

Article

Contributions to the Development of Local e-Government 2.0

Rui Gomes * and Lígia Sousa

Instituto Politécnico de Viana do Castelo, 4900-347 Viana do Castelo, Portugal;

E-Mail: ligia@estg.ipv.pt

* Author to whom correspondence should be addressed; E-Mail: rgomes@estg.ipv.pt.

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Abstract: With the emergence of Web 2.0 (Blog, Wiki, RSS, YouTube, Flickr, Podcast, Social Networks, and Mashups), new ways of communicating, interacting and being on the Web have arisen. These new communication tools and strategies can radically change some specific work processes in communities, such as the work processes of an autarchy. Some authors emphasize the advantages of using Web 2.0 tools in autarchies; thus, we were interested in exploring the possibilities and constraints of implementing these tools in our region of Portugal, the Minho. Using a case study methodology, we aimed to find out about the possibilities of implementing Web 2.0 tools in autarchies through exploring the interest and motivation of autarchic collaborators in their use (our unit of analysis in autarchies). Information was gathered with the help of a questionnaire, the design of which was based on previous exploratory interviews and applied to four autarchic units in the Minho region. In each unit, three different target-groups were surveyed (Councilors, Information Systems (IS) Technicians, and General Staff), so that we could triangulate the data. Data analysis and results emphasized the interest and motivation of the autarchies in using Web 2.0 tools, as well as the main constraints that would be faced during Web 2.0 implementation. It also allowed us to establish some guidelines for adequate Web 2.0 implementation, including an “ideal” profile of the person responsible for the implementation process.

Keywords: Web 2.0; local e-government; autarchy 2.0

1. Introduction

The potential of Web 2.0 for transforming government has been highlighted by various authors [1,2]. Of all Web 2.0 technologies, wikis and blogs would allow for the broadest and greatest extent of interaction between the local-Government and its citizens. However, wikis and blogs require the most resources to implement and sustain.

Blogs can be viewed as “virtual” town meetings for a Local Government to interact and dialog with its citizens. Topics for such public forums include public comments, public policy discussions, grading of restaurants, discussion of green and cost-saving initiatives, and community policing and services discussions.

Wikis can be used by citizens to provide feedback on autarchic matters as well as on community plans and policies. For example, recyclers, environmentalists, nonprofit and civic groups may have worthy ideas for dealing with disposing hazardous household waste. The collaborative and interactive nature of wikis provides an opportunity for broader participation and can offer ideas for solving problems and improving services.

Social bookmarking provides a useful way of “tagging” or bookmarking for consumer information and services. Internet information improves the relevancy of searches from the consumer’s perspective. This helps to eliminate much of the complexity and challenges of trying to predict or guess how a citizen may view or want to search for specific information or services. If users are allowed to tag contents, then some form of authentication is necessary to assure “correctness”, and this can require significant time and effort. This application of Web 2.0 technologies asks for, and collects, feedback on a local government’s Internet content and online services. The feedback loop is critical to the improvement of online services and for refining the type of content so that it is useful and relevant to its citizens.

Videocasts are defined as the online delivery of video on demand, or video clip content, either as files for downloading or streaming video feeds. While podcasts were originally audio-based, they are now often used interchangeably with videocasts. Content Syndication is comprised of technologies that facilitate the automatic update of content (text, graphics, audio and video formats), two of the more common methods being Real Simple Syndication (RSS) and Atom. Content syndication using Web 2.0 technologies such as RSS web feeds provides an effective way for the local government or municipality to disseminate and share information with the public, as well as with business partners and employees (e.g., YouTube Twitter and Facebook). These technologies allow informational videos to be posted about the autarchy’s programs, community service announcements and community outreach initiatives. However, certain policy, organizational and implementation considerations need to be formulated before the autarchy can consider fully deploying these technologies. Application mashups provide an opportunity to influence the Autarchy’s Internet applications to create innovative and more effective ways to communicate, interact and deliver government services. Utilization of middleware software like Ruby-on-Rails can significantly simplify the implementation of application mashups across the Autarchy.

