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El uso de redes sociales empresariales para compartir conocimientos: SHIFT, el caso CEMEX

The use of enterprise social networks for knowledge sharing: SHIFT, the CEMEX case

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Resumen

Las plataformas de redes sociales empresariales han sido implementadas en las organizaciones multinacionales con la expectativa de crear valor para todos los grupos de interés (industria, organización, equipos y miembros). El objetivo de este artículo es tener un mejor entendimiento de cómo diseñar y apoyar las prácticas de compartir conocimiento de redes colectivas para movilizar iniciativas globales. De acuerdo a la Ley de Metcalfe, el valor de las redes ha sido por largo tiempo considerado, al menos parcialmente, una función del número de nodos conectados a la red. Sin embargo esta visión de valor está incompleta con respecto al tipo de interacciones que pueden llevarse a cabo en las redes sociales. Cuando Metcalfe desarrollo la teoría sobre esta función, él visualizó una red que llevaba un tipo de mensaje particular. Sin embargo, con el surgimiento de las redes sociales, la misma plataforma en la red puede llevar todo tipo de mensajes, desde actualizaciones de información, juegos, recaudación de fondos, etc. Para entender cómo se lleva a cabo el compartir información, un modelo de investigación es propuesto y un estudio de caso es documentado, basado en SHIFT, la plataforma de CEMEX para la colaboración, considerando la dinámica de capital social, y el apoyo a las interacciones y relaciones de la red. Finalmente, en base a los hallazgos de adopción de la plataforma sobre la creación de valor económico, pragmático y social, una agenda para futura investigación es sugerida.

Palabras clave: Institucionalización de Redes Sociales Empresariales, SHIFT, y Adopción de Redes Sociales Empresariales.

Abstract

Enterprise social network sites' adoption for business purposes into large multinational organizations have been implemented with the expectation to create value for all the stakeholders (industry, organization, teams and members). The objective of this paper is to better understand how to design and support knowledge sharing practices of collective networks to mobilize global initiatives. According to Metcalfe Law, the value in networks has long been known to be at least partially a function of the number of nodes attached to the network. However, these views of value are incomplete with respect to the kind of interactions taking place on Social Media networks. When Metcalfe theorized his function, he visualized a network that carried a particular kind of message. However, with the emergence of social networking, the same social network platform can carry a number of kinds of messages, from information updates, to game play, to fundraising, etc. To understand how knowledge sharing takes places a research model is proposed and a case study is documented, based on SHIFT, the CEMEX

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platform for collaboration through consideration of social capital dynamics, support for relationships and network interactions. Finally, and building upon the platform adoption findings regarding economic, pragmatic and social value creation, a research agenda for future research on this topic is suggested.

***Keywords**: Institutionalization of Enterprise Social Networks, SHIFT, and Enterprise Social Network Adoption.*

Clasificación JEL: M15

Introduction

Organizations today are responding to globalization by being increasingly distributed and networked, making it more challenging to share and to mobilize knowledge across time and space for project based initiatives (Ellison, Gibbs, & Weber, 2014; Cross, Parker, Prusak, & Borgatti, 2001). As result, many large organizations today are being redesigned and restructured as global networks as a key organizational strategy to sense and respond to customers and business purposes and being leveraged by technology to facilitate coordination and support interdependent groups and business communities (Ellison et al., 2014; Espinosa, Slaughter, Kraut & Herbsleb, 2007).

It is very important for organizations to be able to respond to their dynamic environment on time. This is among the reasons for the organizations to increasingly use the virtual teams or sometimes networks. The virtual networks allow the organizations to work through their global and decentralized work processes (Hertel et al., 2005). The virtual networks include members that collaborate, communicate and perform different tasks regardless the geographical or organizational boundaries using information technology (Gibson and Cohen, 2003). This form of organizations are relatively new and strongly dependent to IT, therefore It governance is a crucial issue in them (Heckler et al., 2016).

