

e-Catalunya: a social network platform

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Abstract

This article describes the e-Catalunya project which is an experience that has taken place in Catalonia (Spain) consisting in developing, setting up and using a social network platform to improve collaboration and knowledge management between professional collectives that work on public services related areas.

As a result of the project, an open source platform has been obtained, the ECAT platform, which supports different kind of communities with a highly configurable level of privacy. The platform offers a set of collaboration tools and a powerful administration environment that makes it easy to configure it to suit the different collectives' needs.

Since 2005 it is reachable at ecatalunya.gencat.net. It is considered as an innovative service being a key element in the strategy of the Catalan government towards providing web 2.0 based services in order to improve the transparency of administration and government and to increase participation of citizens.

Keywords

social networks, collaborative environments, software integration, middleware

1 Introduction

e-Catalunya is an initiative of the Department of Presidency of the Autonomic Government of Catalonia

(Spain) in collaboration with the Technical University of Catalonia.

The Autonomic Government has strong competencies in important areas of government and public administration like education, health or justice in Catalonia, which is an autonomy located in the North East of Spain that has more than 7.000.000 inhabitants, an extension equivalent to Belgium, two official languages (Catalan and Spanish), and a very active and collaborative society. Professional collectives or associations are numerous.

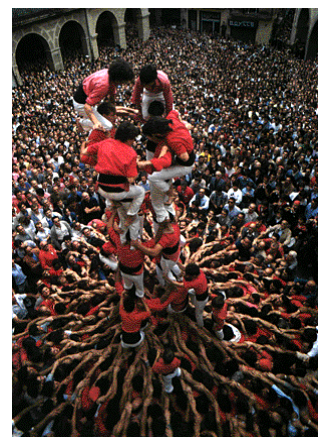


Figure 1: Castellers

Cultural facts of this collaboration spirit are the traditional dance of «Sardana» or the «castellers»: human towers that require hundreds of people to make them possible.

However, as in many western countries, citizens feel some distance with politicians and public administrators. Most of the times they ignore what is going on, they don't have the opportunity to give their opinion or they just think it is useless to do so.

In order to improve transparency and citizen participation, and to cultivate the knowledge society in Catalonia, several initiatives based in the latest Internet technologies were launched by the Autonomic Government. One of them was the e-Catalunya project.

Based on the success of blogs, services like wikipedia or social networks like linkedin, it was proposed to develop a collaborative environment based on open source software, that integrated web 2.0 tools like blogs, wikis or photo albums with social networking capacities. Strong requirements of data protection, security and information privacy had to be taken into account.

The project started by the end of 2004. The first pilot implementation was run in September 2005 and several new releases have been deployed since then. Software liberation to third parties will be done during 2007.

The platform was initially used by professional collectives but it is gradually being extended to other citizen communities. Nowadays e-Catalunya is being used to create collaboration spaces for people working in the Catalan health system, supporting start-ups, assisting the work of collectives dedicated to prevention of gender-based violence, supporting innovation projects, social family workers and other collectives in the Catalan public administration. It is also being used by Catalans living abroad or by citizens that are interested in some of the debates opened by these collectives.

The e-Catalunya platform is a key element in the strategy of the Catalan government towards providing web 2.0 based services.

2 General presentation

2.1 Structure

The platform is organized into several portals or communities embracing different collectives, including both professionals (artists, social workers, doctors, etc.) and citizens. Each portal may contain a hierarchy of groups/subgroups, with an unlimited number of levels inside.

Users may register to several portals and thus become members of them.

Within a portal, its members can interact, contribute, increase their social network or collaborate using tools like blogs, wikis, forums, email distribution lists, etc.

Collaboration normally takes place inside a group but some collaboration tools can also be associated to individual members (for example blogs).

2.2 Privacy and roles

Different privacy levels can be established at portal or community level, at group level or at the collaboration tool level. These privacy settings determine the information that a user can view and how he/she will be able to contribute.

In some cases information is available to unregistered users while in other cases it is totally private. The platform guarantees the different requirements.