The tools and practices of Web 2.0 can help to improve policy making and service delivery by enriching government interactions with external stakeholders and enhancing internal knowledge management [3–6]. The positive impact/outcomes of Web 2.0 on the public sector cover four areas of activity:

1. Improvement of public sector transparency: for example, by using content syndication and social media platforms to bring the public sector agenda and activities closer to citizens and provide news and information on the platforms preferred by citizens (who no longer need to go to the public entity website for this information). The concept of transparency is at the core of the application of Web 2.0 tools and social media for local governments. Governments are now facing unprecedented transparency requirements, further encouraged through electronic grassroots mobilizations using social technology [7]. Noveck [8] points out how information and its availability are key in this scenario of democratization. According to Noveck [8], making good information available to the general public for better governance is more important than the attention paid in the past to so-called “experts.”
2. Improvement of policy making: new forms of participation, enabled by the use of ICTs, which improve social consciousness and citizen engagement. The evolution and popularity of social media has provided new techniques for online community engagement and additional avenues for consultation and interaction with citizens and communities in ways that can facilitate dialog, creativity, collaboration, and participation. All these citizen-to-citizen and citizen-to-government dialogs can have many positive effects [9]: increasing interest in politics and citizen participation; expanding the number and types of participants; generating support for a position/project; and creating identity and trust. Blogs and social networking sites have been demonstrated to be powerful tools for political candidate fact-finding, spreading political gossip and communicating with a constituency or advocacy group quickly and efficiently [3]. These Web 2.0 technologies have the potential to increase citizen participation in political and public sector processes, including elections, policy development, and policy implementation.
3. Improvement of public services: more innovative mechanisms for service delivery. As Osimo indicates [6], the application of these tools to the public sector can improve public service provision in the same way that companies share product design tasks with potential customers.
4. Improvement of knowledge management and cross-agency cooperation, using specific groups in the context of these platforms in order to transform the relationships within the organizations and between different public entities.

For government organizations (including autarchies), these considerations emphasize the advantages of Web 2.0 institutional use but they also indicate that these organizations must think of developing a clear strategy to profit from the potential benefits offered by Web 2.0 technology. The core characteristics of Web 2.0—many-to-many network, user-generated content and personalization offer them the potential of becoming more transparent, more efficient and more responsive, but lessons from the past show that it is important to have an eye for the factors that play a role in determining the success of such technology [10]. Thus, these organizations have to find ways to connect the core characteristics of Web 2.0 to the objectives of their own organizations in an intelligent manner [11]. Regarding local e-government, it may be said that the autarchy must evaluate policies and organizational impacts when implementing these technologies (social networking, wikis and blogs). Whilst these are seen as tools to enhance user experience and civic participation, planned implementation and organizational implications are required when the autarchy considers adopting them. Often, additional resources are required to ensure that these technologies are effectively

implemented and that their benefits are fully realized. Chang and Kannan [12] cite barriers to implementation such as technological issues (not all local governments possess the required hardware, software and trained staff/specialists); institutional issues (inadvertent loss of intellectual property, rules governing the retention of records, rules of engagement and propriety, fear of making a commitment, violation of information-sharing, legitimacy and confidence as to who can speak for the agency, reputation/brand risk, lack of codes of conduct for employees engaging in virtual communities, maintenance of trust in the government, concern about information not being cleared through traditional channels and vetted in advance); security issues (employees operating outside of firewalls, blocking websites from accessing data, overloading services, compromising network bandwidth, and insuring the integrity and authenticity of governmental data); and privacy issues (possible violations of privacy for employees and citizens as a result of Web 2.0 access).

Being aware of all the advantages of Web 2.0 implementation in autarchies, but also bearing in mind the constraints presented in Chang and Kannan [12] and listed above, we were interested in exploring the possibilities of implementing Web 2.0 tools in autarchies in the Minho region of Portugal. Prior to finding out about the possibilities of implementing Web 2.0, we needed to explore the perceptions of autarchic collaborators regarding the use of such tools in these entities, the advantages they see in them, and the constraints they predict to its use.

Different maturity models for e-government have been developed [13,14]. Generally speaking, these models tell us that “the more e-government the better”, but these models predict a linear, stepwise, and progressive development of e-government without taking into account the fact that more e-government also requires more experience. In fact, it implies moving from one stage to another, which requires changes, and that includes more and different challenges for organizations to deal with.

In order for any organization (including autarchies) to successfully implement these tools, and considering the challenges that they will face in doing so, the implementation has to be accepted and supported by all the collaborators involved. Moreover, this important fact must be recognized by the clients themselves (in the case of local government, those who make up that government). Therefore, our interest lies in finding out whether this implementation would be accepted and supported by those who would collaborate in the autarchies of the Minho region. For this reason, a case study was carried out, and this is described in the following section.

