage. In reality, I have discovered that it is a British insurance company (<http://www.zurichmunicipal.com>). Although this is not a city, this example is very interesting to analyze, overall because I've found no city with a complete iconic menu. For the city of Zurich (Switzerland), see <http://www.stadt-zuerich.ch/>.

and the last in Latin (lex)). However, I was intrigued by the spherical building right in the middle: it is the entry point for religious information; indeed a church pictogram should lead to Christian information, not valid for other religions: however the search for a very generic icon promotes the creation of pictograms the meaning of which are not clear. To conclude this paragraph, let us say that this approach is very interesting from a visual point of view, but presents some difficulties for interpretation, especially for people with alphabetic culture.

### Hypermaps

A very interesting way of organizing geographic information is to use hypermaps (Laurini-Milleret-Raffort, 1990, or Laurini, 2001), also called clickable maps. Figure 5 gives an example of a gridded map for Oxford\* (UK). Another example is given by the province of Genoa\* (Italy) for urban risks, especially for landslides and floods. For the English city of Dover\*, an hypermap allows the access to city councilors description through their districts. In Venice, Italy, an original entry system is provided through aerial photos (Figure 7).

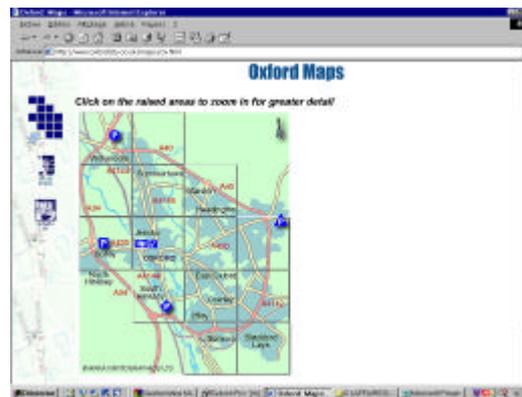


Figure 5. A gridded hypermap for Oxford\*. Source: <http://www.norfolk.gov.uk>.



Figure 6. Genoa\* hypermap for risks. Source: <http://www.provincia.genova.it/pdb/pdb03.htm>.

## 4. CONCLUSIONS

The original goal of this paper was simply to show this importance of metaphors in portals for Internet sites of Local Authorities. Only by studying presentation styles of some cities, we showed the diversity of approaches, underlining pioneering experiences, and providing more interesting examples for future website designers.



Figure 7. Homepage of Venice, Italy based on aerial photos. Source: <http://www.comune.venezia.it>.

This paper also stress the importance of relationships between city officers and citizens. We can say that today only the direction city -> public is in use. Not common are the cities with a real direction public-> city: there are often limited to webmaster messages, on-line permitting and complaints. The initial steps of on-line permitting allow to envision decisive steps for e-government. But generalizing e-government processes are a too challenging tasks.

However, we are far from a total interactivity with the public, like foreseen in forums and argumaps, as defined by Rinner (1999) or Laurini (2001), overall for opinion exchange in urban planning.

To finish, let us quote Jakob Nielsen about homepages for companies, but I do think that some aspects are also valid for Local Authorities: "*homepages are the most valuable real estate in the world. Millions of dollars are funneled through a space that's not even a square foot in size. The homepage is also your company's face to the world. Potential customers look at your company's online presence before doing any business with you. Complexity or confusion make people go away. Of course, all other aspects of bad web design should be fixed as well, but if the homepage doesn't communicate what users can do and why they should care about the website, you might as well not have a website at all.*"

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## URL (VALID DECEMBER 2001)

### France

Besançon: <http://www.mairie-besancon.fr>  
 Bordeaux: <http://www.mairie-bordeaux.fr>  
 Chambéry: <http://www.mairie-chambery.fr>  
 Lyon: <http://www.mairie-lyon.fr>  
 Strasbourg: <http://www.mairie-strasbourg.fr>