Registered users can play different roles at different levels in the platform. At portal level, a user may be portal administrator, moderator or just a member. Portal administrators are able to manage all the components of a portal (users, groups, collaboration tool, statistics, etc.).

Additionally, there is a global platform administrator that can create new portals and decide who will be their portal administrators.

2.3 Groups

Inside a portal, multiple groups can be created with different users, privacy levels and collaboration tools. These groups can be established on temporary or permanent basis. Access can be restricted to members of the group or be public for the rest of portal members. Moreover, at group level, users may also play the role of group administrator, moderator or member.

Currently the available web 2.0 collaboration tools are blogs, wikis, forums, surveys, photo albums, group calendars, file repositories and email distribution lists.

- Blog: It is commonly used by users to share their experiences or opinions in a “diary” alike tool, as articles are published in a chronological order. When associated to a group it is normally configured in order to allow all group members to post new articles and comments. However, other configurations are possible (for instance to allow non members to comment the articles or to restrict article posts to moderators).
- Mailing list: Email based group messaging tool (with archive) that uses « sympa » as list manager. Lists are created and configured to be restricted to group members.
- Calendar: Supports activity scheduling and announcing. They can be configured in order to allow all group members to publish new activities (without moderation), to introduce comments to activities, etc.

- File repository: Supports file sharing, uploading and downloading files, and the possibility to add descriptions, keywords and comments to existing files.
- Wiki: Popular collaborative web-content publishing tool. It is based on « xwiki » software. It is normally used for collaborative editing as this tool allows all group members to easily create a set of linked pages that can be modified by any other member. It uses a wiki syntax for text formatting and to create new sections. It supports file attachments, user comments and a historic of the different document releases.
- Mailroom: It is a survey engine that allows administrators to set up different kind of surveys in order to gather information in brief from portal users or the general public using made-to-measure questionnaires. It may be used for carrying out opinion surveys or reaching a broadly agreed decision through votes cast by users.
- Photo Album: Image sharing tool.
- Forum: Popular discussion web tool based on PHPBB. It may be moderated.

However, the modular structure of the platform allows further new tools to be integrated.

2.4 Social networking

E-Catalunya is also a place to keep in contact and meet new people. Users can search in the directory of members, view other users' profiles, send them an email or launch an external instant messaging application to communicate with them. They can also see who is online or use the social network functionalities, which are probably the most innovative aspects of the platform.

The social networking mechanisms are based on information explicitly introduced by users (who explicitly disclose their social network) or on information obtained by the system.

In the first case, the social network of a portal member is based in his/her contacts, the contacts of their contacts, etc. up to a maximum of five levels of connections.

Users can establish direct contacts with other members of their community and they can later on explore their social network to meet people who are connected to their contacts.

The second case of social networking is called *knowledge network*. It is based in the implicit relations with other portal members that are built after performing an analysis of the activity carried out by each user of the portal, like reading documents, contributions added, etc.

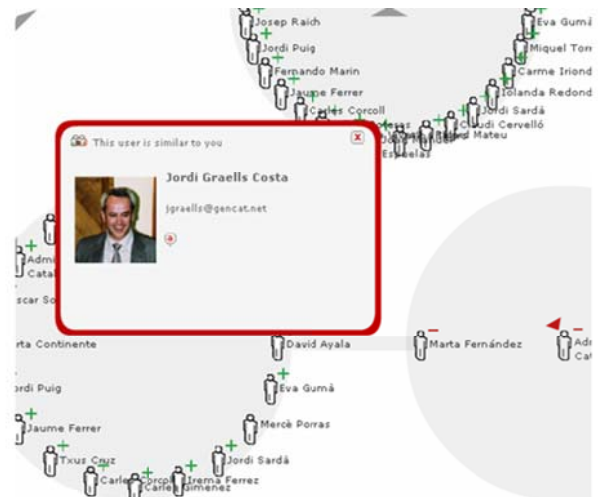


Figure 2: Social network: a place to keep in contact and meet new people

A user's knowledge network consists of his/her related users. The platform employs it for collaborative filtering recommendations on both content and people and for explicit visualization of the knowledge network.