2. The Case

The study has been developed bearing in mind this area of interest: to find out how interested and accepting the autarchies of the Alto-Minho, specifically their stakeholders, are in using Web 2.0 tools. For this, we explored the perceptions of these tools of some of those who constitute the key elements (in the functioning of the local governments) regarding the advantages of using such tools, the main areas of concern about their implementation and the conditions under which their appropriate functioning would be guaranteed. Investigating the perceptions of those involved in the process of transformation with regard to local e-government is an essential step in drawing up and putting into practice a Web 2.0 strategy in these autarchies. The relevance of finding out what these perceptions are has to do with the fact that this awareness will allow Minho autarchies to design a well-planned and more contextualized implementation of such tools.

2.1. Research Method

To reach our aims we developed a case study in Minho autarchies, called *Câmaras Municipais*. Case study methodology is widely used in the IS research field, according to the Association of Information Systems (ASI), mainly due to the fact that organizational issues and research problems have evolved from being technical to being organizational [15]. It is an ideal methodology when a holistic, in-depth investigation is needed [16], and it is designed to bring out the details from the viewpoint of the participants by using multiple sources of data.

The present study is an exploratory one, according to Yin [17], with a single-case application: the Minho autarchies. The unit of analysis within this case is the perception held by significant autarchic stakeholders regarding the implementation and use of Web 2.0 tools in autarchic activity, in terms of advantages of their use, points of concern and how to guarantee their correct functioning. The sources of information in our case were four autarchies from the possible twelve that make up the Minho region which agreed to take part in the case study: Viana do Castelo, Barcelos, Caminha and Arcos de Valdevez.

Even knowing that our unit of analysis was the perceptions of stakeholders about the use of Web 2.0 tools, the question remained about who should be surveyed, as all the autarchic stakeholders are important sources of information. Effectively communicating the value of e-government initiatives to the entire organization, and to its employees, is emphasized by both [18,19]. All employees should be allowed to participate in many ways in e-government initiatives which impact on their work conditions as e-government must be perceived as a mutual project. Some authors pinpoint the importance of campaigns focusing on enhancing citizens' use of e-government services [20–22].

Whilst all stakeholders in autarchies constitute relevant sources of information, it would not be within the scope of this study to survey them all. On the other hand, case study research is not sampling research, and both the unit of analysis and the units of information are critical factors. It is typically a system of action rather than an individual or group of individuals. Case studies tend to be selective, focusing on one or two issues that are fundamental to understanding the system being examined [23], and on sources that represent information units. Considering this and the relevant role of all kinds of stakeholders in the transformational government process, we identified target-groups for survey, from within the case's population, taking into account the fact that each group makes different use of the Web 2.0 tools and that the three groups cover the main activities carried out using these kinds of tools. Therefore, three target-groups were selected in each autarchy to be surveyed about their perceptions of the use of Web 2.0 tools in autarchic activity, as mentioned above: (1) Councilors (Local Politicians); (2) Information Systems (IS) technicians (Middle managers); and (3) General Staff (Top-management).

Despite the constitution of target-groups, it cannot be ignored that an individual case study consists of a “whole” study, in which facts are gathered from various sources and conclusions are drawn from those facts. Yin [24] suggested using multiple sources of evidence as a way of ensuring construct validity. Moreover, according to Yin [24], one of the main advantages of case studies is the recourse to several data sources; case studies which do this have more worth, in terms of quality, than those which are only supported by one source of information. Thus, in order to obtain information for the case study, two different techniques were used: a questionnaire and a focus-group interview.

According to [25–27], interviews are often one of the most important sources of data in a case study. Using several sources allows, on the one hand, the different perspectives of the participants to be included and, on the other, different "measurements" of the same phenomenon to be taken; this creates a triangulation of data during the analysis stage. Also, a triangulation of techniques allows method triangulation. For Yin [24], using different data collections tools in the construction of a case study means that a more diverse set of topics are available for analysis and that the same phenomenon can be corroborated in this way.