The role of virtual teams and networks is becoming gradually crucial in organizations; each of the virtual teams in an organization may have a different type of leadership, goals, culture and priorities and use IT in different ways (Kanawattanachai and Yoo, 2007).

In particular, multinational organizations are turning to virtual work models based on teams and with distributed work arrangements in order to communicate, collaborate and coordinate global initiatives and best practices; however, team members face challenges identifying experts in different geographies and parts of the organization (Ellison et al., 2014; Faraj & Sproull, 2000), developing trusting relationships that encourage collaboration and coordination in the form of information sharing (Gibson & Gibbs, 2006), and sharing best practices and knowledge that are dispersed in local contexts. Employees working in distributed business communities must negotiate the difficulties associated with working across geographic, cultural and other structural boundaries (Ellison et al., 2014; Gibbs, 2009). Enterprise social networks (ESN) are being a way to address these challenges because they provide a common ground with the use of platforms that enable large-scale knowledge sharing.

Large, distributed multinational organizations have embraced the implementation and adoption of enterprise social network technologies. Because of globalization and forces of change such as deregulations, technology, standardization and modularity, these multinational organizations are increasingly dependent on successful knowledge sharing regarding best practices among individuals, teams, and business communities because of their high degree of geographical dispersion across locations and time zones. Knowledge sharing may range from exchanges of information between individuals on a one on one basis (Ellison et al., 2014; Cummings, 2004), to current problem solving, collaboration and coordination in global virtual teams working on common projects

(Ellison et al., 2014; Tsai, 2001), to large-scale organizational challenges to generate solutions to global business initiatives (Ellison et al., 2014; Levin & Cross, 2004).

Knowledge sharing in multinational and geographical disperse companies is a complex process due to the need to build trust and to negotiate common meaning and distinctions among diverse cultures, languages and expectations among individuals worldwide, as well as interdependent teams and business communities. Distributed organizations face opportunities and challenges above and beyond those that are co-located: knowledge mobilization and knowledge sharing may be difficult by the fact that employees may not recognize who has relevant expertise (Ellison, Gibbs, & Weber, 2014; Farak & Sproull, 2001), may be reluctant to request or share information with colleagues in other organizational settings, may not be motivated or incentivized to collaborate considering that personal expertise and information is power, or may be uncomfortable asking others publically fearing to lose face or lack of expertise on their jobs. For companies with a global footprint, organizational knowledge sharing is key to learn and to apply best practices, ingrained as a mindset to communicate effectively, to collaborate and coordinate global initiatives, as the process of providing and receiving information, advice or feedback (Ellison, Gibbs & Weber, 2014; Cummings, 2004), acknowledging that teamwork will provide synergies and complement and enrich projects to co-create individual and common meanings (Ellison et al., 2014; Treem & Leonardi, 2012).

With an increased focus on the benefits and opportunities of implanting virtual work models, ESN are increasingly being adopted to foster collaboration and innovation in large distributed companies (Ellison, Gibbs, & Weber, 2014; Treem & Leonardi, 2012). Previous research (see Table1) has demonstrated that collaborative technologies (i.e. blogging, jamming, strategy updates and crowdsourcing) may enable innovation, with transparency and inclusiveness at internal and external levels within and between organizational teams (Morton, Wilson & Cooke, 2015; Cummings, 2004) but little consideration for the interactive space of ESN and the important role of social dynamics at the interpersonal and organizational levels (Ellison, Gibbs & Weber, 2014).

In addition to organizational theory and research on ESN, in this article the focus is on understanding how ESN may support community relationships and knowledge-sharing practices. Ellison, Gibbs & Weber (2014) and Koch, Leidner & Gonzalez (2013) agreed on three key features in their bounded definition of social network sites:

"A social network site is a networked communication platform in which participants (1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; (2) can publicly articulate connections that can be viewed and traversed by others; and (3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site". These features shape the communication dynamics and interactions that occur on these collaboration platforms, aligned with user goals, perceptions, and other social factors, and provide a basis for understanding these tools in an organizational context (Ellison, Gibbs & Weber, 2014).