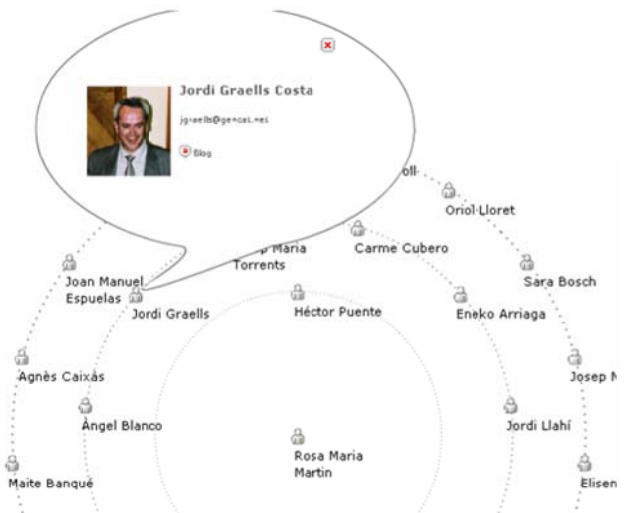


Figure 3: Knowledge network
Members can in this way obtain recommendations for contents (a post in a blog, a picture, a wiki document, etc.) that have been read by users similar to them.

2.5 Personal zone

Users can edit their profile (which is portal specific) and decide the level of visibility of their personal data (public, restricted to portal members, restricted to the user's contacts or private).

User contacts are managed from the personal zone. They will be included in the social network of the user and will have a special trust relation.

Portal members can also have a personal blog or other personal tools. They can configure if they want to receive notifications of new contents, new users or recommendations obtained from the knowledge network.

2.6 Indexation

All collaboration tools and its contents are indexed using «Lucene» in order to support simple or advanced searching. Search results are filtered depending on users' permissions.

The list of new contents or posts is also obtained from the index. It is displayed in a special section of the initial portal page and it is sent to users subscribed to news alerts via email or via RSS.

2.7 Administration

Group administrators can add or invite new users, configure the collaboration tools that will be used by the group and obtain usage indicators.

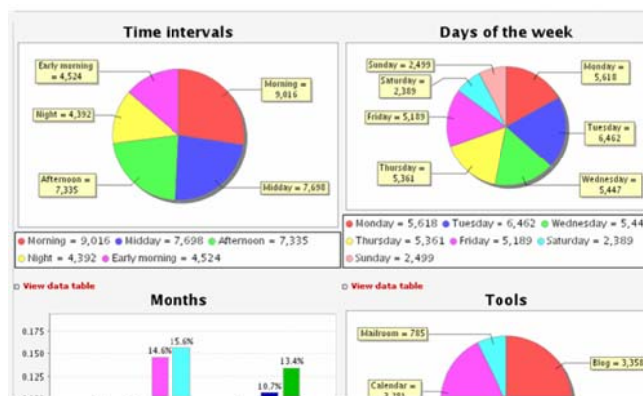


Figure 4: Group statistics

Portal administrator can configure the specific user profile for that portal, determine format for the mails and notifications that will be sent to users, create templates for groups, etc.

3 Cases of use

3.1 Main uses of the platform

E-Catalunya is mainly aimed to allow users to:

- Work together, expound, make themselves known, seek out information, establish relationships of trust with colleagues, make recommendations and comments. Basically communicate with other professionals in their field and with those who share their interests.
- Gain access to new content and knowledge generated directly by people and/or groups and, at the same time, contribute to that knowledge.
- Get involved in public participation initiatives, give their opinion, and make their voice be heard.

- Identify trends, reach consensus, start-up and consolidate projects.

3.2 The Justice Portal

Some of the portals have experienced a large growth and are currently very active. For instance, the Justice portal that started in December 2006 with a pilot group, agglutinated in Jul 2007 1.669 users working in 32 different groups.

Participation in this portal varies from 7% to 44%, depending on the group.

