MGI

MESTRADO
Gestão de Informação

HOW ENTERPRISE 2.0 FIRMS TAKE ADVANTAGE OF EMERGENT SOCIAL SOFTWARE PLATFORMS TO MANAGE KNOWLEDGE.
A Case Study at Cisco Systems, Inc.

Sabrina Vieira Fialho

Dissertação apresentada como requisito parcial para obtenção do grau de Mestre em Gestão de Informação

UNIVERSIDADE NOVA ISEGI
Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

HOW ENTERPRISE 2.0 FIRMS TAKE ADVANTAGE OF EMERGENT SOCIAL SOFTWARE PLATFORMS TO MANAGE KNOWLEDGE

A CASE STUDY AT CISCO SYSTEMS, INC.

by

Sabrina Vieira Fialho

Dissertação apresentada como requisito parcial para a obtenção do grau de Mestre em Gestão de Informação, Especialização em Gestão de Sistemas e Tecnologias de Informação

Orientador: Prof. Dr. Miguel Castro Neto

August 2013

DEDICATION

To my son, who was born during this life project.
We have lost hours of fun but I hope I may have taught that perseverance and determination shed the light to a road of success.

ACKNOWLEDGMENTS

I would like to thank my family for their endless support throughout this journey: my sister for her continuous encouragements, my parents for always being there, and last but not least, my partner for his suggestions and recommendations.

I would like to thank my advisor for being so patient over the past years. Professor Miguel Neto did my interview for the Master in 2009 and ended up choosing to give me this opportunity. Then he accepted to become my advisor in 2012 and guided my research on this astounding subject: thank you for all the knowledge shared and for all the precious advices!

I would also like to thank the Cisco employees for having kindly accepted to fill in the survey and for taking the time to provide valuable insights. Special thanks to: Senior Director R. Dennehy for the availability and constant support over the past two years; Vice President G. Leyrat and Human Resources Manager S. Ginat for providing the necessary approvals; R. Bisby for the guidance and L. Pike for reviewing the English from the survey.

ABSTRACT

This research aims to provide a better understanding on how firms stimulate knowledge sharing through the utilization of collaboration tools, in particular Emergent Social Software Platforms (ESSPs). It focuses on the distinctive applications of ESSPs and on the initiatives contributing to maximize its advantages.

In the first part of the research, I have itemized all types of existing collaboration tools and classify them in different categories according to their capabilities, objectives and according to their faculty for promoting knowledge sharing. In the second part, and based on an exploratory case study at Cisco Systems, I have identified the main applications of an existing enterprise social software platform named Webex Social.

By combining a qualitative and quantitative approach, as well as combining data collected from survey's results and from the analysis of the company's documents, I am expecting to maximize the outcome of this investigation and reduce the risk of bias.

Although effects cannot be universalized based on one single case study, some utilization patterns have been underlined from the data collected and potential trends in managing knowledge have been observed. The results of the research have also enabled identifying most of the constraints experienced by the users of the firm's social software platform.

Utterly, this research should provide a primary framework for firms planning to create or implement a social software platform and for firms willing to increase adoption levels and to promote the overall participation of users. It highlights the common traps that should be avoided by developers when designing a social software platform and the capabilities that it should inherently carry to support an effective knowledge management strategy.

KEYWORDS

Collaboration tools, Enterprise 2.0, Emergent Social Software Platforms, Knowledge sharing, Information technologies, Web 2.0

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS

BYOD	Bring Your Own Device
ESSP	Emergent Social Software Platform
ICT	Information and Communication Technologies
IT	Information Technologies
KM	Knowledge Management
P2P	Peer to Peer
RSS	Really Simple Syndication
SaaS	Software as a Service
SSM	Self Service Metrics

1. INTRODUCTION

Knowledge management seeks for explaining, studying and improving methods, practices and techniques used to locate, extract, share, transfer, codify, create and measure knowledge. In a world where firms compete aggressively for market share growth and differentiation, where public and private organizations mobilize strong efforts to adapt to a reality in constant change (emerging technologies, new business models, etc.), knowledge management (KM) is certainly a key element to drive the innovation and creativity that firms require to improve their performance (Marqués & Simón, 2006; Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Von Krogh, 2002). Recently, and based on case studies performed in several business contexts, O'Dell & Hubert (2011) defined KM as a «systematic effort to enable information and knowledge to grow, flow, and create value», all towards the improvement of «organizational performance».

The benefits of investing in knowledge management have already been widely referred and proven in the literature (Holsapple & Wu, 2008; Marqués & Simón, 2006; Nonaka, Toyama, & Konno, 2000); in terms of productivity, but also in terms of product and service quality, internal processes and competitive strategies (Holsapple & Wu, 2008).

Sustained by an accruing availability of information systems, the discipline of KM has significantly evolved as new capabilities and opportunities deemed worthy of being explored have emerged. Progress brought new ways of locating, sharing and creating knowledge, essentially by allowing practitioners to overcome boundaries and time constraints and by constantly increasing the speed and range of access to information (Davenport & Prusak, 2000; Holsapple, 2005; Papoutsakis, 2006; Sveiby, 2001; Von Krogh, 2002).

In fact, encouraged by the emergence of internet as "the platform" (Musser & O'Reilly, 2006) and by the occurrence of what has been designated by several authors as the Web 2.0 (Musser & O'Reilly, 2006; O'Reilly, 2005, 2010), the past two decades have witnessed a tremendous evolution of the internet or web technologies, increasingly embedded on broadband connections, mobility and video. These technology developments brought tools and applications with innovative capabilities

to the market that organizations are currently acquiring or developing, seeking for the maximization of its advantages (Bughin, 2008; Economic Intelligence Unit, 2007). This revolution or evolution (depending on how the authors have interpreted this event) has impacted individual users but organizations as well, as it transformed the way individuals interact with each other and the way users exchange data, information and knowledge (Tapscott & Williams, 2006). Taking advantage of a world of new possibilities and opportunities, individual contributors have therefore started to play an engaged role in designing web content and thus modified the existing scheme of exchanges (one to many) to multiply communication channels and targeted new audiences (many to many). This behavior is undoubtedly reflected in the way firms are conducting business as they keep on driving efforts to adapt to these perdurable trends. Firms are now taking advantage of the web 2.0 features and shaping their evolution at their own convenience and to serve multiple purposes. Seeking for mid to long-term competitive advantages and sustainability, firms are driving more efforts to capture knowledge within their organization and even cross-boundaries as entrepreneurs have understood the potential of capturing knowledge embedded in daily interactions occurred between the firm and its customers, partners and suppliers (Bughin, 2008; Economic Intelligence Unit, 2007; Zaffar & Ghazawneh, 2012). These firms, also described as enterprise 2.0 firms, are the reflection of the web 2.0 applied at organizational level (Levy, 2009).

What opportunities for knowledge management could arise from the development of the web 2.0 and derived applications and its usage by firms? Which type of applications contributes more likely for knowledge sharing within a firm?

These are some of the questions that researchers have been trying to answer for the past decade. Although there is a general agreement that the web 2.0 has created new resources for knowledge management and “enriched” the discipline (Levy, 2009), the practical results are still being investigated and measured.

In addition, efforts are being driven to inventory, classify and categorize the collection of tools and applications currently in use. Firms are changing or upgrading their internal information systems and some are developing their own tools to follow this trend. Some have adopted web 2.0 tools and some others have a special focus in collaboration as they believe this will bring mid to long term returns (Economic

Intelligence Unit, 2007). Several firms developing their own social software platforms have been sharing their experience.

Having stated the above, the following question arises:

Q.1. *How do firms use ESSPs to collect and share knowledge?*

In order to be able to answer the above question, the following sub-questions should be primarily addressed:

a) *Which tools are currently available in the market and what are their main purposes?*

b) *What distinguishes ESSPs from all other information and communication technologies available in the market today?*

Along the investigation, other potential answers could be obtained to the following interrogations:

c) *What are the main benefits and constraints identified by users when using ESSPs for knowledge management purposes?*

d) *Are the benefits and constraints exclusively related to the application itself?*

This research aims to highlight the main capabilities and features of the ESSPs currently used by firms that have reached the status of Enterprise 2.0. This research will focus on a case study at Cisco Systems, and on the enterprise social software platform currently in use within the firm, Webex Social. To the extent of my knowledge, although the importance of the web 2.0's advent for the enrichment of Knowledge Management has been widely acknowledged in the literature, there are a few studies describing "in-house" ESSPs and their benefits or constraints so far identified by the users. This research might drive to conclusions regarding the most or less suitable ESSP and deriving applications to be implemented in firms with a particular interest in knowledge management.

This study also intends to stress essential characteristics that can help KM practitioners to choose the most suitable social software platform and to design strategic applications oriented for knowledge management. Solutions might be

pointed out to overcome caveats and potential limitations. On the other hand, good recipes are meant to be repeated. If a certain tool or application supporting KM initiatives has been tested and proven as successful in this kind of specific environments, it should be replicated in other organizations with similar characteristics.

2. LITERATURE REVIEW

There is a common understanding that knowledge management contributes for an organization's competitive advantage (Marqués & Simón, 2006; Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995; Nonaka & Toyama, 2003; O'Dell & Hubert, 2011; Von Krogh, 2002). Having understood the benefits of exploiting the existing knowledge and of enabling knowledge creation, firms are looking for opportunities to boost such lever and supply the necessary resources to their knowledge workers.

How is knowledge created? And what are the key stakeholders and conditions that promote such creation?

2.1- TACIT AND EXPLICIT KNOWLEDGE AND ITS CREATION PROCESS

With the purpose of understanding how organizations can create continuous knowledge and exploit its advantages, Nonaka, along with several co-authors (Konno, Takeuchi, Toyama and Von Krogh, among others) have been writing about knowledge management for more than one decade. Based on the precept that knowledge and its process of creation are dynamic, Nonaka and the authors with whom he published have elaborated a framework known as the SECI process and standing for: Socialization, Externalization, Combination and Internalization (Nonaka, 1994; Nonaka & Takeuchi, 1995; Nonaka et al., 2000 and Nonaka & Toyama, 2003).

The SECI process describes the process in which tacit knowledge is converted into explicit knowledge and explicit knowledge into new tacit knowledge. According to the authors, explicit knowledge can easily be captured and materialized, therefore, it can be conveniently shared under the form of data, formulas, guidelines, etc. while tacit knowledge is more difficult to exteriorize as it is embodied in actions, values and routine (Nonaka et al., 2000). Thus, knowledge is continuously created as in a spiral, passing through the four stages above described.

Through socialization, Nonaka believes that tacit knowledge is shared, frequently in an informal environment where individuals spend some time together, where they build a relationship of trust and end up sharing experiences, insights or

views about a specific topic. The next stage, externalization, is characterized by the capability of articulating the knowledge acquired from moments of socialization and the ability to translate it into new concepts or models. Combination occurs when the knowledge previously captured is synthetized, materialized and distributed amongst individuals who can now access and assimilate it. By assimilating the newly created explicit knowledge, individuals are internalizing it and now converting it into tacit knowledge by putting it into practice – this is the Internalization phase of the spiral. This is the stage where "learning by doing" is experienced. New tacit knowledge is created from this live experience and contact with explicit knowledge, generating a new cycle for a continuous spiral (Nonaka, 1994; Nonaka & Takeuchi, 1995; Nonaka et al., 2000 and Nonaka & Toyama, 2003).

Nonaka has also introduced a new concept in the knowledge management literature, the "Ba". The Ba represents a shared context for knowledge creation; a platform that ideally gathers all necessary conditions for knowledge sharing and knowledge creation to occur (Nonaka et al., 2000).

If knowledge is dynamic, how can ESSPs capture this essential characteristic and contribute to the process of knowledge creation? Which characteristics should a software developer take into consideration when designing a social software platform in order to meet propitious conditions for the "Ba" to happen?

2.2- LINKING KNOWLEDGE AND INFORMATION TECHNOLOGIES CAPABILITIES

Junnarkar & Brown (1997) established a bridge between the need to invest in knowledge management and the need to combine it with IT. According to the authors, «effective knowledge management requires a symbiosis between people, information and IT».

Looking at the SECI process in detail and establishing a parallel between the learning process and the existence of technology, the authors state that IT tools facilitate tacit knowledge creation via socialization and internalization (Junnarkar & Brown, 1997).

Junnarkar & Brown (1997) created a list of tools structured according to the effect on knowledge creation for each step of the SECI process.

Therefore, the conversion of tacit knowledge to tacit knowledge occurring via the socialization stage of the SECI process is, according to them, facilitated by video-teleconferencing and desktop video-conferencing tools and by the creation of knowledge communities and virtual communities. According to both researchers, such tools have the advantage of enabling face to face meetings or face to face exchanges.

The conversion of tacit into explicit knowledge that occurs during the externalization stage is mainly fostered by the use of e-mail and distribution lists where one can reach to many users.

The combination phase is the stage where technologies have a known deeper impact and where the choice of applications is wider: e-mail, groupware, web technologies, internal websites on intranets, hypertext linking, search capabilities and broadcast, amongst others, enable the conversion of explicit knowledge into explicit knowledge. Documents can thus be easily edited, transferred and distributed.

Such available explicit knowledge can be, according to Junnarkar & Brown (1997), converted into new tacit knowledge through the power of interpreting results or achieving conclusions based on data mining tools, simulation modeling and application based on virtualization technologies.

