Web 2.0 as a Key Tool for Sharing Knowledge in Basque Country SMEs

Alvarez Meaza I, Cilleruelo Carrasco E, Zamanillo Elguezabal I

Abstract Knowledge sharing has become an important variable in knowledge management in enterprises, being the workplace not the best place for flowing employee’s knowledge. That is why, is important to analyze what is the influence of Information and Communication Technologies (ICTs) and its development in the last decade for trying to fill that gap. The bibliographic review illustrates that Web 2.0 is a tool very close to knowledge management and can give us a solution for improving the knowledge sharing. Therefore, this research study analyzes what the current availability of technological tools in Basque Country small and medium-sized enterprises (SMEs) is. More specifically, the use of Web 2.0 tool, in order to evaluate whether the Basque SMEs give importance to knowledge sharing process and what activity sector and size of SME, by number of employees, are using it more intensely.

Keywords: Knowledge Management, Knowledge Sharing, ICT, Web 2.0, SME

1 Introduction

Small and medium-sized enterprises (SMEs) are a vital part of any regional economy. In the Basque Country, SMEs are the main source of wealth and employment of its industry, specifically, 99.82% of companies are SMEs. According to EUSTAT (Statistics Institute of Basque Country) data, almost 90% of Basque Country companies have less than five employees. However, the small size of the

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company is not specific from Basque Country, but also is general in European business model (Gobierno Vasco, 2010). European Commission has analyzed EU SME in 2012, and has concluded that, throughout the downturn, SMEs have retained their position as the backbone of the European economy, with some 20.7 million firms accounting for more than 98 per cent of all enterprises, of which the lion’s share (92.2 per cent) are firms with fewer than ten employees. For 2012 it estimated that SMEs accounted for 67 per cent of total employment and 58 per cent of gross value added3 (European Commission, 2012). With this information, management scholars cannot ignore SMEs as a viable and interesting research space (Desouza and Awazu, 2006).

Over the past few decades, many parts of the global economy have moved towards a knowledge base, in which wealth creation is associated with the challenge of developing and managing knowledge resource (Coyte et al., 2012). A literature review saw that knowledge management has been studied extensively. Even so, there is a tendency to focus on large business and neglect SMEs (Durst and Edvardsson, 2012). Prior relevant research suggests SMEs are different, not just in size, but in practices around a wide range of management activities, including in the management of knowledge (Hutchison and Quintas, 2008). Thereby, further research is needed to better understand how SMEs manage knowledge resources (Salojärvi et al., 2005, Ricceri et al., 2010).

In this context, the advancement and ever-growing of Information and Communication Technologies (ICTs) developed within the past few decades has favoured changes in SME management (Barba et al., 2007) (Cela, 2005). Nowadays, the use of ICTs by European SMEs is driving the way that enterprises run their business and organise e-commerce. The statistical study made by EUROSTAT concludes that, in 2012, 97% of European SMEs had access to Internet, 77% had a website and one in two enterprises provides staff with portable devices for mobile Internet connection (EUROSTAT, 2012). ICTs play a vital role in the global socio-technological realm through knowledge mobilization, network externalities, alliances and cooperative relationships. The convergence of knowledge management processes and ICTs infrastructure and architecture have been enhanced by the recent advancements in technology ubiquity, semantics and knowledge representation (Mohamed et al., 2010).

Particularly, ICTs have a valuable potential for developing SMEs through better integration in business process; also, assisting them to make more efficient decisions to their performance. ICTs have potential to generate changes among SMEs and make them more competitive and innovative (Barba et al., 2007).

In this paper, the use of Information and Communication Technologies (ICTs), as a tool for supporting knowledge management process, will be analyzed, with

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3 Gross Value Added (GVA) includes depreciation, rewards to labour, capital and entrepreneurial risk. GVA remains when the intermediate costs are deducted from the sales or turnover.
the purpose of describing the current situation of the use of them, and analyzing the use of Web 2.0 for sharing knowledge in Basque Country SMEs.