While social spaces are often considered within the context of individual use, when considering ESN researchers need to examine and theorize their organizational spaces – platforms that support the organizing of work and are collectively determined as co-workers negotiate meaning and create new structures for work. This paper contributes to the literature on ESN and knowledge sharing by explaining the characteristics of

the organizational collaboration spaces for distributed teams and organizations. This approach acknowledges that ESN use is shaped by the means of the technology (at the individual and organizational levels) and thus considers relevant concepts, such as social capital, from an interactive space perspective in order to explicate collaboration and knowledge production in distributed organizations, integrating the understanding of the social aspects of social media use with knowledge of organizing processes in virtual teams and networks (Gibbs, 2009). In order to better understand the role of ESN in knowledge-sharing practices, the focus is on individual and organizational collaboration spaces that shape processes of knowledge sharing.

Table 1

Success Cases on Collaboration and Knowledge Sharing (Morton, Wilson & Cooke, 2015)

Organization	Collaboration/ Knowledge Sharing	Platform	Inclusiveness/ Transparency
Daimler (Matzler et al, 2014)	Interaction and collaboration to develop new business concepts	BI Comunity-Online Platform	Internal Inclusiveness, encouraging employees to give feedback to evolve concepts, proposals and business models
Hobsons (Kass, 2013)	Actively learning on strategy with awareness on business alignment	HiWire-Online Platform	Transparency by enabling people learning on alignment strategy to business goals
IBM (Matzler et al., 2014)	Collaboration to develop the vision and asustainable company	Innovation Jam-Online Platforms	Inclusiveness by opening a common space for strategic conversation for employees, customers and strategic partners
Unilever Lombardi, 2014)	Open strategic conversations among to trigger collaboration and knowledge mobilization	Chatter-Online Platform	Inclusiveness by including middle management in conversations on business strategy, limited to top managers
Virgin Media (Cheng, 2012)	Collaborate with management with feedback on business strategies	We're all Ears-Interactive Interviews	Inclusiveness with ideas and feedback on business strategy
Wikimedia (Dobusch and Mueller Seitz, 2012)	Knowledge mobilization to build a long-term strategic plan	Strategy Wiki-Online Platform	Inclusiveness by crowdsourcing a new long term strategic plan with its user base

Geographically dispersed multinational companies have found business value when adopting ESN platforms such as Shift, Yammer, Ning, Jive, or Telligent, because these collaborative spaces enable people to engage in "sense-making" about other colleagues (Ellison et al., 2014; DiMicco, Geyer, Millen, Dugan & Brownholtz, 2009), provide access to new people and expertise, and increase awareness and contact among virtual employees (DiMicco & Millen, 2007). However, some empirical work on social media in the organization suggests that these tools are primarily used to connect with customers and other external stakeholders, and engage in professional networking. Less work has examined ESN for internal communication among team members and others in the organization. ESN provides new affordances and possibilities beyond technological features, such as visibility, expertise legacy and documentation, best and practice mobilization) that can be helpful for broad distribution of information and knowledge, but they are especially powerful because they situate the content within a social context, where the community and individuals' network and identity information is shared (Koch et al., 2013).

The main differences with ESNs (see Table 2) are based on targeting different users, audiences, purposes, including the design and behavior to reach and to retain members. An important difference is also the size of membership, for social networks is important to have as many participants as possible to increase network value, for ESN what it really matters is to have the right sponsors, mobilizers and members but based on expertise, tenure and leadership to keep the business initiatives moving and to deliver sustainable business value.

