
Managing the Fuzzy Front-End of Innovation within Cooperative Companies through Social Web Applications

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Abstract: Innovation is a social activity that requires collaboration among the different agents involved in the process. Collaboration is particularly relevant during the early stages of the innovation process where the main efforts must be invested in order to run a successful ideation process. Social Web applications provide the means for managing collaboration and innovation among different kind of users but a set of “top-down” guidelines must be established in order to ensure the process is aligned with the organization’s strategy. This study shows the results of the deployment of a social network within a set of cooperatives belonging to the Engineering and Services Division of MONDRAGON. The study shows preliminary results in terms of participation and generation of ideas and analyzes the success factors behind the deployment of social media for collaborative innovation management.

Keywords: Idea Management, Organizational Creativity, Front-End Innovation, Social Web, Cooperatives

1 Introduction

The early front-end of an innovation process involves tasks with great weight in terms of creativity (e.g. idea generation) and decision (e.g. idea filtering). The “fuzzy front end” ranges from the generation of an idea to either its approval for development or its termination (Murphy & Kumar 1997). Managing the fuzzy front-end of the innovation funnel is often one of the most time-consuming and challenging tasks for large firms. However, as pointed out in a 2008 study by A.T. Kearney, “the best innovators invest more than three times as much effort in the beginning stages of the innovation process than do the followers” (Ebert et al. 2008).

One of the critical factors of a successful idea management process both in terms of quantity and quality is collaboration. Many studies show that collaboration is an essential capability for a successful innovation process (IBM 2006) and it is particularly relevant at the early stages (Burt 2004). With the advent of the social Web (a.k.a. Web 2.0),

unprecedented collaborative power is at the hands of Web users through systems that are designed for user contribution. The “architecture of participation” is the term coined by Tim O’Reilly used to describe the nature of these kinds of systems (O’Reilly 2004).

The articulation of the architecture of participation and the definition of the innovation space are two of the main factors that drive the success of idea generation campaigns. A lack of a participatory and collaborative architecture hinders the whole innovation process from the very beginning, but even if we succeed in this step, a massive submission of ideas could be ineffective if a great part of them are not aligned with the organization's strategy. Thus, the degree of definition of the innovation space is key in order to gather focused ideas that could later become commercial products and services.

With regard to the articulation of the architecture of participation and the adoption of social Web applications within organizations, governance is one of the main factors to be taken into account. In this sense, there are two main approaches: a top-down approach guided by management and a bottom-up grassroots and emergent approach. Renown analysts like Dion Hinchcliffe and Andrew McAfee prefer mixed and “top-down” approaches respectively as it is necessary for the management to signal what’s valued inside the organization and to create culture (Hinchcliffe 2010) (McAfee 2009).

This paper analyzes the adoption of a social network within a set of cooperative organizations belonging to the Engineering and Services Division of MONDRAGON (MISE) with the purpose of fostering collaboration and innovation within the early stages of the innovation process. The next section summarizes existing work in the area introducing the main success factors through different case studies. Section 3 depicts the objectives of this research and the proposed approach for the field study. Section 4 shows the main results according to the metrics defined and finally conclusions, main contributions and future work are discussed.

2 Related work

As mentioned in the previous section the concept of architecture of participation has been used to describe systems designed for user contribution. The advent of social Web technologies has brought an increasing number of applications focused on the participation of users. The use of these social applications within companies was coined as Enterprise 2.0 (a.k.a. Enterprise Social Software) and the number of case studies in the field has grown continually since then (Kim et al. 2010). Within the range of social Web applications the authors of this paper consider social networks as the most suitable in order to foster collaboration among employees and thus improve innovation processes.

A recent study by the Collaborative User Experience Group at IBM (DiMicco et al. 2008) has delved into the employee's motivations for participating in corporate social networks through the analysis of their behaviour within Beehive, IBM’s internal social network. One of the findings which differentiates corporate social network with open social networking sites like Facebook or LinkedIn is that employees are open to meeting each other for both personal and professional reasons. When it comes to actual motivations “it appears that employees are motivated to use Beehive for three reasons: connecting on a personal level, advancing their career within the company and campaigning projects and ideas within the company.

Social networking platforms provide the basic functionality for collaboration among employees and provide a proper environment for the ideation process. According to different studies introduced below there are two main factors that determine a successful innovation strategy at the early stage of ideation: the architecture of participation and the definition of the innovation space.

The architecture of participation “provides the mechanisms and methods for the contributions of participants to be coordinated, integrated and synchronized in a coherent manner” (Nambisan & Sawhney 2008). The architecture of participation establishes the rules and policies that will regulate collaborative networks such as the ones described above. A good example of this is the set of social computing guidelines established by IBM to guide IBMers behaviour within the social Web (IBM 2010).