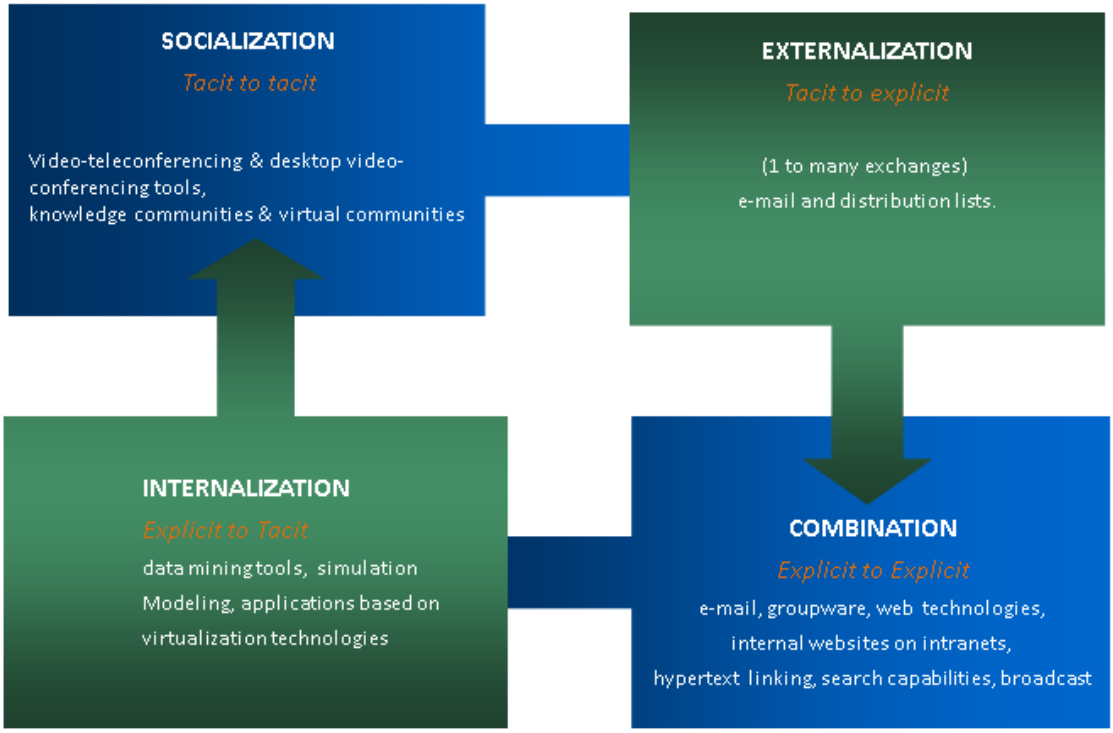


Figure 1 - The SECI process according to Junnarkar & Brown, 1997

One of the main conclusions of the research conducted is that information technologies facilitate the creation of knowledge mostly through the externalization and combination phases (collection, storage, aggregation and transmission of quantitative data) while the existing technologies to facilitate the collection, storage and dissemination of qualitative data remain less developed (Junnarkar & Brown, 1997).

Junnarkar & Brown (1997) also consider that information technologies enabling "people-to-people interactions" promote the creation of tacit knowledge (via both the socialization and internalization stages of the SECI process).

Furthermore, the authors suggest that information technologies capabilities should be combined with the existence of an organizational environment favorable to knowledge sharing and knowledge creation (Junnarkar & Brown, 1997). This conclusion directly relates to the "Ba" previously described by Nonaka (Nonaka, 1991; Nonaka & Konno, 1998; Nonaka & Takeuchi, 1995; Nonaka et al., 2000). This favorable context (the Ba) should be consolidated by the creation of roles as "knowledge assistants", "mentors or other facilitative people roles" (Junnarkar & Brown, 1997).

Junnarkar & Brown (1997) also introduced the concept of "learning contexts" based on an earlier definition from Argyris and Schoen, further developed by Peter Senge[1]. By distinguishing adaptive learning from generative learning, the authors have created a framework that helps selecting the most appropriate tool depending on the degree of completeness of information and clarity of understanding. Adaptive learning (based on existing established concepts) typically occurs in contexts characterized by high completeness of information and high clarity of understanding while generative learning occurs in contexts characterized by low completeness of information and lower levels of clarity of understanding. One of the most important conclusions for the purpose of this research is that innovation is usually tied to generative learning rather than to adaptive learning (Junnarkar & Brown, 1997) and that, depending on the context and type of knowledge possibly generated, one tool might be more suitable than another.

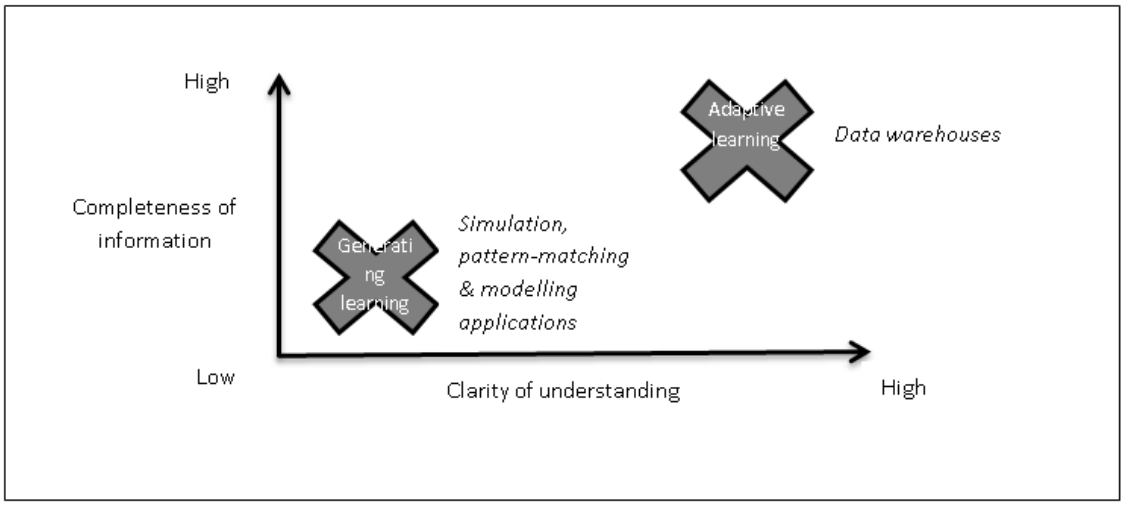


Figure 2 - Learning contexts versus available information systems

The above distinction is important as, according to Junnarkar & Brown (1997), organizations should give «more emphasis on IT investments to develop capabilities where there is less complete information» and when there is little understanding of a specific phenomenon, as this directly influences the capacity of an organization to

[1] Senge, P. M. (1990).*The Fifth Discipline: The Art and Practice of the Learning Organization*. New York:Doubleday. See also Argyis, C. & Schoen, D.(1978). *Organizational Learning*. Reading, MA: Addison-Wesley.

innovate. This includes simulation tools, as well as pattern-matching and modeling application. As opposed to this, adaptive learning can be generated from existing information that organizations might have access to and that would ultimately lead them to invest in large data warehouses. This occurs assuming that the degree of completeness of the information is high, as well as its degree of clarity.

Based on the above conclusions, what type of learning would the use of social software platforms possibly enable (adaptive or generative)? Are emergent social software platforms most suitable for facilitating the dissemination and distribution of existing knowledge within the firm or for generating new knowledge?

2.3- THE EMERGENCE OF THE WEB 2.0

There is a common agreement that computer-based technologies have enhanced knowledge management capabilities (Holsapple, 2005, 2007; Holsapple & Wu, 2008). One of the premises that authors have been elaborating on is the fact that IT is a powerful "enabler", having the capacity to provide the required tools to connect knowledge workers and to grant them the necessary virtual spaces to share experiences, insights, values, etc. (Junnarkar & Brown, 1997). The main advantage of information technologies is that it allows "asynchronous" cross-boundaries interactions that are "sustainable over time", in particular, desktop video-conferencing tools, intranets and extranets with hypertext linking and search capabilities, but also data mining tools, simulation modeling tools and applications based on visualization technologies[2] (Junnarkar & Brown, 1997).

The emergence of the Web 2.0 or the "read-write" web has beyond any doubt changed the role that information systems users can play in this paradigm. If in the past users were mostly benefiting from the web content, users are now able to participate in content creation and application development. Individual contributors started to shape the new web by posting, publishing, commenting, creating, tagging, bookmarking and sharing (McAfee, 2009). Some authors claim that the advent of web 2.0 turned the web more interactive (Plamadeala & Stefan, 2010), intuitive (Bebensee,

[2] By visualization technologies, the authors allude to geographic information systems.

Helms, & Spruit, 2011) and represents an opportunity for developing new services (Levy, 2009).

Andrew McAfee defined the term or abbreviation SLATES, now used to describe the business impacting capabilities tied to the emergence of Web 2.0 technologies and standing for: Search, Links, Authoring, Tags, Extensions, Signals (McAfee, 2006).

Definitions	
Search	Query that a user enters into web search engine in order to retrieve answers to a question. Search capabilities presume that information can be reused and eventually filtered.
Links	Connection established between web pages to link data and information, thus providing "structure to online content".
Authoring	Giving the possibility to contribute to the content of a wiki, blog or webpage to all individuals rather than to a restricted group of web developers.
Tags	One word description tied to a certain topic, theme or article enabling a quick "categorization of content" and defined by the users.
Extensions	Automated suggestions or recommendations based on a collection of data and/or transactions previously performed, enabling "categorization" and "pattern matching".
Signals	Alerts, short notices, headlines or updates easily perceived amongst all the available information, often based on aggregators and on Really Simple Syndication (RSS).

It is not an easy task to classify applications as being part of web 2.0 due to the variety of the existing offer and to the speed of their evolution. However there are some characteristics that distinguish them from other type of applications, namely (Levy, 2009; Musser & O'Reilly, 2006):

a) Web 2.0 tools usually find their own strength on the capability of leveraging the network and human connections;
b) Some of the web 2.0 tools can operate offline although it is necessary to be online to benefit from their entire portfolio of capabilities.

The following tools or functionalities are repeatedly coined as web 2.0 in several papers (Bebensee et al., 2011; Economic Intelligence Unit, 2007; Hassandoust & Kazerouni, 2001; McAfee, 2006):

- Wikis
- Blogs & micro blogs
- RSS feeds
- Hypertext
- Tagging
- Social networking
- Social bookmarking
- E-mail
- Instant messaging
- Document collaboration
- Web conferencing
- Shared calendars
- Shared workspaces
- Intranets
- Web services
- P2P networking
- Collective intelligence
- Social networks
- Podcasts
- Data Mash-ups
- Media sharing
- Rating
- User tracking
- Polling
- Commenting
- Prediction Market

According to Bughin (2008), the early adoption of web 2.0 tools has been more prevalent in large firms operating in the area of «media, telecom, high-tech and business services», a phenomenon that follows the patterns from information technologies adoption in general.

Nowadays, firms have understood that collaboration within an organization, but also cross-boundaries and even when extended to an external network of stakeholders (customers, partners, suppliers, etc.), can bring several advantages for the ones driving efforts in creating a collaborative environment by leveraging web 2.0 tools (Bughin, 2008; Economic Intelligence Unit, 2007; Tapscott & Williams, 2006; Zaffar & Ghazawneh, 2012). The literature and some recent studies refer collaboration as a key element for competitive advantage. It is also often referred as a resource promoting knowledge sharing and innovation (Economic Intelligence Unit, 2007; Zaffar & Ghazawneh, 2012). Most of the authors consider it is directly linked to enhanced capabilities for problem-solving and improved profit margins. It is also considered to

contribute for improving the organization's overall efficiency and productivity (Economic Intelligence Unit, 2007). In fact, collaboration tools have increased communication amongst individuals, drastically decreased cycle times for obtaining a response to a question, and made information more easily accessible and available anytime. It's also easier to find experts when they are needed (Economic Intelligence Unit, 2007, 2008).

Many authors feed the general idea that collaboration will become a source of competitive advantage and that gathering individuals with different backgrounds in one virtual space creates a "collision of thoughts" that would potentially result in innovative ideas (Economic Intelligence Unit, 2007; Tapscott & Williams, 2006). The fact that firms can «tap easily into required knowledge and expertise (whether inside their own firm or within other firms)» would directly lead them in moving more efficiently and address markets needs faster than any other firm that has not invested in collaboration. Besides, firms «excelling in collaborative problem-solving will be better able to grow by entering markets early, taking advantage of local knowledge and ramping up quickly» (Economic Intelligence Unit, 2007).

Several ingredients are required to promote collaboration. Providing the necessary tools to knowledge workers is by itself insufficient. «Successful collaboration requires a cultural shift» (Economic Intelligence Unit, 2007) and it is important to drive efforts in «measuring and monitoring the benefits of collaboration» (Economic Intelligence Unit, 2007). Some others required factors are to be considered by firms investing in collaborative tools. Researchers have identified the need for firms to establish a formal process to find the right partners; the need to perform planning, goal-setting and follow-up; the need to promote a frequent and open communication in order to generate trust, as well as the need to create «a supportive environment with strong leadership, incentives, processes and metrics» (Economic Intelligence Unit, 2007).

Therefore, nowadays, many companies have decided to implement collaborative tools, whether they originally develop the applications themselves or acquire them from specialized vendors.

Based on a survey realized by The Economist Intelligence Unit (2007), conclusions have shown that e-mails and chat programs are the most commonly used. The disadvantage of these tools is that they do not allow capturing knowledge from the existing workflows and interactions. The same study also demonstrates that «tools with the most collaborative characteristics and functions are among the least used».

In the most recent literature, researchers state that the ideal collaboration applications should gather a set of required characteristics, namely (Hassandoust & Kazerouni, 2001; Economic Intelligence Unit, 2007; Zaffar & Ghazawneh, 2012):

a) Easiness of utilization;
b) Open standards;
c) Ability to «interconnect with a range of knowledge repositories»;
d) When combined with appropriate applications (semantic web), tagging capabilities and «improved search features» to facilitate location of information (not only simple words but entire objectives);
e) Built-in rating systems guide individuals to the most relevant information;
f) Support and visualization of data in multiple ways.

Having said the above, which collaborative tools seem to be the most appropriate for knowledge management purposes? Is the web 2.0 contributing for evolved KM capabilities and is it influencing a firm's capacity to produce tacit knowledge?

2.4- ENTERPRISE 2.0

Andrew McAfee introduced the term Enterprise 2.0 for the first time in 2006 (McAfee, 2006). In 2009, he proposed a refined concept, describing Enterprise 2.0 as «the use of emergent social software platforms within companies, or between companies and their partners or customers». In short, according to McAfee, firms employing Web 2.0 technologies are described as Enterprise 2.0 (McAfee, 2009).

The same year, M.R. Rangaswami argued that Enterprise 2.0 should be a broader concept and emphasizes the set of implications that the usage of web technologies by firms involves, including delivery methods and models in the

definition, rather than simplifying it to the meaning it carries for end users. He described the Enterprise 2.0 as «the synergy of a new set of technologies, development models and delivery methods that are used to develop business software and deliver it to users» (McAfee, 2006).

In their book The Art of Letting Go Enterprise 2.0, Buhse & Stame (2008) introduce a different notion of Enterprise 2.0 by assimilating it with another concept, the concept of Open Networked Enterprises (ONE). This is a slightly different approach, emphasizing the capacity of acceleration and networking, as well as the level of transparency of organizations leveraging the advent of the web 2.0.