Exploratory interviews were held with experts on council activities and functioning, and data from the interviews were handled through the content analysis technique; the questionnaire was designed using the interview results, and applied in each autarchy to the three target-groups created for this purpose: (1) Councilors; (2) Information Systems (IS) technicians; and (3) General Staff.

The structure of the questionnaire included three general information categories:

- Advantages in implementing the tools
- Principles, and care to be taken, in the implementation and/or functioning
- Contextual conditions for successful implementation and functioning.

All three categories of information were applied for each of the Web 2.0 tools considered: Blog (Table A1); Wiki (Table A2); RSS (Table A3); Podcast (Table A4); Social Networks (Table A5), so that the results could be considered and interpreted for each tool separately.

Information obtained for each Web 2.0 tool is presented in Tables A1–A5, on pages X to Y, according to the survey categories:

- Advantages of the implementation;
- Care to be taken, and principles to be followed;
- Guarantees for appropriate functioning

2.2. Analysis and Conclusion

The responses to the questionnaires were analyzed as simple percentages, and a synthesis is presented of the most relevant aspects regarding the advantages perceived by the different groups surveyed (Councilors, IS Technicians and General Staff) of the implementation of these tools in the respective autarchy, about the principles to be followed and the care to be taken, in their implementation, as well as what conditions should be in place in order to guarantee their appropriate functioning.

Taking into account Chang and Kannan's study [12] regarding the care to be taken, we will integrate the results about constraints/care in the four types of barriers to the implementation of Web 2.0 in local government (technological, institutional, security and privacy).

Results

(1) Advantages

Generally, all the groups surveyed recognize common advantages; however, the advantages are presented according to each group of respondents.

Councilors

- RSS, You Tube/Flickr and Podcasts make useful information available about the autarchy;
- Social networks and Blogs are spaces where discussion topics and issues of interest for citizens can be put forward. They create a closer relationship between the different stakeholder groups;
- Wikis enable knowledge in various areas to be produced, they allow knowledge to be built and public services to be improved;
- Mashups enable the use of new technologies to be more profitable and new public services to be created.

Staff (Top Managers)

- RSS, You Tube/Flickr, and Podcasts make useful information available about the autarchy;
- Social networks and Blogs are spaces where discussion topics and issues of interest for citizens can be put forward. They create a closer relationship between the different stakeholder groups;
- Wikis, besides allowing public services to be improved, enable the problems faced by those who perform those services to be better understood (they are more advantageous for their work);
- Mashups, like blogs and social networks, bring citizens closer to the autarchy.

IST (Information System Technicians)

- the main advantage of Wikis is the ability to build knowledge, and of Mashups it is the creation of new services; these opinions are shared by the Councilors.

Generally speaking, the advantages mentioned above which were perceived by the different groups surveyed corroborate the various types of benefits stressed by some of the authors discussed in this article. With regard to the advantage of accessibility to information and knowledge of the internal functioning of the autarchic entity, Noveck [8] refers to how information and its availability are key in this scenario of democratization and how relevant it is to make good information available to the general public for better governance. In addition, in terms of bringing citizens or other stakeholders closer through the various tools considered, or producing new knowledge (specifically with Wikis), we are reminded of the study carried out by Lazer [9] where these authors state that citizen-to-citizen and citizen-to-government dialogs can have many positive effects - from increasing interest in politics and citizen participation, expanding the number and types of participants generating support for a position/project, to creating identity and trust, and improvements can be made in terms of knowledge management, also previously mentioned in this paper.

(2) Principles to Follow and Care to be Taken

Councilors

- Regarding Blogs, Wikis, RSS, Podcasts, Social Networks, Youtube/Flickr, and Mashups, they favour creating a body responsible for interaction between services;
- Regarding Social Networks and Mashups, the principles to follow are promotion of social networks to citizens, and guaranteed support for them from the political sector (leader of council and councilors).

Staff (Top Managers)

- With regard to Podcasts, Social Networks and Mashups, the focus is on guaranteeing support for them from the political sector (leader of council and councilors);
- With regard to Blogs, Wikis, RSS and YouTube/Flickr, they refer mainly to their promotion to citizens.

IST (Information System Technicians)

- For all the tools, it is very important to promote them to citizens, as well as creating a body responsible for interaction between services.

In general, the most important care to be taken is perceived to be that of promoting the tools and the advantages of using them to citizens.