A well-designed architecture of participation will not only facilitate collaboration and connections among employees but as a consequence, will also enhance the ideation process of an organization. As concluded by Professor Ronal Burt in his study entitled “Structural Holes and Good Ideas” (Burt 2004) “better social connections improve ideas”. This study was carried out through a set of interviews to 673 workers of the Rytheon supply chain group. The results showed that employees who do not access the knowledge, perspective and ideas of others generated lower quality ideas. On the other, hand well connected employees generated higher quality ideas. These findings are confirmed by a recent study carried out within a Swedish company (Björk & Magnusson 2009).

The other success factor for a good innovation strategy implementation is the definition of the innovation space. In order to ensure that submitted ideas are aligned with the organization’s strategy the innovation space must be delimited, otherwise there is a risk of receiving an overwhelming amount of different ideas not aligned with the business strategy. That was the case of IBM’s Innovation Jam brainstorming contest launched in 2006 where more than 46,000 ideas were posted. This approach produced many ideas that were impractical or irrelevant to IBM’s business.

In these cases the task of filtering ideas can turn into a really cumbersome task. A different approach to idea generation is the use of idea markets based prediction markets mechanisms. In this case, ideas are voted by employees following a process similar to social news sites like Digg.com. A first filtering of ideas can be performed by the users of the system but then interesting ideas may not be selected for the following phases. A good approach is to define clear targeted innovation areas and filter ideas based on experts’ feedback through peer evaluation systems and social filtering through prediction markets (Ottaviani 2009).

Finally, it is worth mentioning that even if there are some case studies on the application of social media to innovation management in big corporations there is no documented case study on its use within cooperatives. Cooperative organizations, due to their particular features (ICA 2010) and participative nature, are allegedly suited for the adoption of social Web applications. This work will try to confirm this hypothesis and provide a case study in this field through the description of the experience carried out within a set of cooperatives belonging to MONDRAGON Corporation.

3 Objectives and proposed approach

Objectives

This work builds on the results of different studies and brings real world experiences into the field. The main goal is to describe and analyze best practices and success factors on the adoption of social networks within corporative environments for the management of the fuzzy front-end of innovation. This main goal breaks down in two main sub-goals:

1. Analyze existing state of the practice on the adoption of social media for innovation management.
2. Deploy a social networking platform within a set of cooperatives.
3. Analysis of the factors behind the successful deployment of social Web applications within cooperative organizations.
4. Analysis of the success factors of idea generation campaigns.

In the long term the aim is to design a collaborative innovation management system supported by social and semantic Web technologies. However, at this stage the focus is on social Web technologies and the early stages of the innovation process.

Approach

The study is a first step towards the deployment of a collaborative innovation management system within the Engineering and Services Division of MONDRAGON, comprising a total amount of 34 cooperative companies. In order to carry out the pilot the Ning online social network platform was selected from a set of available Web platforms. The platform was configured according to previously defined parameters and a set of users from the involved companies were selected and invited to participate in the platform. In this first experiment, the platform, named MISEURA (see figure 1), was focused on gathering ideas within the water sector, a strategic sector of activity within the Engineering and Services Division of MONDRAGON for the coming years.

Figure 1 MISEURA Social Network



In order to measure the performance of the social network a set of metrics has been defined. The following list shows the different categories and specific metrics defined:

- Traffic metrics: measure the usage of the social network and highlights different behaviors
 - Web page views: measures number of page views within the experimentation period.
 - Unique visitors: measures the number of unique visitors to the social network during the experimentation period.
 - Average time spent on site.
 - Repeat visitors: percentage of visitors that return to the site.
- Structural metrics: measure the size and connectedness within the social network.
 - Number of members.
 - Percentage of active members: percentage of members that have contributed to the site with comments, posts or event submissions.
- Activity: measures the participation of the members within the social network
 - Number of blog posts.
 - Number of events: event calls published by users in the platform.
 - Number of forum discussions.
- Innovation: these kinds of metrics measures the results of the innovation metrics. There are many metrics to measure the results of innovation but due to the early stage of the project two main metrics have been chosen:
 - Number submitted ideas: number of ideas submitted through the forum mechanism.
 - Number of comments on ideas: number of comments on posts related to new project ideas.

Apart from these quantitative metrics users were also asked about their initial motivations for their participation in MISEURA. The following section will show the results of the case study according to these metrics.

4 Analysis of the results

The social networking platform was launched in September 2009 and is still online but the period selected for gathering data finished in March 2010, so the experiment has been running for 7 months. The following table shows the summary of the results according to the metrics defined in the previous section.