Regardless of the different visions of the Enterprise 2.0 precept, individuals have understood the importance of all the changes web technologies brought to the spotlight and the impact this would carry out in the world of business (Bughin, 2008; Economic Intelligence Unit, 2007, 2008; Tapscott & Williams, 2006). Concomitantly, researchers and KM practitioners foresaw significant changes on the way organizations manage knowledge, generate innovation and on all its implications (Bughin, 2008). Firms aim to develop a platform for dynamic virtual internal and external interactions, thus filtering the knowledge from the grasp, gathering minds, and translating into understandable input the experience from their workers. According to Bughin (2008), «there is anecdotal evidence that enterprise 2.0 can provide large returns», and these returns seem to be mostly tied to the competitive advantage that such firms benefit from. This competitive advantage is by all means indulged by the creation of new «interfaces with the ecosystem» that collaborative tools have brought forward. Suddenly, the fact that firms can establish a bridge between knowledge workers belonging to cross-functional departments within its own walls, but also a bridge with external individuals (customers, partners, suppliers and others) that can bring valuable knowledge to the firm is providing the appropriate context for knowledge sharing and for knowledge creation: the Ba. Besides, the interactions between individuals from different backgrounds are contributing for new ideas to effervesce and for firms to tackle this innovation's cluster.

Understanding the capabilities that web technologies could bring along, many firms have embraced this advent as a blessing and decided to use them as an asset, rather than as a simple appliance. There is a common understanding that such firms should be tagged as Enterprise 2.0, although the definition of the concept is still being discussed, improved and often revisited by the authors who first set its foundations.

2.5- EMERGENT SOCIAL SOFTWARE PLATFORMS

The emergence of the web 2.0 and the proliferation of collaborative tools came along with the development of a new gender of software, mostly axed on people's collaboration and designed to facilitate such interactions. Often referred as Emergent Social Software Platforms (ESSPs), they correspond to free-form social software digital environments, where users have the possibility to create online communities, thus enabling collaboration and knowledge sharing amongst its members (Zaffar & Ghazawneh, 2012). What distinguishes ESSPs from previously known technologies is the fact that they are more flexible and interactive, inducing the empowerment of its users. Anyone can participate in content creation. Besides, ESSPs are available globally; they facilitate the storage of contributions and interactions over time under various types of data (McAfee, 2006, 2009). The most common ESSPs used nowadays by firms are wikis, blogs, Enterprise tagging, etc. (Bebensee et al., 2011; Economic Intelligence Unit, 2007; McAfee, 2009; Zaffar & Ghazawneh, 2012).

The advent of these new technologies would mark the rise of a new paradigm for Knowledge Management, and the emergence of a new trend bringing people together and allowing individuals to interact without specifications on how this interaction should occur (McAfee, 2009).

Based on an existing table created by the authors of the (Economic Intelligence Unit, 2007) where tools are classified according to their main features, I have elaborated the following classification including Emergent Social Software Platforms:

	Access to content by multiple individuals	Editable content by multiple individuals	Document storage/ sharing	Possibility of tagging	Sustainable over time/access to archive	Knowledge from previous interactions easily tracked
Blog	●		●			
E-mail						
ESSP	●	●	●	●	●	●
Intranet	●	●		●	●	
Wiki	●	●	●	●	●	●

Figure 3 - Classification of Collaborative tools according to their main capabilities

ESSPs are aimed to become a platform where all employees of a firm can benefit from the experiences and insights that peers are willing to share. Such business acumen resulting from day-to-day interactions, from specific projects or from interactions with external stakeholders originates valuable tacit knowledge that is more difficult for a firm to capture. Therefore, instead of being «buried in e-mail, the information is available to all, ready to be searched, linked to and tagged» (Economic Intelligence Unit, 2007).

Having said the above, what is the main purpose of ESSPs and the main goals a firm is aiming by investing on it?

2.6- CAVEATS AND IMPORTANT CONSIDERATIONS

Information technologies have had a positive impact on the discipline of knowledge management and on the business, but this event is not free of drawbacks.

One of the main concerns tied to the accruing use of information systems is linked to the overflow of information that workers are usually facing on a daily basis. Although nowadays information is accessed and stored quite easily, locating specific information can be a much harder task (Junnarkar & Brown, 1997). This is certainly one

of the main assertions that software developers should consider when creating and implementing a social software platform within a firm, besides having in mind the firm's knowledge management strategy (Junnarkar & Brown, 1997).

Moreover, firms might have the right technology at their disposal but might not own the right resources and capabilities to make the most of it. Then another concern that Bughin raises is the fact that the experts within a firm might not find the time or the motivation to contribute for knowledge sharing or knowledge creation. Therefore, recognition and incentives granted to individuals that contribute for relevant content creation might be key success factors as they contribute for promoting «adoption and sustained usage» of collaboration tools (Bughin, 2008). The author also sustains that the obstacles to participate need to be reduced as much as possible and that the benefits of collaboration are more effective when interactions outside the firms' boundaries are explored.

Davenport (2007) considers that «most of the barriers that prevent knowledge from flowing freely in organizations - power differentials, lack of trust, missing incentives, unsupportive cultures, and the general busyness of employees today - won't be addressed or substantially changed by technology alone».

In line with the same considerations, Bughin (2008) suggests that firms adopting collaboration tools might not succeed in capturing its main benefits. According to Bughin (2008), «the competitive advantage will not emerge from web 2.0 technologies, but from adopting new business paradigms, with more 'edge' competencies, higher trust and looser control and a systematic eye to harness the contributions of the cluster of business and social networks the corporation is trying to emulate». In other words, the tools won't be directly responsible for the returns of investing in collaboration within the firm, and, as mentioned earlier, information technologies by themselves do not contribute for competitive advantages if not designed and implemented in accordance to the firm's strategy and goals and if not backed up by a favorable context, along with binding conditions. Therefore, competitive advantage will most likely come from the ability to capture new trends in no turnaround and adapt to new business models and market needs by harnessing the

flow of information circulating in these new platforms and taking advantage of the value embedded in all interactions.

Furthermore, and bearing in mind the source of competitive advantage derived from the knowledge and knowledge repositories within a firm, the security of the information becomes a key factor and requires special attention (Randeree, 2006). Firms should therefore «limit the number of employees who have access to certain information», maintain causal ambiguity to reduce the risk of imitation and, mostly for competitive reasons, prevent one single employee from having access to all the available information (Randeree, 2006). However, legitimate security concerns should not “inhibit” knowledge sharing and the firm should definitely «play a role in creating an environment that fosters employee interaction, sharing and learning» (Randeree, 2006).

3. METHODOLOGY

3.1- SELECTION OF A METHODOLOGY

In order to conduct this research, I have chosen to follow the non-positivist paradigm (also named interpretivism), combining both a qualitative and quantitative approach. In this study, I am not formulating any hypothesis to be tested *a posteriori* thanks to the potential conclusions obtained from the investigation results. Instead, I am formulating questions for which I will be looking for answers. The findings retrieved from the investigation could help building theoretical premises and/or deepen the understanding of a flourishing behavior - the implementation and use of ESSPs by firms – and the impact that such behavior has on a firm's capacity to share valuable knowledge and to innovate.

Despite of a certain criticism towards the case study as a research design, and of the limitations often referred in the literature (Yin, 2009), more and more practitioners and researchers chose this methodology when conducting their investigation. In the field of Knowledge Management, and especially since the beginning of the last decade, numerous case studies were published in distinguished scientific journals and magazines, or even published by prestigious academic institutions (see Appendix, II - Recent case studies in the field of Knowledge Management).

Yin (2009) refers three different types of case studies: explanatory, descriptive and exploratory. The research questions I have previously exposed would tend to lead to an exploratory case study since I do not pretend to describe or explain a certain phenomenon, but to explore intensively a certain behavior (how firms use ESSPs and how this usage reflects on knowledge sharing and innovation), in a specific context (an IT company, also tagged as Enterprise 2.0) and determined timeframe (now, in 2013) with the main objective of bringing a better understanding of the same.

Although the consciousness of bias will be present throughout the investigation performed, the capability of sharing knowledge and generating new knowledge through social interactions enabled by the use of emergent social software platforms is

not measurable in a short pre-defined timeframe. This can be analyzed overtime and a research following the same patterns and methodology should be conducted in several firms with different characteristics to enable the isolation of certain factors that can influence or promote knowledge sharing and creation tied to the utilization of ESSPs.

This primary analysis aims to cleave recurrent factors and conditions believed to be necessary for the occurrence of knowledge sharing and for facilitating the ability to capture innovation within a firm.

I intend to collect data via two different methods:

1. Realization of a **survey** (to possibly answer Q.1 and items c and d) to be sent to the members of the firm in study (sample of individual contributors and managers located in different countries in Europe and in the US);
2. Analysis of different **company documents** (such as white papers, PowerPoint presentations, organization charts, company Vision Execution and Strategy (VSE) approach, etc.)**, as well as of the existing literature** (to possibly answer Q. 1 and items a and b);

In overall, Q.1 shall be answered based upon investigation on existing articles and literature review, although the conclusions retrieved from this study are the result of an exploratory case study that would require further validations in other firms with similar characteristics or in similar contexts.

Thus, taking into consideration the well-known limitations of the case study research strategy, I will perform a combination of the qualitative and quantitative data obtained from the three sources listed above aiming for a validation of the findings.

3.2 - CASE STUDY AT CISCO SYSTEMS, INC.

The current reality is changing at a significant pace with new technologies being imagined, designed, implemented and distributed. Seamless communications via chat, voice and video, as well as the capacity to share data and content easily, in real time

are nowadays a common capability that most of the firms are experiencing. Some expressions frequently employed in firms' communications, such "Software as a Service (SaaS)", "Bring Your Own Device (BYOD)", "Omni-channel services", "Wherever-whenever", etc. illustrate the market trends. Firms are investing a lot in research, seeking innovative technologies, capable of enabling new ways of living and working, imagining future smart homes, smart grids, smart communities and exploring all the possibilities that internet can offer (Cisco Systems, 2013). There is also a growing interest from the industry in enabling remote experts to collaborate. Firms aim to benefit from expertise in real time and to create the necessary gateways to allow access to knowledge anytime anywhere. This vision of tomorrow is definitely creating a new paradigm and pushing firms to invest more and more in collaborative tools and in social software platforms (Economic Intelligence Unit, 2007, 2008).

Founded in 1984, Cisco Systems Inc. is a multinational corporation that «designs, manufactures, and sells Internet Protocol (IP)-based networking and other products related to the communications and information technology (IT) industry and provide services associated with these products and their use» (Cisco Systems, 2013). The firm's core business is based on routing and switching, but Cisco also offers security, mobility, collaboration and video solutions, as well as data center virtualization, cloud and architectures designed for business transformation (Cisco Systems, 2013).

With an annual revenue of 48.6 billion dollars (2013) and headquarters located in Silicon Valley, San Jose, California, Cisco Systems Inc. is considered to be one of the main IT companies worldwide, currently competing with Alcatel-Lucent, Aruba, Hewlett-Packard, Huawei, Juniper, Microsoft Corporation, Symantec, among others (Cisco Systems, 2013).

The firm has more than 75,000 employees located worldwide (Cisco Systems, 2013) and faces the same challenges than its competitors, partners and customers.

How does Cisco Systems tackle such market and consumer's growing needs of mobility and datacenter virtualization? How is the company evolving with an increased demand of video capabilities? And how is the company exploring these new opportunities?

3.3- ENTERPRISE SOCIAL SOFTWARE PLATFORM AT CISCO SYSTEMS: WEBEX SOCIAL

3.3.1 Webex Social: The purpose

The creation of the first Cisco Enterprise Social Software Platform occurred in 2010 and had originally been named Quad. In June 2012, Cisco announced that the existing social media platform named Quad had been renamed Cisco WebEx Social and enhanced with several new capabilities. Implemented internally in the first place and now available for customers, this solution praises the capability to enable an integrated user experience (Cisco blog 2012[3]).

In fact, Webex Social is a social collaboration platform that has been designed to provide one single view of each and every employee's workspace working as a «personalized dashboard», where individuals can find experts, join communities and access content published by others via a unified posting model. The platform is complemented by multiple business applications: blogs, bookmarks, calendars, instant messaging, search engines, tag clouds, video visualizers, etc. with the existence of an enterprise level security at the backend. The platform enables the creation of posts with videos, images, and links that can be easily shared. Similarly to the existing well-known social networking platforms, individuals can post a status and share news or content with followers. Users can also use instant messaging, start a call, trigger an e-mail or start a web conference directly from the platform. The Watch List and Activity Stream, as well as periodical Webex Social snapshots enable users to stay up to date with filtered key messages or updates.

Some of the main purposes of the tool are to reduce e-mail usage, accelerate decision making, facilitate problem solving and to promote innovation by connecting people to other people, and people to resources (data, information and knowledge), as

[3] http://blogs.cisco.com/tag/cisco-quad/

well as to enable communication and knowledge sharing between individuals and across communities that relate to a specific project or topic (Cisco Systems, Webex Social Fact Sheet 2012).

3.3.2 Webex Social: The Context for KM

Although an extensive list of advantages for using Webex Social is provided in the firm's documents, the following objectives of Webex Social seem to be directly tied to knowledge management (Cisco Systems, Webex Social Fact Sheet 2012):

- Creation, capture, and retention of intellectual capital in one secure, centralized location (projects history, interactions, etc.);
- Possibility to locate subject matter experts very quickly;
- Promotion of employee-led innovation through collaborative sharing of ideas in communities for "idea generation, brainstorming and discussions";
- Easy access to training by new employees (one-stop access to experts, mentors, training videos and documentation, demos, and relevant communities);
- Promotion of visibility, transparency and of streamlined communication flows facilitating project management and coordination/breaking down communication silos.

Some of the key functionalities are the following ones:

Social Graph	Employees can see the connections to the people they are following or are following them
Search	Quickly find experts, communities, and content
Suggestions	Analyzes WebEx Social activities to make personalized recommendations on people, posts, and communities

Expert Q&A	Crowd source answers with intelligent routing of questions to identified experts
Tagging	Supports tagging for organizing content and retrieval of relevant information

Any employee in the company with access to the Webex Social platform is able to create a new community and able to join any open community. Communities with restricted access can be joined but access requires approval from the community owner(s).

Employees have access to several network solutions that they can easily combine. As an example, an employee can create a community and publish URLs that redirect the user to Cisco Docs which works as an internal document storage application. Jabber, another tool developed by Cisco, can also be embedded with Webex Social adding presence and instant messaging to the solution.