3.3 Family mediators

This was the first group created in the Justice portal as a pilot experience. Their members are mainly independent professionals that collaborate with the Justice administration in family mediation processes.

Inside this group members use blogs to analyze and discuss, news related to their profession which is quite new. They also announce activities related to their work. Every member of the group (more than 1.000) can post a new article or comment others ones.

It's also open to the public, in order to allow citizens to acquire an in depth knowledge of their profession.

One of their leaders is Nuria Villanueva who is a family mediator. She also has a personal blog in the platform where she collects family issues related articles published in the media.

Some of her readers are subscribed to her blog using RSS (a web feed format).

She uses a mailing list to distribute a weekly newsletter and to send reminders to the members of the group.

3.4 Penitentiary services

The artistic instructors from the penitentiary services of Catalonia have a private group inside the Justice portal. They use this platform to share ideas, knowledge and best practices with people working in similar jobs. Using the photo album they share images from the activities they develop. They also use forums to discuss and propose activities.

There are also some other private groups inside the Justice portal, with a reduced number of members devoted to the proposal and debate of alternative measures to jail or to some other specific topics.

3.5 Gender-based violence prevention

This community is devoted to the prevention of gender-based violence between the youth and is open to everybody interested in this issue.

They organize tutorials and activities that are published in a group's calendar. All the members of that group can publish new activities which may be of interest to the rest of the members.

Using the wiki tool they are collaboratively building a resource directory related with their work: books, computer games, movies, etc.

They easily upload and share documents using a file repository and they also make public surveys to open new topics for debate.

3.6 I2CAT portal for innovation projects

In the i2CAT portal several groups are associated to research and innovation projects where different universities and companies collaborate.

File repositories, wiki, calendars and mailing lists are the most popular tools in this portal. Each project manager acts as group manager and decides which tools he/she wants to set up.

It is also used to define new projects (objectives, tasks, etc.) using a wiki tool.

4 Software

The platform integrates specifically developed software with open source software tools. It was decided to use open software to allow a future large scale use of the platform and to make it easy to integrate other software.

Some of the most popular software packages integrated are PHBB (for forums), Lucene (for the indexation and searching), sympa (for distribution lists), xwiki (for wikis and photo albums), josso (to provide single sign on) and Exo Platform. It works on linux with mysql, apache, tomcat and openldap.

To integrate all these elements, middleware software has been developed allowing them to work as a single platform, with a single sign-on system, and with an authorization scheme which is applied everywhere and with a set of functionalities allowing a very easy administration of either a group or a portal.

Key components of the integration middleware software are in the services layer that provide the core functionalities, and the tools integration layer containing a set of listeners that connect e-Catalunya with the integrated collaboration tools.

The software, initially in Catalan, has been translated into Spanish and English and it's also been prepared to be distributed as open source software in the last quarter of 2007. This will allow integration of new tools using the services already developed and the integration mechanisms already in place.

Some of the collaboration tools have been replaced in recent releases. For instance, the blog, calendar and file repository where initially using xwiki software which didn't completely suit our user needs. They have been gradually replaced by tools developed ad hoc for the platform with richer functionalities and a more granular permissions systems.

5 Other considerations

5.1 Usability and accessibility

e-Catalunya intends to provide universal access to its contents and services. To reach this, the platform has been reviewed and modified in order to accomplish level A of the WAI (Web Accessibility Initiative)¹ and most of the guidelines necessary to be level AA compliant, which is a requirement for official government websites. These guidelines are designed to enable physically handicapped or people subject to technological barriers to access information².

The platform is fully accessible to almost each web navigator, including voice navigators (used for example by people with vision problems), text navigators (as Lynx) or Pocket PC navigators. Also, script languages (as Javascript) used to improve usability are not required. Users not having this technology enabled are granted a plain html alternative. Finally, the platform is prepared to be used with multiple input devices (mouse, keyboard, etc..).

Usability testing has been also performed to allow all kind of users to be able to use the platform and to make it easier to participate. A usability expert periodically reviews the platform to improve usability of the new functionalities added in recent releases.