2 Knowledge Sharing and Web 2.0

ICTs can enhance knowledge sharing by lowering temporal and spatial barriers between workers. Knowledge sharing has been identified as a phase in the process of knowledge management. At the same time that knowledge sharing is recognize as an important pillar in knowledge management, in practice, it proves to be a significant barrier for effective knowledge management (Hendriks, 1999). Various factors have been identified as impediments for knowledge sharing, like inadequate organizational structures and sharing unfriendly organizational cultures, among others (Davenport and Prusak, 2000) (Tissen et al., 1998). The needed adaption to new scenarios results in a search for new organizational structures and approaches. The management model change into an organization context which promotes the exchange of knowledge by creating the appropriate environment, abandoning the traditional hierarchical structures and giving flexibility to the organizations (Alvarez et al., 2012).

The adoption and implementation of ICTs can improve business cooperation, business relationships, quality and diffusion of knowledge. Thus, ICTs are powerful strategic tools for SMEs (Barba et al., 2007). Despite the fact that, other research studies conclude that there is a strong need to create, share and disseminate knowledge within SMEs, this is clearly not related with the availability of ICT infrastructures (Nunes et al., 2006). In particular, when information systems such as intranets, document management systems or groupware applications are introduced to support knowledge sharing, reports show that often the introduction of these systems does not result in significant improvements in knowledge sharing (Hendriks, 1999). Hendriks concludes that ICT is an important instrument to share knowledge, but not the only or most prominent one (Hendriks, 1999). Then, how knowledge can be shared using ICTs?

Internet maturity and development over the last decade, the large number of people that have access to internet through desktop and mobile devices and the evolution of software sector have resulted in what has been called phenomenon Web 2.0 (Levy, 2009). According to Tebbutt, forcing people to encode their knowledge in a formal manner is not easy. When people are socializing, even in a work context, they are much happier to share their thoughts and their experiences. Therefore, he puts the change needed for knowledge management on focusing on people, allowing systems to be focused more into human needs (Tebbutt, 2007). Web 2.0 focuses on people; hence, Web 2.0 is bringing a new trend that should be adopted in knowledge management (Levy, 2009). But, why? Sharing it’s not easy. Perhaps, sharing is something that happens after work time or outside the work-
place. The access to the Internet through mobile devices and the ICTs development towards tools like Web 2.0 have given a potential solution to one of the knowledge management challenges.

Levy has analyzed Web 2.0 principles in a knowledge management perspective and has concluded that they are very close to those in knowledge management (Levy, 2009).

3 Empirical Study: the Availability of Technological Tools to Support Knowledge Management in Basque SMEs. Results

We will now introduce the methodology that will be used to analyze the availability of technological tools to support knowledge management in Basque SMEs.

The studied targeted a group that is composed of 526 SMEs with headquarters in the Basque Country that are associated with any of the following industrial clusters: Machine-Tools, Electrical Appliances, Automotive, Environment, Electronics, Computing and Telecommunications, Energy, Aeronautics and Space, Paper, Audiovisual, Transport and Logistics. The reason why these activities have been selected for this study is that the sectors in which they operate have a high index of industrial production, spend about 60% of expenditure on technological innovation activities and have diversity in terms of their level technology. Moreover, clusters are a key element in competitiveness in the Basque Country and have become the backbone of Basque economic structure, and have allowed to encourage the flow of knowledge and innovation and learning, thanks to the geographical concentration of its enterprises’ activities. Consequently, the company associated with these clusters takes place in an environment where the flow of knowledge is abundant and gives more importance to knowledge management.

Table 1 Data sheet for research

<table>
<thead>
<tr>
<th>Object of Study</th>
<th>526 SME associated with clusters</th>
</tr>
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<tbody>
<tr>
<td>Scope</td>
<td>Basque Country</td>
</tr>
<tr>
<td>Data of implementation</td>
<td>June - July 2011</td>
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</tbody>
</table>

Source for elaboration of questionnaire:
To collect data, the survey was designed with questions about the availability of technological tools to support knowledge management in order to make an inventory of them. In the questionnaire, there are tools related to internet access, website available, Intranet system, Extranet system, no computerized knowledge supports (documentation centers, archives,...), Workflow/groupware systems, document management systems, computer tools for information search, make use of knowledge sharing applications, like WEB 2.0 and PLM software.