Webex Social is not only used internally but also implemented externally and combined with different solutions depending on the specific business needs of the customers who acquired the social software platform.

Some of the customers who are using Webex Social as their main enterprise social networking tool with the aim of sharing knowledge efficiently reference the following benefits:

- «Seek information/expertise within the company beyond those colleagues they know personally» (Cisco Systems, INX/VocalMash customer case study, 2011);
- Gives «visibility into what everyone within a group, as well as across the enterprise, is talking about» and gives to knowledge workers «the larger context rather than just pieces of it» (Cisco Systems, INX/VocalMash customer case study, 2011);
- Making documented information easily accessible (Cisco Systems, INX/VocalMash customer case study, 2011);

- «Simplifies orientation» for employees who join the company after an acquisition by facilitating the approach to mentors and experts (Cisco Systems, INX/VocalMash customer case study, 2011);
- Quickly identify and assemble virtual teams of experts for client projects (Cisco Systems, Persistent Systems customer case study, 2012);
- Enable collaboration between employees globally dispersed and reduce the IT workload associated with collaboration applications (Cisco Systems, Persistent Systems customer case study, 2012);
- Easily «locate team members with the required expertise in a workforce of thousands» (Cisco Systems, Persistent Systems customer case study, 2012);
- «Warehouse intellectual capital and encourage lawyers to share their know-how with colleagues» (Cisco Systems, Minter Ellison's customer case study, 2012);
- «Ease global knowledge sharing by encouraging lawyers to share their know-how with colleagues» (Cisco Systems, Minter Ellison's customer case study, 2012).

All these customers refer that investing in the social software platform has contributed for an increased efficiency of communications, an improved customer service (attraction and retention of loyal clients), increased sales and lowered costs for training new hires (Cisco Systems, INX/VocalMash customer case study, 2011; Persistent Systems customer case study, 2012 and Minter Ellison's customer case study, 2012).

3.3.3 Webex Social: Measuring Success

Webex Social adoption is not automatic and the firms, who choose to acquire it as a business solution, need to overcome the natural resistance to changing tools and they also need to create a powerful collaboration environment. Whether it has been

driven within Cisco or within the customers' firms who have recently implemented it, series of measures are usually undertaken to promote its adoption and usage.

- Having strong executive sponsors and «getting management on board» (Cisco Systems, INX/VocalMash customer case study, 2011);
- Making Webex Social the unique source for specific content: «instead of distributing important corporate communications» via e-mail, employees now receive a short captivating e-mail with a link to a post (Cisco Systems, Persistent Systems customer case study, 2012);
- Adding entertainment content, live videos and important announcements from senior managers (Cisco Systems, Persistent Systems customer case study, 2012);
- Adding a URL in the intranet to enable employees to perform the search in Webex Social (Cisco Systems intranet).

At Cisco, to control the usage at individual level, community managers have the possibility to access metrics via a tool called Self Service Metrics (SSM). SSM allows community managers to monitor contributions such as the records of all interactions occurred within the community «with creation date, author user ID, document download counts, and other useful metrics». It also allows retrieving on demand a list of members (past and present, with joining and leaving dates), as well as to export a list of all posts that are currently shared with a specific community, with some other useful details, such as the user ID of the author and of the person who last edited the post, the number of editors and edits, the number of communities where the post is shared, etc. (according to a WebEx Social Metrics Team communication sent to all community managers on the 05th of November 2012).

Thus, SSM allows community managers to download charts with the following data:

- Visitors, visits and views

- Visit frequency
- Post views
- Community contributions over time
- Community membership over time

The maintenance of communities is ruled by the “use it or lose it” precept: a community will stay active and available as long as it maintains a defined level of activity. It is expected that 20% of members should engage with the community monthly. If this rule is not met, notifications are sent to the community owners who have 60 days to boost the activity in order to meet the established threshold. After this period, if the threshold is not met, the community becomes inactive and notifications are sent to the community sponsors and owners. If the community remains inactive for more than two months, it is automatically deleted. The system is performing monthly activity checks at 30 days. An owner/role validation check is required every six month and sent to the community owners.

Community owners can leverage from the experience of other community managers who are sharing useful resources in a Webex Social community named “Community Managers”: tips and tricks, best practices, top mistakes, standards and policies (interface style guidelines, confidentiality, presentation layer coding standards, etc.).

Currently, there are no rewards or recognition systems in place for Webex Social users, although a “Top contributors” and “Contributors” feature can be added to a community, showing the picture and profile of community members particularly active (creating posts, commenting on posts, participating in discussions, publishing announcements and sharing documents).

4. RESULTS AND DISCUSSION

4.1- SURVEY CHARACTERIZATION

4.1.1. Survey governance

The survey was subject to several approval levels (Human Resources Director, Vice President and Senior Manager) and reviewed by the Human Resources Survey Governance team prior distribution.

Some of the questions included on the original survey had to be removed as per recommendations received, namely: age range and gender. The survey remained anonymous and confidential. It had to be created in Vovici[4] and the results are expected to be shared with the internal Cisco management and Survey Governance team.

4.1.2 Survey structure

The survey has been divided in three main sections.

The first section – Identification, has been designed to identify and describe the universe of respondents. It is composed by four different questions which allow distinguishing the geographical location (or sales theatre), the firm's internal organization, the respondent's role within the firm and its background (experience/university degree).

The second section – Collaborative Tools, is meant to determine which are the main tools employed by the respondents and their frequency of use. It is also built to easily recognize the main reasons for a lower use and to observe the main tools employed for knowledge sharing purposes.

The last section of the survey – Webex Social, focuses on this research's case study. The main objective is to understand the respondents' primary reasons for using Webex Social, their view about the tool's main advantages and disadvantages, as well as to understand if a rewards and recognition policy would promote its adoption or

[4] Feedback Management Solution (website: http://www.verint.com/splash/vovici-splash.html)

more frequent use. The last piece of the survey is a free-text field enabling the respondents to share any feedback concerning the tool and its current application within the firm.

4.1.3 Survey target audience

The URL to the survey was sent via e-mail to Cisco employees from different organizations and roles, located in the main Cisco offices in Europe and to some located in the United States.

Cisco employs directly 75,049 employees worldwide[5] (Cisco Systems, 2013) but this number does not include all employees hired through outsourcing companies. It has not been possible to determine how many employees are currently working for the company in total if we include all vendors. Besides, from the total number of direct Cisco employees located in the rest of the world, it has not been possible to determine the total amount of employees based out in the sales region called EMEAR (Europe, Middle East, Africa and Russia).

In Europe, in terms of number of employees and strategic locations, the main Cisco offices are located in Belgium, the Netherlands, Poland, Portugal and the United Kingdom, where the European headquarters lie (Cisco Systems, 2013).

The survey was opened for one week, from the 11th to the 18th of June 2013 and was sent to a universe of circa 550 employees included in four different internal European distribution lists. Europe is the main survey's target audience due to the lower complexity in reaching out the population in study during such a short period of time.

The audience included both direct Cisco employees and employees hired through vendors and consisted of:

- 4 employees based out in the Netherlands belonging to Logistics, Manufacturing and Operations;

[5] 32,275 employees in the United States of America and 37,774 in the rest of the world. Most of the employees globally located are part of the Research & Development, Sales and Marketing organizations (51,354 employees out of 75,049) (Cisco Systems, 2013).

- 3 employees based out in Poland belonging to Operations;
- 57 employees based out in Portugal and belonging to several organizations, including Channel, Finance, Human Resources, Manufacturing, Marketing, but mostly Operations and Sales;
- 34 employees based out in the United Kingdom and belonging to several organizations, including Sales, Channel and Finance;
- A smaller sample of 21 employees based out in several locations (Belgium, Denmark, France, Greece, Mauritius, Spain, Sweden, United Arab Emirates and United States of America) and mostly belonging to Sales and Operations.

We have reached a response rate of 22% as 133 Cisco employees have initiated the survey, but only 119 have replied to all the questions and completed the survey. Therefore, the below analysis will only take into consideration the 119 surveys that have duly been completed.

Most of the respondents are located in Portugal and in the United Kingdom due to the nature of the distribution lists used for sending out the URL to the survey.

A complete version of the survey is available in the Appendix I.

4.2- SURVEY RESULTS

4.2.1 Survey respondents office location

Cisco divides the world in three main sales theatres (Cisco Systems, 2013). The first question was built so that employees could easily identify the office location they currently belong to, having the choice between three theatres: Americas (United States of America and Canada), APJC (Asia Pacific, Japan and Greater China), EMEAR (Europe Middle East Africa and Russia) or other locations.

The answer was more specific in EMEAR, giving upfront four possibilities – Netherlands, Poland, Portugal and United Kingdom, as the survey mostly targeted employees located in EMEAR and it could be interesting to distinguish results between countries.

Location	Diagram	Frequency	Headcount
Americas		2.5%	3
EMEAR - Netherlands		3.4%	4
EMEAR - Poland		2.5%	3
EMEAR - Portugal		47.9%	57
EMEAR - United Kingdom		28.6%	34
APJC		0.0%	0
Other		15.1%	18
		Total	**119**

Table 1 – Geographical location of the survey participants

Question:

Current office location:

Results:

Most of the respondents are located in Portugal (47.9%) and United Kingdom (28.6%). Survey participants who selected location "Other" specified the following locations: Belgium, Denmark, France, Greece, Mauritius, Spain, Sweden and United Arab Emirates. None of the participants are located in APJC.

4.2.2 Survey respondents current organization within the company

This is another important question to distinguish respondents among the dozens of existing organizations and departments within the company.

Organization	Diagram	Frequency	Headcount
Channel		8.4%	10
Finance		1.7%	2
Human Resources		1.7%	2
Logistics		0.8%	1

Manufacturing		1.7%	2
Marketing		0.8%	1
Operations		40.3%	48
Sales		37.0%	44
Other		7.6%	9
		Total	**119**

Table 2 – Organization to which the survey participants belong to

Question:

In which organization do you belong to:

Results:

Most of the survey participants belong to Operations (40.3%) and Sales (37%). Channel is the third organization represented in this survey, with about 8.4% of the total of respondents. Most of the respondents who selected "Other" specified belonging to the following organization: Services.

4.2.3 Survey respondents current role

This question was built to distinguish between employees with a managerial role (having other employees reporting to them) and individual contributors (no reports).

Role	Diagram	Frequency	Headcount
Individual Contributor		**93.3%**	**111**
Manager		6.7%	8
		Total	**119**

Table 3 – Role of the survey participants

Question:

Current role:

Results:

The majority of survey participants are individual contributors (93.3%) while only 6.7% of the respondents have a managerial role.

4.2.4 Survey respondents university degree subject or industry experience

University Subject/Industry Experience	Diagram	Frequency	Headcount
Arts		3.4%	4
Biological Sciences		2.5%	3
Business, Finance & Economics		37.0%	44
IT Engineering		16.8%	20
Engineering (other)		9.2%	11
Law		5.0%	6
Mathematical Sciences		1.7%	2
Physical Sciences		2.5%	3
Social Sciences & Humanities		17.6%	21
Other. Please specify:		21.0%	25
		Total	**119**

Table 4 – University Degree subject or previous industry experience

Question:

In which subject do you have a university degree or previous industry experience?

Results:

Most of the survey participants have a university degree or previous industry experience in Business, Finance & Economics (37%), Other subjects (21%, where some specified: Tourism, Advertising, Marketing, Telecommunications, IT Management, IT

Sales, Business & Languages, Public Relations, Sports Industry) and in Social Sciences & Humanities (17.6%). IT engineering follows with about 16.8% of the respondents.

4.2.5 Most frequently used device in current role

Device most frequently used	Diagram	Frequency	Headcount
Laptop		89.0%	105
PDA		0.0%	0
Smartphone		10.2%	12
Tablet		0.8%	1
Other, please specify:		0.0%	0
		Total	**118**

Table 5 – Most frequently used device in current role

Question:

In your current role, which device do you use more frequently?

Results:

89% of the survey participants use their laptop more frequently than any other device in their current role, whereas only 10.2% use their smartphone more frequently. One of the respondents use a tablet more frequently than any other device and another respondent skipped this specific question (total of 118 answers among 119 completed surveys).

4.2.6 Frequency of tools usage

We have included in the survey several of the most commonly tools or resources used by Cisco employees: Cisco Docs, Ciscopedia, E-mail, Intranet, Jabber, Telepresence and Webex Social.

Cisco Docs is a tool where employees can create folders, store documents and share the URL with other employees who would need to access these same documents. Employees usually share PowerPoint presentations, Excel spreadsheets,

other files (.JPEG; .docx, etc.) and reports (.PDF). It is possible to manage edit rights and permissions for specific spaces and folders.

Ciscopedia is the internal wiki used by employees as a knowledge repository about all Cisco terms, resources, tools, applications and wording.

Jabber is a Unified Communication client application that provides presence, instant messaging, voice, HD video, voice messaging, desktop sharing and conferencing capabilities.

Telepresence enables a live face to face collaboration and communication experience over the network through "life-like video" and gives the possibility to share content in real time (Cisco Systems, 2013).

Question:

How often are you using each of the following tools?

Results:

From the results obtained, E-mail (1), Intranet (2), Jabber (3) and Webex Social (4) are the most frequently used tools. The e-mail is undoubtedly and unquestionably the most frequently used tool as it is used on a daily basis by all the survey respondents. Ciscopedia is the less frequently used tool among all the given options, followed by Cisco Docs. Cisco Docs has a more balanced usage between employees who use it quite frequently and employees who almost never use it.