(3) Guarantees for Appropriate Functioning of the Tools

Two types of guarantees were presented: those related to the profile of the manager of the implementation and subsequent management of the process and those related to the process itself.

- A. Those related to the profile of the manager of the implementation and subsequent management of the process.

Councilors

The manager should be able to promote participation between councils and citizens, and to also moderate with regard to Blogs, Wikis, Social Networks, You Tube/Flickr, Mashups; s/he should make useful information available, in terms of RSS feeds; and be able to use technology well for Podcasts and Mashups.

Staff (Top Managers)

These collaborators consider, as did the councilors, that the manager in charge of the implementation and subsequent management of the process should be able to promote participation between councils and citizens, and to also moderate. In terms of YouTube/Flickr, s/he should be familiar with all the issues for discussion, be technically qualified regarding Podcasts, create credible and attractive dialogue regarding Social Networks, and be an intermediary between council and citizens in terms of Mashups.

IST (Information System Technicians)

Lastly, the IST believe that it is important for any of those in charge of the implementation of Blogs and Wikis to be able to promote participation between councils and citizens, be familiar with the issues for discussion on Youtube and Flickr, be technically qualified for Podcasts and knowledgeable about the aims of the implementation for Social Networks. Regarding Mashups, they should take on the roles of moderator, leader and technician.

We can see the frequency with which certain qualities/characteristics are perceived as 'ideal or appropriate' for the implementation/management of the process (for example, "be able to promote participation between councils and citizens", "be able to moderate", or be "technically qualified"). These allow a "profile" to be drawn up for the person who would ultimately be responsible for a future

implementation of these tools in the councils surveyed. On the other hand, it is possible to see that these demands or guarantees imply conditions that avoid certain constraints in the process, related to those mentioned by Chang and Kannan [12]. These are mainly what the authors refer to as “technological” and “institutional” (“technically prepared”, “intermediary between council and citizens”, “credible dialogue”...). The following point (guarantee of success regarding the functioning of the process itself) reveals more concerns with possible problems in terms of “security” and “privacy”, according to same authors.

- B. Regarding the process itself: Both the process and the respective tools must guarantee, from the respondents’ point of view, a series of qualities/characteristics, which we detail below:

Councilors

- Blogs—Clear definition of aims of implementation and Discussion topics to be put forward
- Wikis—Validity of information published;
- RSS—Adaptation of language to target audience and use of neutral terms, avoiding conflict or division between citizens and/or councils;
- YouTube/Flickr—Strict rules of use and attractive/accessible contents;
- Podcasts—Accessible/credible information;
- Social Networks—Promotion of local networks on local issues;
- Mashups—Accesible/appropriate language, qualified team and appropriate leadership.

Staff (Top Managers)

- Blogs—Protection against incorrect use of blog and data protection;
- Wikis—Integration of various internal professional profiles;
- RSS—Verification of suitability for users and use of neutral terms, avoiding conflict or division between citizens and/or councils;
- YouTube/Flickr—Strict rules of use and attractive/accessible contents;
- Podcasts—Accessible/credible information;
- Social Networks—Promotion of local networks on local issues;
- Mashups—Accessible and appropriate language;
- IST(Information Systems Technicians);
- Blogs—Clear definition of aims of implementation and data protection;
- Wikis—Service availability (platforms) and vvalidity of information published;
- RSS—Verification of suitability for users YouTube/Flickr—Strict rules of use and attractive/accessible contents;
- Podcasts—Accessible/credible information;
- Social Networks—Promotion of local networks on local issues;
- Mashups—Accessible and appropriate language We can state that, according to the survey sample all the tools seem relevant and interesting in terms of their possible implementation in the councils concerned.

Both councilors and IS technicians believe that the above-mentioned tools can promote closer relationships between the autarchy and local citizens, although they do not consider that all the tools

would play an equally useful role in this. Blogs and social networks are seen as tools which would favor this approximation, mainly through “electronic dialogue”, development of discussion forums, and exchange of ideas on topics of interest. Wikis, RSS, Podcasts, and Youtube/Flickr were only thought to be useful in terms of narrowing the gap between local government and the public if the information produced/created/updated were of importance or interest to both parties, or if accessibility to the information was relevant. Finally, Mashups would be of use in new services created for the autarchies.