5.2 Law compliance

Special care has been taken to guaranty compliance with existing regulations on personal data protection. This is particularly important for a site supported by a government in order to make users feel safe enough and not controlled by «Big Brother»

A legal notice was written after running the platform for some time with a few experimental communities. It describes how e-Catalunya works and states how the platform should be used as well as some other legal aspects related with the e-Catalunya platform. This legal notice must be explicitly accepted by every new user before becoming member of the platform. The date and ip address of the user that accepts the legal notice must be registered and kept in a log file.

As some users had registered before the legal notice was created (most of them where members of the pilot portals),

¹WAI <http://www.w3.org/WAI/>

² http://ecatalunya.gencat.net/portal/static-content/accessibilitat_en.html

we modified the login process to oblige them to accept this legal notice, prior to allowing them to further browse through the platform.

The main points of the legal notice include the following:

- Legal conditions of access and use of the platform.
- Correct use of the platform and its services. User obligations and forbidden uses.
- Intellectual and industrial property aspects.
- Confidentiality of personal details.
- Rights to access, rectify or cancel information.

Concerning the protection of personal information, the platform has to comply with the related Spanish law³. This law establishes different levels of confidentiality of personal information: basic (like name, address, etc.), medium (like the bank account) and high (information about health, ideology, religion and race). Each level requires stronger security measures (periodical security audits, data base ciphering, etc.).

- The Autonomic Government (Generalitat of Catalonia) guarantees the confidentiality of information relating to users of the platform and implements the appropriate security measures (firewalls, intrusion detection systems, system update policies, etc.).
- Nowadays the e-Catalunya platform is prepared to protect basic personal information and in consequence it is forbidden for users to enter data that is specially protected and that require medium or high levels of security. For instance, sharing a file with patients' information is not allowed.
- We've considered that a personal picture is not specially protected even though in some cases it could reveal the race or the religion of a person.
- Registered users can correct their personal information or modify their visibility through their personal zone. They can also cancel the information entered on the platform by contacting the responsible of the platform.
- When cancelling user information, we do not delete the content he/she has published in the platform groups. We delete his/her contacts and all the personal information, except the minimum required to keep log information and content authoring (email, name and surname).

The use of the platform by minors would require modifying the registration process in order to obtain their parents acceptance of the legal notice. Even though some judges may accept that a child older than 14 could be responsible enough to take its own decisions, it was not totally clear.

³Organic Law 15/1999 of 13 December

To avoid problems with this, it was decided that the platform access and use should be forbidden to minors at this time. This could be modified in the future if needed, having the registering process be conveniently modified.

Users also have to comply with laws governing industrial and intellectual property. The main issue is that whenever a new content is uploaded to the platform they have to explicitly indicate they hold the rights to do that. To avoid discouraging participation we decided to ask this only for the uploaded files and pictures, but not for wiki or forum contents. Additional information on the kind of license the user holds may be included as a feature for next releases .

5.3 Training and Users support

Contextual on-line help is provided for users, moderators and administrators of the platform.

However, when new collectives start using the platform creating a new portal, the promoters and moderators of the new communities receive specific training and consultancy in order to understand their collaboration needs and make an initial setup of their portal matching them.

This is very important as most of the people approaching e-Catalunya are not used to collaborative work and it is necessary for them to understand its implications. It is also crucial to have active people participating in their communities. In some cases it's easy as they are used to do that in other virtual environments. However in most of the cases, specific people dynamizing their communities is needed.

A specific portal has also been created (QUECAT⁴) with information, documents, multimedia tutorials and examples to explain the possible uses of the platform.

Portal administrators also receive support from a help desk in order to report possible problems.

6 Conclusions

The e-Catalunya experience demonstrates that web 2.0 technologies can be applied to e-governance purposes.

The platform allows an easy setup of new communities with a rich set of options to configure them.

Further development is being done in order to continuously improve its functionality. The ECAT platform is also being prepared for its distribution as open software. This will allow it to be used in other environments like universities, private companies, municipalities, etc.

⁴<http://ecatalunya.gencat.net/quecat>