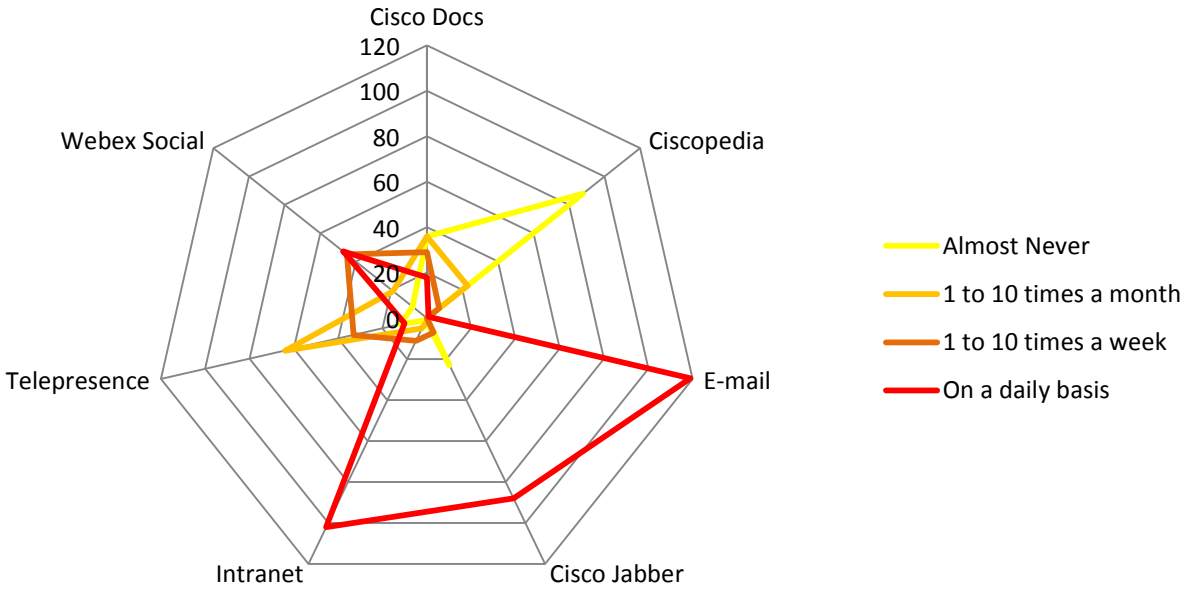


Figure 4 – Frequency of tools usage

4.2.7 Reasons preventing a more regular usage

The goal of this question is to identify potential reasons that could justify a poor usage of some of the existing tools.

Answer	Diagram	Frequency	Headcount
I am too busy		5.0%	6
I don't feel the need to use it in my current role		48.7%	58
I am using another tool with similar capabilities		44.5%	53
I don't know how to use it		18.5%	22
I have no interest		7.6%	9
It is not necessarily available when needed		7.6%	9
I don't have access to it		2.5%	3
Not applicable		8.4%	10
		Total	**119**

Table 6 – Reasons preventing more usage

Question:

From the above listed tools where you answered "almost never" or "1 to 10 times a month" (section II, question 2), what is currently preventing a more regular usage? Please select the most appropriate answers.

Results:

From all the above listed reasons for not using a tool more frequently, 48.7% of the respondents replied that they do not feel the need to use the tool; 44.5% are using another tool or technology with similar capabilities and 18.5% are not using the tools more frequently because they don’t know how to use it.

These responses would mostly relate to Cisco Docs and Ciscopedia which were the least frequently used by the survey respondents.

4.2.8 Tools used to share documents with peers

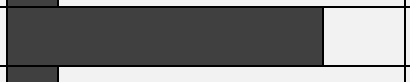
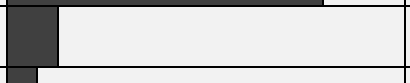
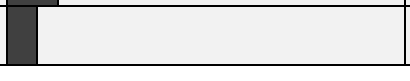
Tool	Diagram	Frequency	Headcount
Cisco Docs		9.2%	11
E-mail		78.2%	93
Webex Social		9.2%	11
Other		3.4%	4
		Total	**119**

Table 7 –Most frequently used tools to share documents with peers

Question:

Which tool do you use more frequently to share documents with your peers? Please select the most appropriate answer:

Results:

The tool most frequently used by employees to share documents is the E-mail (78.2%). Survey participants who replied “Other” specified SharePoint and Jabber.

4.2.9 Methods to share ideas and concerns or to ask work related questions

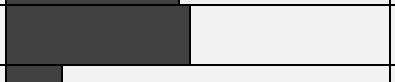
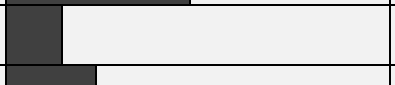
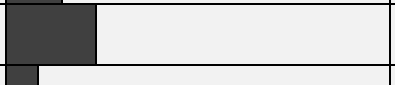
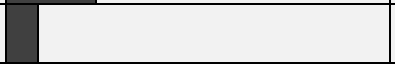
Tool	Diagram	Frequency	Headcount
E-mail		80.7%	96
Phone calls		45.4%	54
Team meetings		47.9%	57
Telepresence & video		14.3%	17
Webex Social		23.5%	28
Other		8.4%	10
		Total	**119**

Table 8 – Tools used more frequently to share ideas, concerns or ask work related questions

Question:

Which method(s) do you use more frequently to share ideas, concerns or ask work related questions to your peers? Please select the most appropriate answers.

Results:

E-mails continue being the primary tool used by the survey respondents to share ideas, concerns or to ask work related questions (80.7%). Team meetings and phone calls are the second most common channels with 47.9% and 45.4% respectively. Webex Social comes next with 23.5% of the survey participants having referred that they use it for this purpose.

4.2.10 Primary reason for using Webex Social

In this question, survey participants had to rate the primary reason for using Webex Social using a scale from 1 to 5 where 1 was used for a lower importance and 5 for a higher importance. From all possible answers, the respondents could rate the following capabilities or possibilities:

- Communicating on specific projects/programs
- Accessing metrics & reports
- Chat
- Discussions & Forums
- Finding experts on a specific topic
- Following people within the company
- Sharing news and/or announcements
- Sharing d4ocuments

Questions:

In your current role, what is the primary reason for using Webex Social?

Results:

The answer that received **more** responses against “5” (higher importance) is “communicating on specific projects/programs”. The answer that received more responses against “1” (lower importance) is “chat”.

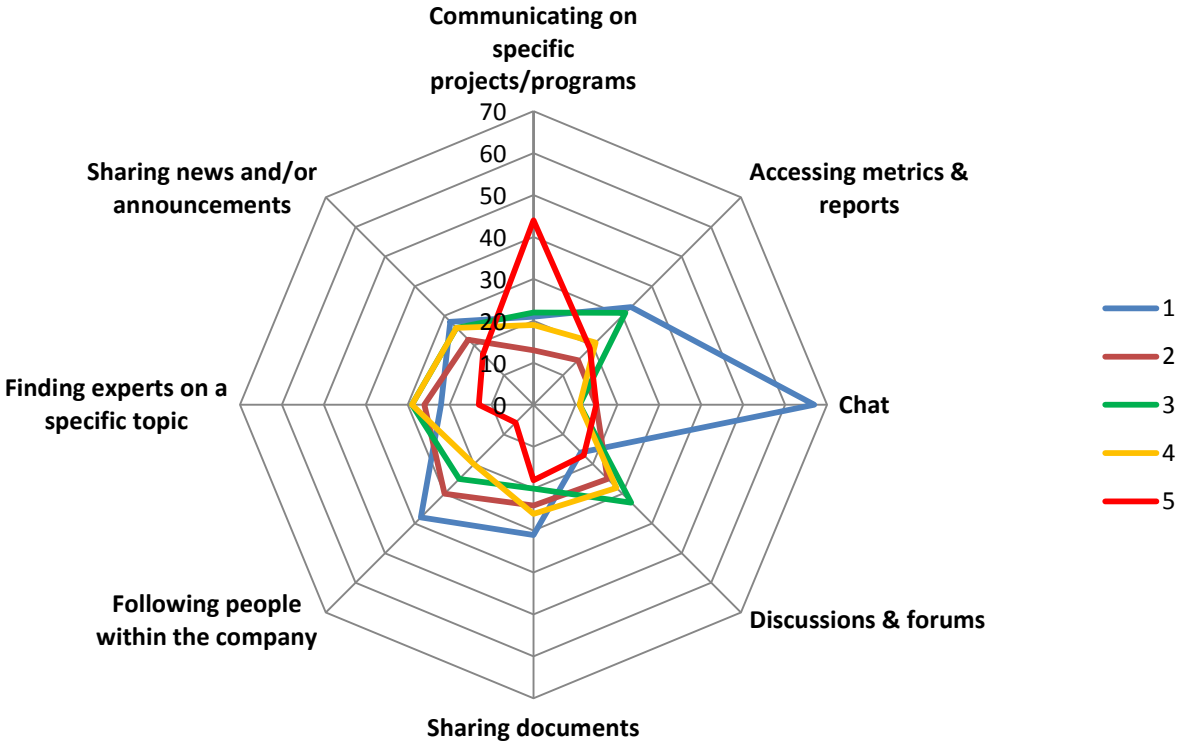


Figure 5 – Primary reason for using Webex Social

The answer that received **less** responses against "5" (higher importance) is "following people within the company". The answer that received more responses against "1" (lower importance) is "discussions & forums".

4.2.11 Main advantages of Webex Social

In this question, survey participants could select several responses:

- Accessing more information in one single platform
- Availability of specific applications
- Easy access to experts within the company
- End to end user experience
- Ease of access by everyone
- Using an innovative tool
- Reaching out to a broader audience
- Reducing the volume of e-mails

- Other, please specify

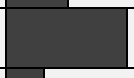
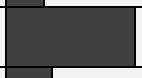
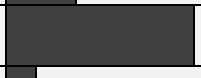
Answer	Diagram	Frequency	Headcount
Accessing more information in one single platform		73.9%	88
Availability of specific applications		15.1%	18
Easy access to experts within the company		30.3%	36
End to end user experience		9.2%	11
Ease of access by everyone		32.8%	39
Using an innovative tool		10.9%	13
Reaching out to a broader audience		17.6%	21
Reducing the volume of e-mails		47.9%	57
Other, please specify:		6.7%	8
		Total	**119**

Table 9 – Main advantages of Webex Social according to the survey respondents

Question:

In your view, what are the main advantages of using Webex Social?

Results:

The option that has collected more responses is “accessing more information in one single platform” (73.9%), followed by “reducing the volume of e-mails” (47.9%) and “ease of access by everyone” (32.8%). “Easy access to experts within the company” comes next with about 30.3% of the total of responses.

Survey respondents who have chosen the answer “Other, please specify” have mentioned the following capabilities:

- Information storage
- Network capability
- Version control of documents
- Creation of working groups

4.2.12 Main disadvantages of Webex Social

In this question, survey participants could select several responses, namely:

- It's difficult to find the information required
- General lack of knowledge on the tool
- Limited number of applications
- Limited search capabilities
- Limited audience
- Overlap with other available tools
- Too many communities
- Too many restricted communities
- Other, please specify: _____

Answer	Diagram	Frequency	Headcount
It's difficult to find the information required		54.6%	65
General lack of knowledge on the tool		31.9%	38
Limited number of applications		8.4%	10
Limited search capabilities		29.4%	35
Limited audience		6.7%	8
Overlap with other available tools		34.5%	41
Too many communities		44.5%	53
Too many restricted communities		10.9%	13
Other, please specify:		18.5%	22
		Total	**119**

Table 10 – Main disadvantages of Webex Social according to the survey

Question:

In your view, what are the main disadvantages of Webex Social?

Results:

54.6% of the survey participants replied that the main disadvantage of Webex Social is that "it is difficult to find the information required". 44.5% replied that there are too many communities and 34.5% replied that Webex Social is overlapping other tools. 31.9% of the survey respondents indicated a "general lack of knowledge on the tool" as one of the main disadvantages and 29.4% pointed out the limited search capabilities.

4.2.13 Rewards and recognition

In this question, the survey participants could indicate if they believe that rewards and recognition would encourage their participation in building content, discussions, etc. Answers were not opened (Yes/No/Maybe), but the answer "Maybe" would lead to a further question allowing them to justify.

Possible Answer	Diagram	Frequency	Headcount
No		49.6%	59
Yes		27.7%	33
Maybe		22.7%	27
	Total de respostas		**119**

Table 11 – Rewards and recognition to promote participation and contribution

Question:

Would rewards and recognition promote your active participation and contribution to posts, discussions, etc.?

Results:

49.6% of the survey respondents replied that rewards and recognition wouldn't promote an active participation and contribution to posts, discussions, etc. Then remaining respondents were divided between "Yes" (27.7%) and "Maybe" (22.7%).

4.2.13.1 Justifications for answering “Maybe” to the previous question

Eighteen of the respondents who chose the answer “Maybe” justified with several comments that we could summarize as follow:

- Levels of participation would depend on the type of reward granted, on the subject for which the contribution is required and on the frequency of participation expected to be entitled to a reward;
- Rewards and recognition are not promoting a mid to long term regular use of the tool, it is only promoting occasional contribution for a short term period;
- If the tool is considered useful for the employee’s role, the levels of adoption and frequency of use won’t be in influenced by rewards or initiatives toward recognition.

  The complete list of answers to this question is available in Appendix III.

4.2.14 Additional comments about Webex Social

In this final section of the survey, a free text box was allowing survey respondents to leave any comment that they would consider pertinent for the purpose of this research and that would have not been previously covered. 24 participants took the time to add comments. From all the comments received, the major ideas can be combined in three different groups:

a) employee’s requirements and suggested tool enhancements;

b) negative aspects;

c) positive aspects of the tool.

Employee's requirements/ suggestions for enhancements	• More training about Webex Social could be provided as some of its capabilities and funcionalities remain underexplored (e.g. forums, newsgroup) • The search functionality should be improved • A functionality to store a document (e.g. a spreadsheet) accessible and editable by a group of users could be added • More incentive programs to promote its use and to advocate a mindset change
Negative aspects	• Using the e-mail is still quicker for sharing information • Difficulty in finding the right information • Too many communities • There are a lot of broken links and outdated information • There is no single sourth of truth • When you participate and post you rarely get a response • The tool is too slow • The tool is not user friendly and not intuitive
Positive aspects	• Webex Social is really good to share knowledge • It is a great tool to get news about specific topics which are frequently updated • The more people use Webex Social, the more attractive it will be to use the tool • Idea and concept are well perceived

The complete list of answers to this question is available in Appendix IV.