According to Ellison, Gibbs y Weber (2014), there are four important factors when adopting enterprise collaboration platforms. ESN can constrain, enable, and reshape (1) social capital dynamics to coordinate how and to what end individuals mobilize information and support resources embedded within their social networks, (2) community relationships encouragement through the sharing of identity information within organizational contexts, (3) context collapse or difficulty to differentiate work and personal circles, and (4) knowledge sharing practices within networked organizational structures.

Table 2

Characteristics of Enterprise Social Networks (Koch, Leidner & Gonzalez, 2013)

Dimensions	Enterprise Social Networks
Purpose	Focusing on business and job related goals, connecting people to people, knowledge among communities, and playbooks as best practices to mobilize expertise across global business networks
Governance	Influenced by an institutional structure and an explicit set of company user guidelines and norms and being integrated by a leader or expert, a mobilizer, and key members representing the global initiative for all considered regions
Users	People appointed or selected by the executive committee, leader or human resource personnel as key members for a particular community
Coordination	Generally managed and coordinated by track mobilizers within each network. Each track is designed to encourage communication, collaboration, and business interaction among members of the global networks
Reach	Global initiatives aligned to organizational strategies. Each Global Network has key tracks to deliver business objectives.

Social capital

Social caapital describes resources embedded in social relationships and interactions within a network (Ellison et al., 2014; Lin, 2001). Access to individuals outside one's close circle provides access to non-redundant information, resulting in benefits such as employment connections. Considering the IBM case when adopting ESN, and particularly regarding social capital and social networks among IBM employees, (Ellison et al., 2014) the company found a positive relationship between intensive use of the platform and measures of social capital, including stronger ties, a greater willingness to contribute, and greater access to new people and expertise. Employees in distributed organizations may find it more difficult to activate social capital because they have fewer opportunities for face-to-face interactions, which are important for sustaining social relationships. On the other hand, employees found lack of access to traditional and spontaneous place-based interactions, considering that they were less likely than their co-located peers to benefit from incidental learning and to know who holds organizational knowledge or where it is held.

Community relationships

Trust and team building are important when individuals in a team or community look forward to build effective relationships with others who are physically distributed throughout the organization, only then wider and more heterogeneous networks are possible associated with the synergies derived from diverse perspectives and new information that constitute bridging social capital Also, individuals and team members may be more willing to collaborate and contribute significant content to a community or platform that offer visibility, recognition or reputation among peers, compared to a traditional company directory (Ellison et al., 2014; DiMicco et al., 2009).

Identity and profile information may help members of distributed organizations more easily locate experts in a particular field, and make the interaction more effective and personal and help peers find common ground, and making it more productive and long lasting for future projects or endorsements.

Context collapse

Context collapse relates to the difficulties associated with online platforms in which communities representing different circles of one's identity intersect (i.e. work, family, friends, and hobbies).

According to Koch, et al. (2013), in traditional, offline contexts, individuals typically interact with a specific set of people in one particular space, which allow them to behave different automatically and based on that specific context. Organizational members working in online communities must also behave differently according to particular professional audiences such as managers versus peers, colleagues versus clients or business partners (Ellison et al., 2014).

Knowledge sharing in network organizations

As a consequence of forces of change such as globalization and technology, organizations are shifting to networked organizational forms, where work is distributed on a needed based taking advantage of expertise wherever is located, to follow the sun according to the particular time zone, fostering communication, collaboration and coordination to innovate. As a result of this global footprint, multinational organizations, embrace and adopt collaborative technologies and online communities of practice and interest (Ellison et al., 2014; Espinosa et al., 2007). As organizations rely increasingly on distributed expertise, skills and talent, new work models and dispersed structures are being redesigned to sense and to respond more effectively to customer and

market demands. These global organizations take advantage on mobile technologies and platforms to build communication bridges at all times to facilitate information exchange and knowledge sharing, and to provide individuals and teams within the work model through which connections to peers, projects and resources. Knowledge sharing is key to facilitate absorptive capacity and to foster collaboration for business innovation: knowledge and best practices must be shared and mobilize across communities and global networks to target the right contexts and objectives to generate sustainable business value (Ellison et al., 2014).