It is clear that, in practice, developing a closer relationship through producing and updating information, as referred to for the second group of tools, cannot be seen as separate from the promotion of new ways of, and spaces for, dialogue which were classified as interesting and motivating (blogs and social networks). This is because only the guarantee of adequate communication strategies can ensure the correct reception of the knowledge and information produced.

This leads us to what we consider the most interesting data analysis result: the contribution of our study to the future implementation of Web 2.0 strategy in Minho autarchic institutions.

Regardless of the fact that these tools would bring autarchies and local citizens closer together, through ways of, and spaces for, communication which would focus on producing/updating relevant information, the respondents to our questionnaire pointed out that, in order for this to happen successfully, specific issues must be dealt with:

- Clearly identify the proposed aims, supported with organizational strategic orientation;
- Integrate different professional specialists;
- Guarantee data protection and privacy, as well as the credibility and reliability of the information made available;
- Give prompt and competent responses to all the types of technical demands required by each tool to guarantee the reliability and interest of the information provided.

In addition, the process must be properly managed, both in its implementation stage and functioning/continuity/maintenance, and this requires a person or a team who fulfill specific “profile requirements” as perceived by the survey sample.

The respondents’ definition of such profile is still in an early stage of investigation, of course, but up to now there is an outline for future detailed and grounded descriptions, constituting the support of further research in this field. ‘Moderating’ skills seem key for whoever manages the process, to promote “healthy” interactions between autarchy and stakeholders, making them all producers and receivers of information. The skill to motivate others is also perceived as relevant as is promoting the involvement and participation of all citizens in the spaces/moments of discussion and dialogue. Other relevant profile demands are technical skills and knowledge that fit the demands of implementing, handling and maintaining the Web 2.0 tools to be used.

It seems essential to validate these profile requirements, to obtain more detailed information about the practical issues of these demands, so that the manager, or management team, can meet them.

Such information could then be made available in each autarchy and could be used for the decision process to select managers for implementing Web 2.0 in the autarchy. The idea is that a clearly defined and validated profile may guide the selection process, guaranteeing that any person or team

responsible for implementing and maintaining the above-mentioned tools, has the knowledge and skills necessary to ensure that the proposed aims are achieved.

3. Conclusions

The present article has discussed the potential use of Web 2.0 tools in autarchic institutions. The aims of the research were to contribute to their implementation in Minho autarchies, contributing to a 2.0 strategy. We conclude that autarchies perceive these tools as relevant, promoting closer relationships between autarchy and local citizens. The issues emphasized are: clearly identify and understand proposed aims; support implementation with organizational strategic orientation; and managing the process appropriately both in the implementation stage and in terms of further functioning/continuity/maintenance, which requires a person or a team fulfilling specific profile requirements (with appropriate technical, interpersonal and strategic skills).

Appendix

Table A1. Blog.

Motivation/Interest	Councillors	General Staff	IS Techicians
For the public to be interested in the use of blogs, these should have the following advantages (choose up to 5 advantages):			
Interaction between councils	33%	0%	33%
Interaction with citizens	33%	60%	83%
Creation of spaces for discussion of matters of people’s interest	100%	20%	83%
Participation of citizens in discussions	33%	80%	67%
Exchange of information between councils	67%	60%	50%
Easier communication between councils and citizens	67%	60%	50%
Real-time discussions	0%	0%	17%
Greater openness of kinds of information exchanged	33%	60%	67%
Promotion of communication between professional classes, internally	33%	0%	50%
Implementation	Councillors	General Staff	IS Techicians
For the implementation of a blog to work and fulfil its aims, which principles should be followed or what care should be taken:			
Promotion of Blog among citizens	33%	83%	83%
Previous interaction with citizens	33%	17%	17%
Creation of body responsible for interaction between services	100%	67%	67%
Guaranteed support for blog from political sector (leader of council, councillors etc)	33%	33%	33%
Others (Which?)	0%	0%	0%

Table A1. Cont.