4.3- RESULTS ANALYSIS

4.3.1 Managers vs. Individual Contributors

4.3.1.1 Managers

- Managers mostly use their laptop in their current role (87.5%);
- Managers almost never use Ciscopedia because they are using another tool with similar capabilities (62.5% of the managers who replied), because they don't feel the need to use it in their current role (50%), because they have no interest (37.5%) or because they don't know how to use it (25%);
- They use the E-mail, Jabber and the Intranet on a daily basis; Telepresence and Webex Social 1 to 10 times a month. Details below:

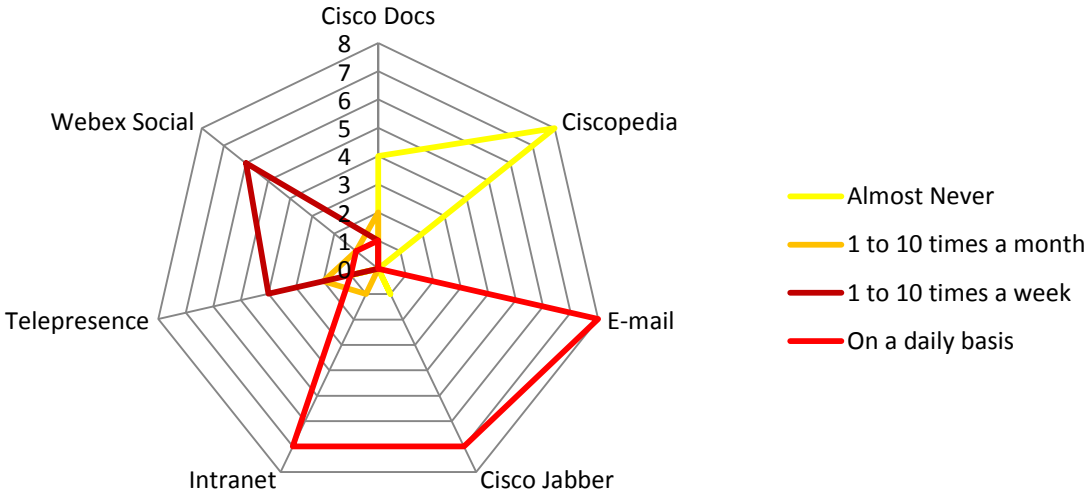


Figure 6 – Frequency of tools usage by managers

- All the managers use e-mails to share documents with peers.
- They share ideas, concerns or ask work related questions mostly through e-mails (75%), team meetings (62.5%) and phone calls (50%), but some managers also use Telepresence/Video (25%). None of the managers use Webex Social for this purpose.
- The primary reason for using Webex Social is communicating on specific projects/programs (25% of the managers rated 5 and other 25% rated 4), as

well as sharing news and/or announcements (25% of the managers rated 5 and 25% rated 4).

- For managers, the main advantage of Webex Social is accessing more information in one single platform (62.5%).
- Managers pointed out the fact that it is difficult to find the information required (62.5%) and the fact that there are too many communities (62.5%) as the main disadvantage of Webex Social. Half of the managers also referred that there is a general lack of knowledge on the tool.
- To the question "Would rewards and recognition promote your active participation and contribution to posts, discussions, etc.?", 62.5% of the managers replied "No"; 37.5% others replied "Maybe" suggesting "programs and incentives", a "clear roadmap and benefits" that "may be relevant for certain target groups and demographics". None of the managers replied positively to this question.
- Some managers added the following comments: "There is a huger amount of dead links"; "there is no single source of truth"; "The rules of inputting information are varied. The method of display is varied. There is little continuity of best practice".

4.3.1.2 Individual Contributors

- Most of the individual contributors use laptops (88.3% of the individual contributors who completed the survey) and some others use their smartphones more frequently in their current role (10%).
- All the employees use the E-mail on a daily basis, 85.6% use the Intranet, 73% use Jabber, and 41.4% use Webex Social on a daily basis. Details below:

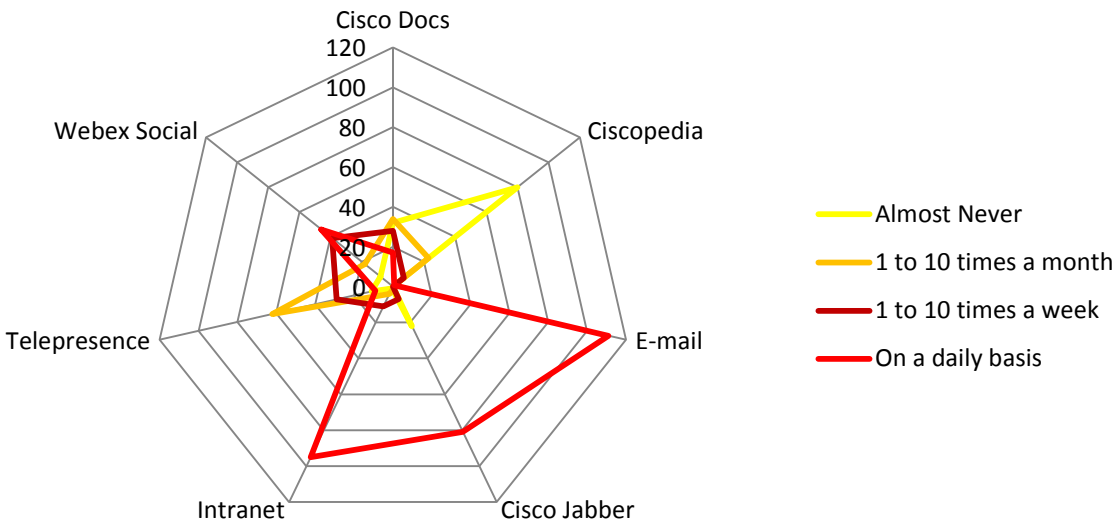


Figure 7 – Frequency of tools usage by individual contributors

- Ciscopedia is the least used tool (72% almost never use it), followed by Cisco Docs (30.6% only use it one to ten times a month and 28.8% almost never use it). Individual contributors claim that they don't feel the need to use them in their current role (48.6%), that they are using another tool or technology with similar capabilities (43.2%) or that they don't know how to use it (18%).
- Most of the individual contributors use E-mails to share documents with their peers (77.5%). 10% use Cisco Docs to share documents and another 10% use Webex Social.
- Most of the individual contributors use E-mails to share ideas, concerns or ask work related questions (81.1%). 46.8% do it during team meetings and 45% use phone calls. It is worth mentioning that 25% of the individual contributors use Webex Social to share ideas, concerns or to ask work related questions.
- For individual contributors, the primary reasons for using Webex Social are communicating on specific projects/programs (37.8% rated 5; 15.3% rated 4) and sharing news and/or announcements (13.5% rated 4 and 21.6% rated 5).

- The main advantage of using Webex Social is accessing more information in one single platform, according to 74.8% of the individual contributors. 49.5% pointed out reducing the volume of e-mails as one of the main advantages. Then, 34.2% pointed out the ease of access by everyone; 31.5%, the easy access to experts within the company; 17.1%, reaching out to a broader audience; 13.5% availability of specific applications; 10.8%, using an innovative tool, and 10%, the end to end user experience. A few respondents who selected "Other, please specify" mentioned the version control of documents and the possibility of creating working groups as two other advantages.
- 54.1% referred the difficulty to find information as one of the main disadvantages of Webex Social. 43.2% referred that there are too many communities; 35.1% mentioned the overlap with other tools; 30.6%, the general lack of knowledge on the tool; 28.8%, the limited search capabilities; 11.7%, the fact that there are too many restricted communities; 9%, the limited number of applications; and 6%, the limited audience. It is worth mentioning that 18% replied "Other, please specify" and that the following comments showed up several times: "slow performance" (9 times), "not user friendly" (3 times), "not very stable", "confused lay-out", "poor performance", "poor user experience", "not always compatible with all browsers", "intranet seems to find more results", "difficult to organize the communities and overall documents/pages", "incomplete data", "lack of training", "Difficult to manage the file upload and sharing " and "few people use it".
- To the question "Would rewards and recognition promote your active participation and contribution to posts, discussions, etc.?", 48.6% of the individual contributors replied "No"; 29.7% replied "Yes" and 21.6% replied "Maybe".

4.3.2 Geographical location

The geographical location is a parameter that cannot really be used in this research as the sample is not equally representative for all the countries and sales theatres. As an example, only 3 survey respondents represent the universe for sales theatre "Americas". In Portugal and in the United Kingdom, the universe is more representative, but most of the survey respondents located in Portugal belongs to Operations, while most of the respondents located in the United Kingdom belong to the Sales organization. This can cause bias and lead to wrong conclusions as the nature of roles can influence tools usage patterns.

An illustration of the above observation is that all employees based in Portugal use their laptop as the main device on a daily basis, while only 64.7% of the survey respondents based out in the United Kingdom use their laptop more frequently. This could be due to the fact that Sales representatives are more mobile and could lead the employees to use their smartphone more regularly. These results can interfere with the conclusions as the device used might not ease the access to some of the tools referred in this survey, in particular, to Webex Social.

	Laptop	Smartphone	Tablet	# of Respondents
Americas	100%	0	0	3
APJC	0	0	0	0
EMEAR - United Kingdom	64,7%	32,4%	3%	34
EMEAR - Portugal	100%	0	0	57
EMEAR - Poland	100%	0	0	3
EMEAR - Netherlands	100%	0	0	4
EMEAR - Other specify	94%	6%	0	18

Table 12 – Most frequently used device according to the location

Therefore, it has not been possible to establish a correlation between geographical location and the utilization of Webex Social.

4.3.3 Organization

In all firm's organizations to which the survey respondents belong to, the most frequently used device is the laptop, although a minority of employees who belong to the Sales and Channel organizations also use their smartphone (9%).

In your current role which device do you use more frequently?						
Organization	Laptop	PDA	Smartphone	Tablet	Other	Total
Channel	6	0	3	1	0	10
Finance	2	0	0	0	0	2
Human Resources	2	0	0	0	0	2
Logistics	1	0	0	0	0	1
Manufacturing	2	0	0	0	0	2
Marketing	1	0	0	0	0	1
Operations	47	0	1	0	0	48
Other	9	0	0	0	0	9
Sales	35	0	8	0	1	44
Grand Total	105	0	12	1	1	119

Table 13 – Most frequently used device according to the respondent's organization

Other considerations:

- In terms of frequency of tool usage, Sales and Channel seem to be the organizations where Cisco Docs is used less frequently, while there is a more balanced usage of Cisco Docs within the Operations organization.
- There is no difference in levels of Ciscopedia's utilization; most of the employees almost never use it, regardless of the organization they belong to.
- All organizations use E-mails on a daily basis and almost everyone uses the Intranet on a daily basis.
- Sales and Channel use Cisco Jabber on a daily basis. On the other hand, Operations is almost equally divided between the ones who use it daily and the ones who almost never use it.
- Telepresence is mostly used once a month (53.8% of all participants) and once a week (27.8%), regardless of the organization. It might be worth mentioning that human resources, manufacturing and some individuals belonging to the Sales organization use Telepresence on a daily basis.
- Webex social is mostly used on a daily basis and 1 to 10 times a week. This observation is also valid, independently of the organization to which the survey participant belongs to. Details of the above statement can be reviewed in Appendix V.

4.3.4 University degree subject or previous industry experience

The goal of this analysis would be identifying certain patterns between individuals having a university degree or past professional experience in a specific topic and its potential correlation or effect on the use of collaboration tools.

University degree/professional experience	# of answers
Arts	4
Biological Sciences	3
Business, Finance & Economics	44
IT Engineering	20
Engineering	11
Law	6
Mathematical Sciences	2
Physical Sciences	3
Social Sciences & Humanities	21
Other	25
TOTAL of answers	**139**
TOTAL of participants	**119**

Table 14 – Total of survey respondents under each university degree category

Some of the categories created in the survey did not collect enough answers to enable a representative universe for all groups, namely Mathematical Sciences, Physical Sciences, Biological Sciences and Arts.

The sample of answers obtained and the way data has been collected does not allow retrieving any conclusion as the results do not reflect any particular pattern differences between the participants having a university degree or previous industry experience of the same category and the participants from another category.

5. CONCLUSIONS

Although this research has been conducted within one corporate firm operating in the Information Technologies industry, evidencing Enterprise 2.0 characteristics, and having adopted, at an early stage the Enterprise Social Software Platform trend, the results obtained might not entirely be reproduced in similar case studies.The relevance of this particular research is tied to the broad spectrum of technology made available to the employees and how this contributes to decreasing or increasing the adoption of ESSPs for knowledge management purposes.

In this study, we have analyzed the frequency of tools utilization, the main reason for preventing its usage and identified the tools used for sharing documents with peers, sharing ideas and concerns related to work. We have compared the tool in study with most of the tools or technologies at one's disposal within the firm. Although some of the capabilities are characteristic of a typical ESSP, most of the functionalities are replicated in other available technologies (e.g. documents storage, video, chat functionality).

By isolating the tool in study in a separate section of the survey, we have identified the main advantages and disadvantages perceived by the users and collected interesting comments about the potential effect of a rewards and recognition program on the tool's adoption and levels of participation, as well as relevant suggestions for tool's enhancements that could likely contribute for higher levels of utilization in the long term.

Some of the conclusions that can be retrieved from this research have been previously highlighted in the existing literature about the use of collaboration tools for managing knowledge. As an example, we confirmed that although employees have access to several collaborative tools with a variety of applications, they continue using the E-mail as the primary method to share documents with peers, share ideas, concerns or ask work related questions. Based on the survey results, this seems to be the first choice as, according to most of the employees, it allows getting to the information faster. Employees also prefer sharing ideas and concerns during team meetings or via phone calls before using the existing social software platform for this purpose. This behavior might contribute for an increased difficulty in sharing knowledge within the firm and ensuring that knowledge is accessible anytime and from anywhere.

The main reason evoked by the employees for using the existing social software platform, Webex Social, is the possibility to communicate on specific projects or programs to the other firm's employees. Day to day interactions and insights get "lost" in e-mail folders while projects and programs with more visibility are advertised globally.

Another relevant observation is that most of the Webex Social capabilities remain unexplored and underutilized. Employees give very little use to the Webex Social function to search for experts on a specific topic within the firm. Ultimately, employees using the existing social software platform end up using the only features that other tools can also offer, such as document storage (this could be done in Cisco Docs), news and announcements publication (this could be done on the intranet or via e-mail). Features that distinguish social software platforms from the remaining collaboration tools (discussions and forums, tag clouds, possibility to "follow" others, possibility to find experts on a specific subject matter) are less considered and utilized. This could explain the fact that most of the employees recognized that there is an overlap with other available tools. Still, most of the employees refer that the main advantage of Webex Social is the fact that they can access more information in one single platform and that it can contribute for reducing the volume of e-mails.

What could explain the underutilization of some features of Webex Social is the fact that employees consider that it is difficult to find the information required. Most of the respondents also indicated that there are too many communities and that there is a general lack of knowledge on the tool.