### Italy

Bergamo: <http://www.comune.bergamo.it>  
 Bologna: <http://www.comune.bologna.it>  
 Brescia: <http://www.comune.brescia.it>  
 Florence: <http://www.comune.firenze.it>  
 Genes: <http://www.provincia.genova.it/pdb/pdb03.htm>  
 Milan: <http://www.comune.milano.it>  
 Novara: <http://www.comune.novara.it>  
 Naples: <http://www.comune.napoli.it>  
 Palermo: <http://www.comune.palermo.it>  
 Padua: <http://www.comune.padova.it>  
 Pavia: <http://www.comune.pavia.it>  
 Pisa: <http://www.comune.pisa.it>  
 Salerno: <http://www.comune.salerno.it>  
 Savona: <http://www.comune.savona.it>  
 Torino: <http://www.comune.torino.it>  
 Venice: <http://www.comune.venezia.it>  
 Vercelli: <http://www.comune.vercelli.it>  
 Vicenza: <http://www.vicenza.it>

### Switzerland

Geneva (ville): <http://www.ville-ge.ch>  
 Geneva (canton): <http://www.geneve.ch>  
 Freiburg: <http://www.fribourg.ch>  
 Zurich: <http://www.stadt-zuerich.ch/>

### Spain

Barcelona: <http://www.bcn.es>  
 Melilla: [www.camelilla.es](http://www.camelilla.es)

### USA

Atlanta (GA): <http://www.ci.altanta.ga.us>  
 Baltimore (MD): <http://www.ci.baltimore.md.us>  
 Boston (MA): <http://www.ci.boston.ma.us>  
 Boulder (CO): <http://www.ci.boulder.co.us>  
 Charlotte (NC): <http://www.ci.charlotte.nc.us>  
 Chicago (IL): <http://www.ci.chicago.il.us>  
 Fresno (CA): <http://www.ci.fresno.ca.us>  
 Houston (TX): <http://houston.onlinepermits.com>  
 Indianapolis (IL): <http://www.ci.indianapolis.in.us/dmd/permits/>  
 Los Angeles (CA): <http://www.ci.la.ca.us>  
 Lynchburg (VA): <http://www.ci.lynchburg.va.us>  
 Miami (FL): <http://www.ci.miami.fl.us>  
 Minneapolis (MN): <http://www.ci.minneapolis.mn.us>  
 Montgomery (AL): <http://www.ci.montgomery.al.us>  
 Phoenix (AZ): <http://www.ci.phoenix.az.us>  
 Sacramento (CA): <http://www.ci.sacramento.ca.us>  
 San Antonio (TX): <http://www.ci.san-antonio.tx.us>  
 San Diego (CA): <http://www.ci.san-diego.ca.us>  
 Seattle (WA): <http://www.ci.seattle.wa.us>  
 Syracuse (NY): <http://www.ci.syracuse.ny.us>  
 Richmond (VA): <http://www.ci.richmond.va.us>  
 Washington (DC): <http://www.washingtondc.gov>  
 West Virginia: <http://www.dep.state.wv.us/permitting/>

### United Kingdom

Birmingham: <http://www.birmingham.gov.uk>  
 Cambridge: <http://www.cambridge.gov.uk>  
 Cardiff: <http://www.cardiff.gov.uk>  
 Dover: <http://www.dover.gov.uk>, more exactly  
<http://www.dover.gov.uk/ddc/wardmap.htm>  
 Edinburgh: <http://www.edinburgh.gov.uk>  
 Glasgow: <http://www.glasgow.gov.uk>  
 Leeds: <http://www.leeds.gov.uk>  
 Leicester: <http://www.leicester.gov.uk>  
 Manchester: <http://www.manchester.gov.uk>  
 Newcastle: <http://www.newcastle.gov.uk>  
 Norfolk County: <http://www.norfolk.gov.uk>  
 Oxford: <http://www.oxfordcity.co.uk/maps/ox.html>  
 Southampton: <http://www.southampton.gov.uk>