Functioning	Councillors	General Staff	IS Techicians
For a blog to function appropriately, some conditions should be guaranteed (choose up to 4 conditions that you feel are most relevant)			
A-Regarding the profile characteristics of those responsible for the blog (Select those you feel are most relevant):			
	-	-	-
Able to moderate	67%	20%	33%
Able to promote participation between councils and citizens	100%	80%	83%
Able to regulate all participation	33%	40%	33%
Know their public	33%	20%	33%
Know all the contexts involved	33%	20%	50%
Know the aims of the implementation of the blog	33%	0%	50%
B-Regarding the functioning process itself, this should guarantee:			
	-	-	-
Clear definition of aims of implementation	100%	20%	67%
Discussion topics be put forward	67%	40%	50%
Continuation in discussions	33%	20%	33%
Protection against incorrect use of blog	33%	60%	33%
Data protection	67%	60%	67%
Compliance with legislation on use/functioning of blog	67%	0%	17%
Setting up/defining rules on use	0%	20%	33%
Adaptation of language for blog users	0%	0%	17%
Suitability of topics in terms of current relevance	33%	0%	17%
Suitability of topics in terms of interest	33%	40%	17%

Table A2. Wiki.

Motivation/Interest	Councillors	General Staff	IS Techicians
For the public to be interested in the use of wikis, these should have the following advantages (choose up to 5 advantages):			
Enable knowledge to be built	0%	50%	83%
Enable knowledge in various areas to be produced	67%	0%	33%
Enable staff and agents to contribute to interpretation of information	33%	0%	17%
Enable functioning of services to improve	33%	50%	67%
Enable citizens to access interpretation of services on different topics	0%	50%	50%
Enable improvements in services to public	67%	75%	50%
Enable services that are often segmented to be connected	0%	50%	33%
Enable internal/external professionals from different areas to be in contact	0%	50%	0%
Facilitate acquisition of knowledge	67%	50%	17%
Clarify law decrees	33%	50%	33%
Improve knowledge of processes by those who carry them out and those who use them	67%	50%	33%

Table A2. Cont.

Implementation			
	Councillors	General Staff	IS Technicians
For the implementation of a wiki to work and fulfil its aims, which principles should be followed or what care should be taken:			
Promotion of wikis to citizens	33%	60%	83%
Previous interaction with citizens	33%	0%	17%
Creation of body responsible for interaction between services	100%	60%	83%
Guaranteed support for wiki from political sector (leader of council, councillors etc)	33%	40%	33%
Others (Which?)	0%	0%	0%
Functioning			
	Councillors	General Staff	IS Technicians
For a wiki to function appropriately, some conditions should be guaranteed (choose up to 4 conditions that you feel are most relevant):			
A-Regarding the profile characteristics of those responsible for the wiki (Select the 4 you feel are most relevant):			
	-	-	-
Able to moderate	25%	60%	33%
Able to promote participation between councils and citizens	75%	40%	100%
Able to regulate all participation	50%	40%	50%
Know their public	25%	0%	17%
Know all the contexts involved	25%	40%	17%
Know the aims of the implementation of the wiki	75%	20%	50%
Be a leader (credible)	25%	40%	0%
Know about the people involved internally and externally	25%	40%	17%
Give the one who implements the position of leader/boss	25%	20%	50%
B-Regarding the functioning process itself, this should guarantee:			
	-	-	-
Few rules	25%	0%	50%
Creation of a network (functioning in network with staff)	50%	40%	33%
Integration of various internal professional profiles	50%	60%	33%
Availability of service (platforms)	50%	40%	67%
Validity of information published	75%	20%	67%

Table A3. Podcast.

Motivation/Interest			
	Councillors	General staff	IS technicians
For the public to be interested in the use of Podcasts, these should have the following advantages (choose up to 3 advantages):			
Immediate access to information from public sessions	67%	60%	83%
Support for staff through dissemination of useful information for carrying out their activity	0%	0%	33%
Clarification of people's doubts	100%	40%	83%
Improved transfer of decisions to citizens	67%	20%	17%

Table A3. Cont.

Implementation	Councillors	General staff	IS technicians
For the implementation of a Podcast to work and fulfil its aims, which principles should be followed or what care should be taken:			
Promotion of RSS to citizens	100%	20%	100%
Previous interaction with citizens	0%	0%	33%
Creation of body responsible for interaction between services	100%	20%	50%
Guaranteed support for RSS from political sector (leader of council, councillors etc)	100%	60%	50%
Others (Which?)	0%	0%	0%
Functioning			
	Councillors	General staff	IS technicians
For a Podcast to function appropriately, some conditions should be guaranteed:			
A-Regarding the profile characteristics of those responsible for the RSS			
(Select those you feel are most relevant):			
Technically able Human Resources	67%	40%	83%
Like challenges/change and be a motivator	33%	40%	50%
Political leadership	33%	0%	33%
Link between team and public	33%	40%	50%
B-Regarding the functioning process itself, this should guarantee:			
Information that is:	-	-	-
Simple/credible	100%	40%	67%
Attractive/ appealing	33%	0%	50%
Understandable/accessible by citizens	67%	40%	100%

Table A4. RSS.