Besides all the initiatives driven to increase adoption and utilization, the firm could improve the search functionality of the social software platform to facilitate the search for specific information and highlight the tag clouds advantages. The firm could also offer more training sessions to the employees about Webex Social and promote awareness about its diverse applications. The more users, the more interactions and employees will find benefits in using it as the quality of information shared keeps on rising. Establishing more rigid rules for creating communities could prevent or even stop adoption and utilization, therefore, the fact that employees indicated "too many communities" as a disadvantage of the social software platform should be studied with caution and discernment.

Rewards and recognition do not seem to be a key factor for driving adoption or increasing utilization as most of the employees considered that it would not promote their active participation and contribution to posts and discussions, etc. This could only

drive adoption in the short term and would not guarantee a most frequent utilization in the long term. If an employee finds out that particular features of the social software platform facilitate his day-to-day tasks, this could be a reason good enough to drive a more frequent utilization. The tool developers should take all the above conclusions into consideration when enhancing the existing tool functionalities and before launching new capabilities.

We have also come to the conclusion that the nature of the role influences directly the utilization of a tool rather than another, as well as the frequency of utilization. As an example, we have observed that managers use more frequently the Telepresence technology while individual contributors use more frequently Webex Social. This is an interesting outcome as this could mean that if we succeed to capture tacit knowledge through ESSPs, the same might not happen with the knowledge shared via Telepresence. While we can easily keep track of all discussions from users that occurred in discussions, forums or microblogging in an existing ESSP, we might be losing valuable knowledge shared by and between managers as we do not keep track of it and replicate.

Additionally, while mobility continues growing fostered by the Bring Your Own Device trend, the devices that employee use on a daily basis might change with time and the firm's knowledge management strategy need to evolve in parallel. In this research, we have observed that the laptop is the most frequently used device, followed by smartphones with a much lower level of utilization. Although the Sales organization seems to be more propitious to the use of mobile devices due to the nature of their role, the numbers might rapidly shift as the demand and need for mobility continue growing in consumers' markets and in corporate environments. This means that software developers should also take this aspect in consideration when designing enterprise social software platforms in order to ease the mobile access and improve the mobile user's overall experience.

Knowledge is dynamic and if it is more and more mobile, we need to create the necessary tools and platforms to accommodate its retention, to facilitate its access, to promote its creation and contribute for its smooth dissemination within a firm and outside of its boundaries.

6. LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Conscious of the limitations of this research due to the fact that it is a case study and that it represents results of a singular situation, limited to a specific firm operating in the field of ICT and to a specific geographical location, I have performed this study with the main objective of increasing the level of acumen tied to the emergence of social software platforms in corporate environments. Adding to a considerable quantity of case studies performed in the field and with similar aspirations, the conclusions of this study might contribute for the consolidation of some general conclusions that emerged from recent research papers and that emphasize the relevance of ESSPs for KM purposes.

With a more representative sample in terms of geographical location and derived from a more multifaceted collection of data – representing several firms from different areas of business, an analysis could be performed to evaluate if there is a connection between an individual's university degree subject of previous industry experience and the adoption/utilization of ESSPs. The same analysis could be performed in establishing a potential link between the frequency of utilization and the geographical location underlining latent cultural effects on ESSPs adoption.

A study demonstrating if there is a relation between the type of device used and the adoption and utilization rates of ESSPs could also be produced as we continue evolving toward an increased need for mobility and virtualization. This study could help understanding why certain roles within a firm are more disposed to adopt and utilize ESSPs rather than others.

Throughout this research, by the end of each section, I've included questions that are tied to the universe of collaboration tools, emergent social software platforms and the role they play when it comes to managing knowledge. These are questions I did not pretend to answer in this research as they would require further investigation and could originate other research papers. However, these are questions that are deemed of being explored and could lead to useful conclusions.

Based on the framework developed by Nonaka and on the concept of "Ba" (1994, 1998, 2000), a link with ESSPs could be established and researchers could potentially isolate specific technical characteristics that contribute to the creation of the "Ba": *If knowledge is dynamic, how can ESSPs capture this essential characteristic and contribute to the process of knowledge creation? Which characteristics should a software developer take into consideration when designing a social software platform in order to meet basic conditions for the "Ba" to happen?*

Based on the distinction between adaptive and generative learning and on the research paper written by Junnarkar & Brown (2007), a link could be established between ESSPs and the type of knowledge it potentially contributes to create: *What type of learning would the use of social software platforms possibly enable (adaptive or generative)? Are emergent social software platforms most suitable for facilitating the dissemination and distribution of existing knowledge within the firm or for generating new knowledge?*

As a more general topic to explore furthermore, although the literature already contemplates most of its aspects, the relation between the type of collaborative tools a firm selects and the quality of the knowledge management activities that could derive from it, the following research questions remain: *Which collaborative tools seem to be the most appropriate for knowledge management purposes? Is the web 2.0 contributing for evolved KM capabilities and is it influencing a firm's capacity to produce tacit knowledge?*

Additionally, further investigation could be conducted to understand if firms have similar objectives when they decide investing in ESSPs or of the objectives vary according to some other parameters (size of the firm, type of business, firm's strategy): *What is the main purpose of ESSPs and the main goals a firm is aiming by investing on it?*

REFERENCES

Bebensee, T., Helms, R., & Spruit, M. (2011). Exploring Web 2.0 Applications as a Mean of Bolstering up Knowledge Management. *The Electronic Journal of Knowledge Management, 9*(1), 1-9.

Bughin, J. (2008). The Rise of Enterprise 2.0. *Journal of Direct, Data and Digital Marketing Practice, 9*(3), 251-259.

Buhse, W., & Stame, S. (2008). *The Art of Letting Go: Enterprise 2.0*. Bloomington: iUniverse.

Cisco Systems (2011). *INX/VocalMash Customer Case Study*

Cisco Systems (2012). *Minter Ellison Customer Case Study*

Cisco Systems (2012). *Persistent Systems Customer Case Study*

Cisco Systems (2012). *Webex Social Fact Sheet*

Cisco Systems (2013). *Cisco TechWatch*

Cisco Systems (2013). *Cisco Systems, Inc. 2013 Annual Report*

Davenport, T. (2007). Why enterprise 2.0 won' t transform organizations (Publication. Retrieved December 27, 2012, from Harvard Business Review: http://discussionleader.hbsp.com/davenport/2007/03/why_enterprise_20_wont_transfo.html

Davenport, T., & Prusak, L. (2000). *Working Knowledge: How organizations manage what they know*. Boston: Harvard Business School Press.

Economic Intelligence Unit. (2007). *Collaboration — transforming the way business works. A report from the EIU sponsored by Cisco Systems*: The Economist.

Economic Intelligence Unit. (2008). *Designing Effective Collaboration. A report from the EIU sponsored by Cisco Systems*: The Economist.

Hassandoust, F., & Kazerouni, M. F. (2001). Implications Knowledge Sharing through E-Collaboration and Communication Tools. *Journal of Knowledge Management, Economics and Information Technology, 1*(3).

Holsapple, C. (2005). The inseparability of modern knowledge management and computer-based technology. *Journal of Knowledge Management, 9*(1), 42-52.

Holsapple, C. (2007). Knowledge Chain Activity Classes: Impacts on Competitiveness and the Importance of Technology Support. *International Journal of Knowledge Management, 3*(3), 26-46.

Holsapple, C., & Wu, J. (2008). In Search of a Missing Link. *Knowledge Management Research & Practice, 6*(1), 31-40.

Junnarkar, B., & Brown, C. (1997). Re-Assessing the Enabling Role of Information Technology in KM. *Journal of Knowledge Management, 1*(2), 142-148.

Levy, M. (2009). Web 2.0 implications on knowledge management. *Journal of Knowledge Management, 13*(1), 120-134.

Marqués, D., & Simón, F. (2006). The effect of Knowledge Management practices on firm performance. *Journal of Knowledge Management, 10*(3), 143-156.

McAfee, A. (2006). Enterprise 2.0: The Dawn of Emergent Collaboration. *MIT Sloan Management Review, 47*(3), 20-29.

McAfee, A. (2009). *Enterprise 2.0: How to Manage Social Technologies to Transform Your Organization*. Boston: Harvard Business School Press.

Musser, J., & O'Reilly, T. (2006). Web2.0 principles and best practices (Publication. Retrieved May 26, 2013, from O'Reilly: http://oreilly.com/catalog/web2report/chapter/web20_report_excerpt.pdf

Nonaka, I. (1991). The Knowledge-creating company. *Harvard Business Review, 69*, 96-104.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5*(1), 14-37.

Nonaka, I., & Konno, N. (1998). The concept of BA, building a foundation for knowledge creation. *California Management Review, 40*(3), 40-54.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company*. New York: Oxford University Press.

Nonaka, I., & Toyama, R. (2003). The knowledge-creating theory revisited: knowledge creation as a synthesizing process. *Knowledge Management Research & Practice, 1*(1), 2-10.

Nonaka, I., Toyama, R., & Konno, N. (2000). SECI, Ba and Leadership: a unified model of dynamic knowledge creation. *Long Range Planning, 33*(1), 5-34.

O'Reilly, T. (2005). What is WEB 2.0 – design patterns and business models for the next generation of software (Publication. Retrieved May 26, 2013, from O'Reilly: www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html

O'Reilly, T. (2010). Web 2.0 Expo SF 2010: Tim O'Reilly, "State of the Internet Operating System (Publication. Retrieved August 10, 2013, from O'Reilly: http://radar.oreilly.com/2010/03/state-of-internet-operating-system.html

O'Dell, C., & Hubert, C. (2011). *The new edge in knowledge: how knowledge management is changing the way we do business*. New Jersey: John Wiley & Sons, Inc.

Papoutsakis, H. (2006). How Far Can Information Systems Support Inter-firm Collaboration? [Electronic Version] (Publication. Retrieved October 29, 2011, from Journal of Knowledge Management Practice, 7(3): http://www.tlainc.com/articl119.htm

Plamadeala, A., & Stefan, G. (2010). Collaborative Systems Approached through Web 2.0. *Journal of Knowledge Management, Economics and Information Technology, 1*(1), 31-36.

Randeree, E. (2006). Knowledge Management: Securing the Future. *Journal of Knowledge Management*, 10(4), 145-156.

Sveiby, K. (2001). A knowledge-based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital, 2*(4), 344-358.

Tapscott, D., & Williams, A. (2006). *Wikinomics – How mass Collaboration changes everything*. New York: Portfolio (Penguin Group).

Von Krogh, G. (2002). The communal resource and information systems. *Journal of Strategic Information Systems, 11*(2), 85-107.

Zaffar, F. O., & Ghazawneh, A. (2012). Knowledge Sharing and Collaboration Through Social Media – The Case of IBM. In: Proceedings of the 7th Mediterranean Conference on Information Systems, MCIS 2012 (Publication. Retrieved September 30, 2012: http://urn.kb.se/resolve?urn=urn:nbn:se:hj:diva-19262

APPENDIX I

Survey

Dear Fellow Cisco Colleague,

As part of my master's program at University Nova of Lisbon, I am currently doing a research to obtain a better understanding of the use of social software platforms for knowledge sharing purposes. I have decided to perform a case study within Cisco, using Webex Social as an object of study.

This survey is completely anonymous and your responses will be strictly confidential. Please take less than 10 minutes to complete. The survey will be open from the 11th to the 18th of June 2013.

Thank you for your time and support!

Best regards,

Sabrina Fialho
MSc. Information Systems and Technologies

Informed Consent

By clicking "I Agree" you represent that:

1 - You have read, understand accept the collection of this data is for academic research for Sabrina Fialho; and

2 - Your survey participation is completely voluntary; and

3 - You give permission to include your survey responses in reports and presentation materials without divulging your identity to be shared with Cisco and University Nova of Lisbon.

☐ I Agree

☐ I Do Not Agree

Destination: **Survey page 1** (Set in Introduction (I Agree))
Destination: **I do not agree ending** (Set in Introduction (I Do Not Agree))

(End of Page 1)

I. Identification

1. Current office location (required):

- ☐ Americas
- ☐ APJC
- ☐ EMEAR – Netherlands
- ☐ EMEAR – Poland
- ☐ EMEAR – Portugal
- ☐ EMEAR - United Kingdom
- ☐ EMEAR - Other - Please specify: _____

2. In which Organization do you belong to (required)?

- ☐ Channel
- ☐ Finance
- ☐ Human Resources
- ☐ Logistics
- ☐ Manufacturing
- ☐ Marketing
- ☐ Operations
- ☐ Sales
- ☐ Other _____

3. Current role (required):

- ☐ Individual Contributor
- ☐ Manager

4. In which subject do you have a University Degree or previous industry experience (required; at least one choice):

- ☐ Arts
- ☐ Biological Sciences
- ☐ Business, Finance & Economics
- ☐ IT Engineering
- ☐ Engineering (other)
- ☐ Law
- ☐ Mathematical Sciences

- ☐ Physical Sciences
- ☐ Social Sciences & Humanities
- ☐ Other. Please specify: _____

(End of Page 2)

II. Collaborative Tools

1. In your current role, which device do you use more frequently?

- ☐ Laptop
- ☐ PDA
- ☐ Smartphone
- ☐ Tablet
- ☐ Other, please specify: _____

2. How often are you using each of the following tools (required):

	Almost Never	1 to 10 times a month	1 to 10 times a week	On a daily basis
Cisco Docs				
Ciscopedia				
E-mail				
Intranet				
Jabber				
Telepresence				
WebexSocial				

3. From the above listed tools where you answered "almost never" or "1 to 10 times a month" (section II, question 2), what is currently preventing a more regular usage (required; maximum 3 options)?

Please select the most appropriate answers:

- ☐ I am too busy
- ☐ I don't feel the need to use it in my current role
- ☐ I am using another tool/technology with similar capabilities
- ☐ I don't know how to use it
- ☐ I have no interest
- ☐ It is not necessarily available when needed
- ☐ I don't have access to it
- ☐ Not applicable

4. Which tool do you use more frequently to share documents with your peers (required)?

Please select the most appropriate answer:

- ☐ Cisco Docs
- ☐ E-mail
- ☐ Webex Social
- ☐ Other, please specify: _____

5. Which method(s) do you use more frequently to share ideas, concerns or ask work related questions to your peers (required; maximum 3 options)?

Please select the most appropriate answers:

- ☐ E-mail
- ☐ Phone calls
- ☐ Team meetings
- ☐ Telepresence & video
- ☐ Webex Social
- ☐ Other, please specify: _____

(End of Page 3)

III. Webex Social

1. In your current role, what is the primary reason for using Webex Social (required)?

Please rate according to the importance (1 to 5: 1 = lower; 5 = higher)

	1	2	3	4	5
Communicating on specific projects/programs					
Accessing metrics & reports					
Chat					
Discussions & Forums					
Finding experts on a specific topic					
Following people within the company					
Sharing news and/or announcements					
Sharing documents					

2. In your view, what are the main advantages of using Webex Social? (required; maximum 4 options):

Please select the most appropriate answers.