Table 1 Results

<i>Category</i>	<i>Metrics</i>	<i>Results</i>
Traffic	Web Page views	5,590
	Unique visitors	109
	Average time spent on site	00:07:54
	Repeat visitors	82,83%
Structural	Number of members	23
	Percentage of active members	38%
Activity	Number of blog posts	140
	Number of events	18
	Number of forum discussions	8
Innovation	Number of submitted ideas	5
	Number of comments	4

Lessons learned

One of the most important lessons learnt through the use of the social network has been the need to define a community manager role in charge of developing relationships among members, promoting activities and executing administrative and governance duties (Shah 2010). The community manager's role in this case was to encourage and guide employees' participation within the MISEURA social network through the publication of news and events, the organization of physical meetings using the forums and administering the social network.

The metrics related to traffic are satisfactory in terms of the unique visitors recorded. Considering that initially the social network was launched for a limited number of participants the interest raised by the platform is high as 109 unique visitors have browsed through the contents of the social network, more than four times the initial targeted audience. This suggests an alleged willingness for the adoption and use of such tools.

With regard to structural and activity metrics the number of registered members is considerable and they represent the leading cooperatives within the Engineering and Services Division of MONDRAGON. The percentage of active members was low and most of them were passive members that acted as lurkers. Among the active members the

publication of blog posts has been the most fruitful activity with a total amount of 140 posts, although the posts were too concentrated on a few users. With regard to the events, this functionality has been used to schedule periodic meetings and to announce external conferences, workshops or speeches.

In terms of innovative activities the results are not as good as expected in terms of submitted ideas even if the innovation space was well defined. The forum functionality was intended to work as a forum for the exchange of project ideas in part. Only 5 project ideas have been submitted, however the forum has been a useful tool to discuss existing projects and agree the agendas for physical periodic meetings that were scheduled through the events functionality.

Finally, with regard to the motivations for participating in the social network users were given five options to select their main interests before registering to the platform:

- Regulatory and legislative information
- Technology news
- Reports and surveys
- Collaboration with other members of MISE
- Search for partners for the launch of projects

Among these options the most selected one was the collaboration with other members of MISE followed by the searching for partners for the launch of new projects. These confirmed interests show that users are motivated to use the site mainly to collaborate at a professional level and campaigning for project ideas, one of the factors outlined in IBM's study (DiMicco et al. 2008). Other motivations like career progress and personal relationships have not been identified in this study but this is something that may show up when involving a larger base of users in future initiatives.

5 Conclusion and future work

The use of social Web applications at the early stage of the innovation process, if properly aligned with an organization's strategy can be of great use for the generation of ideas. Applications like social networks are already being deployed successfully within large corporations. These social applications combined with features from idea management software will be of great benefit for both large and small companies as they will allow them to leverage both internal and external resources for the sourcing of innovative ideas.

The main contribution of this work is the gathering of best practices for the adoption of social Web applications in support of the early front-end innovation processes within cooperative companies. This implies both practices at a technological level (e.g. selection of tools, configuration, etc.) and at a process level (e.g. definition of the innovation space, incentives for participation, etc.). Current state-of-the-art describes the use of social Web applications or idea management software within large corporations within internal or open innovation processes but there is no extensive research on the use of these kinds of applications to support innovation within cooperative companies.

The participation has been satisfactory with a total amount of 23 registered users, 8 forums discussions started, and 140 blog posts created. On the other hand, not all the users have participated actively and the role of a community manager as a motivating agent has been crucial in order to encourage participation. Besides, the social network has been used for the organization of periodic face to face meetings and this has also encouraged participation.

With regard to the innovation process, even if the initial idea was to encourage idea generation the results have been a bit disappointing in terms of generated ideas. The reasons behind this low idea generation are twofold: the existence of other mechanisms for the submission of ideas (e.g. idea contests) and the lack of user-friendly mechanisms (only forums and blogs were available).

Another issue that has been partially addressed is the suitability of cooperative organizations for the adoption of social media. The study has shown that the selected people were eager to collaborate but not to the extent to conclude that this willingness is above other initiatives from the non-cooperative business world. Future studies must be look further into that hypothesis.

As a follow-up to this initiative a social network focused on the generation of ideas is foreseen to be deployed to a wider audience within the Engineering and Services Division of MONDRAGON. A more formal process and a supporting toolkit will be developed in order to support the ideation process and different mechanisms to articulate the architecture of participation will be studied (e.g. incentive mechanisms). This work has served as an initial experimentation that has provided interesting results to build upon for upcoming similar initiatives.

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