The analysis of the results, both quantitative and qualitative, about the availability of different tools to support knowledge management practices, can contribute to understand better the current situation of ICTs in regard to knowledge management practices in different types of companies classified by activity sector and number of employees.

### 3.1 The Availability of Technological Tools to Support Knowledge Management in Basque SMEs

In Table 2, obtained results related to the availability of technological tools to support knowledge management in Basque Country SMEs proposed in this study are represented.

<table>
<thead>
<tr>
<th>Technological Tools</th>
<th>Available</th>
</tr>
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<tbody>
<tr>
<td>Access to Internet</td>
<td>100%</td>
</tr>
<tr>
<td>Website</td>
<td>95%</td>
</tr>
<tr>
<td>Intranet system</td>
<td>73%</td>
</tr>
<tr>
<td>Extranet system</td>
<td>50%</td>
</tr>
<tr>
<td>No computerized knowledge supports (documentation centers, archives…)</td>
<td>41%</td>
</tr>
<tr>
<td>Workflow/Groupware systems</td>
<td>45%</td>
</tr>
<tr>
<td>Document management systems</td>
<td>55%</td>
</tr>
<tr>
<td>Computer tools for information search</td>
<td>55%</td>
</tr>
<tr>
<td>Make use of knowledge sharing applications, like Web 2.0</td>
<td>59%</td>
</tr>
<tr>
<td>PLM software</td>
<td>0%</td>
</tr>
</tbody>
</table>

In Figure 1 and Figure 2, achieved results related to the availability of technological tools to support knowledge management in Basque SMEs, by activity sector and by number of employees, are presented.
3.2 The Availability of WEB 2.0 to Support Knowledge Sharing in Basque SMEs, by Activity Sector and by Number of Employees

In Figure 3 and Figure 4, obtained results related to the availability of Web 2.0 to support knowledge sharing in Basque Country SMEs proposed in this study are represented.

Fig. 1 The availability of technological tools to support knowledge management in Basque SMEs, by activity sector.

Fig. 2 The availability of technological tools to support knowledge management in Basque SMEs, by number of employees.

Fig. 3 The availability of Web 2.0 to support knowledge sharing in Basque SMEs, by activity sector
Fig. 4 The availability of Web 2.0 to support knowledge sharing in Basque SMEs, by number of employees.

4 Conclusions

The technological tools more present in Basque SMEs are: access to the Internet, website, Intranet system and use of Web 2.0 tools. Looking for European statistics about the access to the Internet in SME (97%), it can be concluded that the percentage of Basque SMEs that have access to Internet is higher than the European ones. Furthermore, in general terms, terms Basque SMEs have a large availability of technological tools in order to support knowledge management practices.

The Electronics, Computing and Telecommunications sector is the one that has more availability of tools. Therefore, it can be concluded that the availability of technological tools to support knowledge management is linked with technological development of the sector. Moreover, the analysis of availability of tools according to SME size (by number of employees) allows us to confirm the result of other research study related to the use of ICTs in enterprises, claiming that the capacity to have technological tools to support knowledge management is directly proportional to the capacity of technical and human infrastructure of SMEs.

Regarding to the use of knowledge sharing applications like Web 2.0, it can be concluded that Basque Country SMEs have promoted the use of new ICT technologies to seek the improvement of knowledge sharing, in order to provide a solution to this important gap in knowledge management process. It is highlighted the fact that Aeronautic and Space sector makes the most use of it. Also, it is observed the fact that SMEs with fewer employees (between 1 and 9) are those that make the most use of it. So, it can be concluded that knowledge sharing doesn’t depend on technical and human infrastructure, but thanks to new ICTs development the solely requirement needed to achieve knowledge sharing is that employees are motivated to do so.
5 References


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