- ☐ Accessing more information in one single platform
- ☐ Availability of specific applications
- ☐ Easy access to experts within the company
- ☐ End to end user experience
- ☐ Ease of access by everyone
- ☐ Using an innovative tool

- ☐ Reaching out to a broader audience
- ☐ Reducing the volume of e-mails
- ☐ Other, please specify: _____

3. In your view, what are the main disadvantages of Webex Social (required; maximum 4 options)?

Please select the most appropriate answers:

- ☐ It's difficult to find the information required
- ☐ General lack of knowledge on the tool
- ☐ Limited number of applications
- ☐ Limited search capabilities
- ☐ Limited audience
- ☐ Overlap with other available tools
- ☐ Too many communities
- ☐ Too many restricted communities
- ☐ Other, please specify: _____

4. Would rewards and recognition promote your active participation and contribution to posts, discussions, etc. (required)?

- ☐ No
- ☐ Yes
- ☐ Maybe

(If "Maybe" > question 4 a):

Destination: **Survey page 5** (Set in 4 (No))

Destination: **Survey page 5** (Set in 4 (Yes))

Destination: **Survey page 4** (Set in 4 (Maybe))

(End of Page 4)

---

4 a). If you replied "Maybe" to the previous question, please explain:

_____

_____

_____

_____
_____
_____
_____
_____

Destination: **Survey page 5** (Set in 7)

(End of Page 5)

Please feel free to add any comment about Webex Social that this survey has not previously covered:

_____
_____
_____
_____
_____
_____
_____
_____
_____

Destination: **Survey Submitted** (Set in 5)

(End of Page 6)

Thank you for your participation and support!

APPENDIX II

Recent case studies in the field of Knowledge Management

Author	Title of the research/paper	Year of publication	Journal/Publication	Firm or organization studied
S. Raveesh, M.C. Vinoda Kumara, K.V. Shobha, Kumara	*Knowledge Era: Knowledge Management in Multinational Company – Role of KM in Project Management Scenario*	2013	Information and Knowledge Management	Perot Systems
Rong-ying Zhao and Bi-kun Chen	*Study on Enterprise Knowledge Sharing in ESN Perspective: a Chinese case study*	2013	Journal of Knowledge Management	PMCC Company
Fahd Zaffar and Ahmad Ghazawneh	*Knowledge Sharing and Collaboration through Social Media – The Case of IBM*	2012	Proceedings of the 7th Mediterranean Conference on Information Systems, MCIS 2012	IBM
Chester Labedz, Steven Cavaleri and Gregory Berry	*Interactive Knowledge Management: Putting Pragmatic Policy Planning in Place*	2011	Journal of Knowledge Management	US Government program - CARS
Johanna Hautala	*International academic knowledge creation and ba. A case study from Finland*	2011	Knowledge Management Research & Practice	Finnish universities
Kavoos Mohannak	*Knowledge Integration Within Japanese Firms: The Fujitsu Way*	2011	Journal of Knowledge Management Practice	Fujitsu

Carla O'Dell and Cindy Hubert	*The New Edge in Knowledge*	2011	Book (APQC)	ConocoPhillips Fluor IBM MITRE
Claudia Ringel-Bickelmaier and Marc Ringel	*Knowledge Management in International Organizations*	2010	Journal of Knowledge Management	United Nations Development Program (UNDP) World Bank International Atomic Energy Agency (IAEA) European Commission
Anna Jonsson and Thomas Kalling	*Challenges to knowledge sharing across national and intra-organizational boundaries: case studies of IKEA and SCA Packaging*	2007	Knowledge Management Research & Practice	IKEA SCA Packaging
Francesco Ciabuschi	*On IT systems and knowledge sharing in MNCs[6]: a lesson from Siemens AG*	2005	Knowledge Management Research & Practice	Siemens AG

[6] MNCs stands for Multinational Corporations.

Thomas Davenport and D. Meister	*Knowledge Management at Accenture*	2005	Book	Accenture
Joseph Davis, E. Subrahmanian and A. Westerberg	*The ‘‘global’’ and the ‘‘local’’ in knowledge management*	2005	Journal of Knowledge Management	Du Pont
Murray Jennex	*Case Studies in Knowledge Management*	2005	Book	Infosys Know-CoM Reserve Bank of New Zealand
Thomas Davenport and G. Probst	*Knowledge management case book: Siemens best practices*	2002	Book	Siemens
B. Biren; S. Dutta; and L. Van Wassenhove	*Xerox: Building a corporate focus on knowledge*	2000	Book (INSEAD)	Xerox
John Storey and Elizabeth Barnett	*Knowledge Management Initiatives: Learning from Failure*	2000	Journal of Knowledge Management	International Resources
Charles G. Sieloff	*“If only HP knew what HP knows”: the roots of knowledge management at Hewlett-Packard*	1999	Journal of Knowledge Management	Hewlett-Packard

APPENDIX III

Answers
Depends on what the bonus was.
If it's a useful tool and has a business benefit, then I wouldn't require a reward.
It might encourage me to use WebEx Social more. More than likely though, it probably wouldn't. If I have to be bribed to use it, a long term usage pattern will probably not arise.
My main concern would be that rewarding peoples' activity on Webex Social would only lead to people over using it in order to win prizes. It would have to be well monitored to ensure that people are using it for the proper purposes rather than just spamming content to gain recognition.
Depends on the rewards and depends on the kind of Topic/Posts.
Not sure if the rewards and recognitions would have an effect on us to use it more
Depending on the subject I would have to know how I could contribute.
If it contributes to our work, more rewards to accomplish our objectives. And everyone, beside the role that represents in Cisco, should be able to participate in all programs published, not only specific roles, like VPAMs... These are ways that should take people to use more Webex Social.
Webex Social is cumbersome, not everyone uses, or know how to use it, and if I decide to use it for a project or some communication, then I have to spend double the time letting the people know where and how to access the information, then I have to fight with the permission, and check that only the people that is supposed to have access have it, and then fight with the web browser, because Webex social doesn't play well with my default browser, chrome. So, maybe if there is an incentive, like economical or something similar I will put an effort to use it, but otherwise, I don't really see the reason.
I do not use Webex Social that much and not sure if rewards would make me use it more.
The rewards would have to be very good as primarily I'm motivated to do my job and essentially only go to places like WebEx Social because I'm trying to find out something or I want to share something with the team. I don't normally have the time to use tools that are slow or difficult to use as I just want to get the job done in the most efficient way possible.

I've heard about this approach, 'gameification' I think it is called. It’s interesting, may be relevant to certain target groups and demographics. People are led by rewards - I don't think I would change my behavior based on the influence of a 'social score' but others may.
I think if you incentivized people to use it then more people would.
A specific interesting reward would probably engage me to participate more in a specific community, but I think it fails the overall purpose of Webex Social - a work platform where people can easily access the information they need, or find SMEs. It should not be abnout reward or recognition.
Not always Webex social initiatives have a lot of visibility within the SLT
Depends what the nature of the incentive was, and how much time participation in a 'competition' type incentive would take
I believe the main reason for people not to use Webex Social that much is that the tool is still pretty slow and not always compatible with all browsers. A deeper training would probably help more than some rewards (which drive competition and are not always the right way to go, visibility is good but we should not be driven always by that...). When I say "deeper training", I mean training from experts that would really help, not only the high-level trainings around Webex Social available to all and which do not really help to start using the tool...
Suggest a clearly defined adoption plan of the tool including programs and incentives, together with a clear roadmap and benefits.

APPENDIX IV

Answers
I'm sure it's a great tool; I would welcome the chance to use it in greater details. I use 'older' tools (because I'm old) but if this makes my role more relevant I'd like to utilize it.
In a busy Cisco world - emails still over shadow Webex Social as it is quicker to focus on information required in a hurry.
In general I find Webex social as very good tool to share the knowledge, very powerful tool. Happy to have it in place.
Searches return irrelevant and useless information - no structure in Webex Social - not interested in following or being followed - I do not care about blogs - I avoid Webex Social like I would avoid the plague
There needs to be an option to sign out of chat.
Webex Social is a tool. The rules of inputting information are varied. The method of display is varied. There is little continuity of best practice. Information validity is hard to recognize. There is a huger amount of dead links. There is no single source of truth.
Webex social could be a wonderful tool if focusing more on the Forum/newsgroup part. At the moment the tool can do everything. As consequence, often is not properly used, confused, full of overlapping information. Internal Websites, Intensive File sharing, and other functionalities should not be done on the Webex social in order not to confuse the logic of the information inside the topics.
Mainly the problem about Webex social (at least for me) is the lack of knowledge about it. For example, I use the directory a lot to see who is asking for info, maybe if this was available only on Webex social, I would have to go through Webex social and would eventually navigate and look for some more info and utilities in there.
This tool is not user friendly, it's difficult to use opens several tabs. Basically it needs a lot of working to have it attractive for me to use it.
Not user friendly
The more people use Webex Social, the more attractive it will be to use the tool. Compared to other Social Media sites, Webex Social is difficult to use and I wonder why.... Why can't we come up with something that is more simple and intuitive?
Besides the publications that are permanently posted in Webex Social, there should be more utilities for the daily bases work, and more incentive programs to everyone. With

this study you should receive a lot of suggestions, and it´s good to consider the good ones to promote more Webex Social.
Not completely sure about the differences between Webex social and Google docs. regardless, my main feedback about these tools is that it's really important to develop/make available a tool that allows colleagues to collaboratively work on documents, at the same time, similarly to what happens with Google docs (or Google drive) what we have available to everyone these days, doesn't have this capability. I need a tool where I can store a document (e.g. a spreadsheet) and everyone can access and edit it at the same time. At some point I approached some contacts in this team who told me that this was being developed, but I haven't heard about it again.
The idea is really good however, the last few experiences I've had is that it's very slow or I've not been able to access the communities I want to or the documents that I need, which is highly frustrating. Also, it's not very intuitive to use. The search engine is pretty poor too.
Webex social is not a useful tool. Searching for content is not easy. When you do post you rarely get a response. It does not seem to appeal as a workflow tool as there does not seem to be accountability for other users to participate.
I think you should speak to the Business unit regarding the development on Web Ex Social.
I like the concept behind Webex Social and can see the value of this type of tool. However the system is somewhat "clunky" and there is an investment in time to learn how to properly navigate/use that I haven't made yet. There is also the change in culture required to move mindset away from "old" ways of sharing information (email, ftp server, etc...) to "new" social led tools. I'm of the old school so still on the social journey!
I think Webex social is great to get news about specific topics, such as promotions, which are frequently updated. It's a way of keeping up to date.
I'm not 100 % sure what the full scope of WebEx social is.
It’s got the potential to be brilliant, but more people need to use it, we need some more education in its capabilities, I struggle to find things on there at times, end up giving up, and look elsewhere!!! Not the idea I know, but get frustrating at times!
WebEx Social is not a valid platform for multiple updates. I mean, is impossible for multiple users to update an Excel file a shared workbook.
It's a cultural change to use Webex social over existing similar tools. To drive greater

adoption the existing tools such as Jabber for example should be removed to drive users to use messaging in Webex social if they are working from their PC.
I use more and more Webex Social and I think the purpose of the tool is great! But it is too "heavy", too difficult to use, communities for example are too limited... Posts are the easiest functionality of the tool, but are not "compatible" with communities...
I find that the tool is slow and also can be unreliable in MS Internet Explorer. Also I often see posts where the pasted in material does not "wrap around" correctly so you can only see the left hand side It does not seem easy to use mainly due to the speed. I never feel inclined to stay on the platform and "surf" I just search for what I need and then leave.

APPENDIX V

How often are you using each of the following tools					
Organization	Cisco Docs				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	4	2	3	1	10
Finance	1	0	1	0	2
Human Resources	0	2	0	0	2
Logistics	0	1	0	0	1
Manufacturing	1	1	0	0	2
Marketing	1	0	0	0	1
Operations	14	17	5	12	48
Other	5	1	1	2	9
Sales	10	5	26	3	44
Grand Total	36	29	36	18	119

How often are you using each of the following tools					
Organization	Ciscopedia				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	1	0	9	0	10
Finance	0	0	2	0	2
Human Resources	0	0	2	0	2
Logistics	0	0	1	0	1
Manufacturing	0	0	2	0	2
Marketing	0	0	1	0	1
Operations	11	4	33	0	48
Other	0	1	7	1	9
Sales	11	2	31	0	44
Grand Total	23	7	88	1	119

How often are you using each of the following tools					
Organization	Intranet				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	0	0	1	9	10
Finance	0	1	0	1	2
Human Resources	0	0	0	2	2
Logistics	0	0	0	1	1
Manufacturing	0	1	0	1	2
Marketing	0	0	0	1	1
Operations	2	5	0	41	48
Other	2	0	0	7	9
Sales	1	4	0	39	44
Grand Total	5	11	1	102	119

How often are you using each of the following tools					
Organization	Jabber				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	0	0	0	10	10
Finance	0	0	1	1	2
Human Resources	0	0	1	1	2
Logistics	0	0	0	1	1
Manufacturing	0	0	0	2	2
Marketing	0	1	0	0	1
Operations	1	4	19	24	48
Other	0	0	2	7	9
Sales	0	2	0	42	44
Grand Total	1	7	23	88	119

How often are you using each of the following tools					
Organization	Telepresence				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	7	1	2	0	10
Finance	0	1	1	0	2
Human Resources	1	0	0	1	2
Logistics	1	0	0	0	1
Manufacturing	0	0	0	2	2
Marketing	1	0	0	0	1
Operations	29	13	5	1	48
Other	4	4	1	0	9
Sales	21	14	3	6	44
Grand Total	64	33	12	10	119

How often are you using each of the following tools					
Organization	Webex Social				
	1 to 10 times a month	1 to 10 times a week	Almost Never	On a daily basis	Total
Channel	0	6	1	3	10
Finance	0	1	1	0	2
Human Resources	0	0	0	2	2
Logistics	0	0	0	1	1
Manufacturing	0	1	1	0	2
Marketing	0	1	0	0	1
Operations	6	18	1	23	48
Other	1	3	1	4	9
Sales	12	15	3	14	44
Grand Total	19	45	8	47	119