Motivation/Interest	Councillors	General Staff	IS Technicians
For the public to be interested in the use of RSS, these should have the following advantages (choose up to 5 advantages):			
Free up time for other activities	0%	20%	33%
Provide up-to-date information on council activities	100%	60%	67%
Facilitate access to information at any time	67%	40%	100%
Inform citizens about useful ways to carry out certain tasks	33%	20%	0%
Increase citizens' participation	67%	50%	33%
Promote involvement	100%	0%	67%
Increase accessibility for staff to information on life of council (greater knowledge about others)	0%	50%	0%
Provide useful information for staff on timing, or on how different tasks are carried out	33%	50%	67%
Bring councils and citizens closer	33%	25%	67%

Table A4. Cont.

Implementation			
	Councillors	General Staff	IS Technicians
For the implementation of an RSS to work and fulfil its aims, which principles should be followed or what care should be taken:			
Promotion of RSS to citizens	100%	40%	100%
Previous interaction with citizens	33%	20%	17%
Creation of body responsible for interaction between services	67%	40%	50%
Guaranteed support for RSS from political sector (leader of council, councillors etc)	67%	40%	50%
Others (Which?)	0%	0%	0%
Functioning			
	Councillors	General Staff	IS Technicians
For an RSS to function appropriately, some conditions should be guaranteed (choose up to 4 conditions that you feel are most relevant):			
A—Regarding the profile characteristics of those responsible for the RSS (Select the 4 you feel are most relevant):			
	-	-	-
Validate information	67%	20%	67%
Make useful information available	100%	80%	50%
Up-date information	67%	80%	67%
Promote internally	0%	40%	0%
Be familiar with existing technology	0%	20%	33%
Be able to use this technology well	33%	20%	50%
Motivate	67%	40%	17%
Know their public (all those involved)	33%	0%	0%
B—Regarding the functioning process itself, this should guarantee:			
	-	-	-
Previous verification of all technical issues	67%	60%	67%
Verification of suitability for users	67%	60%	83%
Previous knowledge of these users (main topics)	0%	40%	17%
Adaptation of language to target audience	100%	40%	67%
Use of neutral terms, avoiding conflict or division	100%	60%	50%

Table A5. Social Networks.

Motivation/Interest			
	Councillors	General staff	IS technicians
For the public to be interested in the use of social networks, these should have the following advantages (choose up to 3 advantages):			
Able to use again	0%	0%	33%
Take advantage of a habit	67%	0%	33%
Shared space between council and citizens (already exists in many councils)	100%	40%	50%
Shared information	33%	80%	50%
Technological exclusion of those who do not take part	0%	0%	17%
Bring council and citizens closer	67%	40%	83%

Table A5. Cont.

Implementation			
	Councillors	General staff	IS Technicians
For the implementation of a social network to work and fulfil its aims, which principles should be followed or what care should be taken:			
Promotion of social networks to citizens	100%	40%	83%
Previous interaction with citizens	33%	0%	17%
Creation of body responsible for interaction between services	100%	20%	83%
Guaranteed support for social networks from political sector (leader of council, councillors <i>etc.</i>)	100%	60%	67%
Others (Which?)	0%	0%	0%
Functioning			
	Councillors	General Staff	IS Technicians
For a social network to function appropriately, some conditions should be guaranteed:			
A—Regarding the profile characteristics of those responsible for the social network (Select the 4 you feel are most relevant):			
	-	-	-
Able to moderate	67%	20%	50%
Able to promote participation between councils and citizens	100%	40%	17%
Able to regulate all participation	33%	60%	33%
Know their public	0%	20%	17%
Know all the contexts involved	67%	40%	33%
Know the aims of the implementation of social networks	33%	0%	83%
Create credible and attractive dialogue	67%	60%	50%
Able to motivate and instigate	33%	0%	50%
B—Regarding the functioning process itself, this should guarantee:			
	-	-	-
Promotion of local networks on local issues	100%	100%	100%

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