Based on previous research global networks are proven to be effective strategies and mechanism for knowledge sharing and mobilization, as a wide range of communication takes place through informal and formal social networks maintained by members of a given organization. Social networks within an organization are a well-studied organizational feature, impacting diffusion of best practices worldwide and the work produced by teams and well in order to create value and increase organizational productivity and growth over time (Ellison et al., 2014).

ESN may help make these seemingly invisible networks of interaction visible through friends' lists and activity feeds, in addition to supporting interaction more generally when members comment on each other's posts and tag each other's content (O'Leary, 2015). According to O'Leary's findings is important to connect people to people in order to collaborate and to convert information to knowledge and to connect this knowledge to people.

Organizationally, ESN are being used mainly for sharing knowledge, best practice mobilization, engaging in organizational politics, locating specific expertise and skills, and collaborating in global virtual teams and communities of practice. ESN are also used for social purposes, such as establishing ties, finding common ground and maintaining relationships with co-workers (Ellison et al., 2014). People are empowered with ESN to playbooks, granting them access to information about knowledge and new processes. Also, the employees are able to share common concerns and challenges from peers and gaining visibility from top management and sponsors. Thus, peers are aware of the importance to be visible and recognize for their contribution and position within the organization, affecting a team member's acceptance, use and adoption of collaborative platforms, and creating value for all the stakeholders (Ellison et al., 2014).

In summary, ESN provide organizational platforms that foster and nurture business communities of practice as a strategy to mobilize and share knowledge at the individual and organizational level. ESN promote collaboration dynamics while connecting people for knowledge sharing via socialization and interpersonal interaction, and promoting virtual work models to exchange and coordinate challenges, projects and best practices to create sustainable economic, pragmatic and social value. This paper has highlighted the value of an integrated approach for ESN adoption to change the employees' mindset regarding collaboration, knowledge sharing as a means to be recognized and visible in large organizations with a global footprint. An important element is the support of the top management team and the transparency on how the ESN value will be assessed for the community members, with clear objectives and key performance indicators.

Research Model

Based on the findings in the literature review the following research model is proposed for analyzing the adoption of ESN and knowledge mobilization and their effect on business value creation (figure 1).

The research model answered the research question: How to assess the business case when large multinational companies adopted ESN?

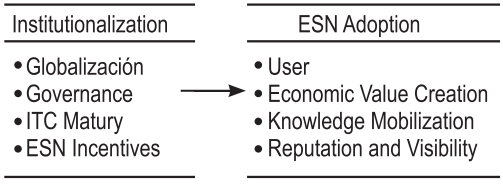


Figure 1. Enterprise Social Network Adoption (Author, 2016)

Globalization is being conceptualized as the shift into a more integrated and interdependent world economy. It is triggered by forces of change such as technology, deregulation and trade liberalization, and modularity and standardized interfaces.

Governance is conceptualized as the level in which the right and accountable people, processes, resources and technologies are appointed and implemented to make sure an initiative is clearly and comprehensively being planned and executed to build sustainable value.

ITC Maturity is the level in which the technology is aligned to optimize operations and create value, from reactive, exploratory, emerging, integrated, to optimizing collaboration for innovation (Arvay, 2013).

Enterprise Social Network Incentives are the organizational recognitions to promote and to measure knowledge sharing.

The number of active users in a community sharing, mobilizing and collaborating as consequence of ESN adoption.

Economic Value Creation are the business Key Performance Indicators based on process optimization, EBITDA, ROA, ROE, revenue streams of new markets/products/services as consequence of ESN adoption.

Knowledge Mobilization based on best practices' documentation as playbooks and replicated in other regions, communities and markets as consequence of ESN adoption.

Reputation and visibility based on the expertise and leadership of a member or community, contributing to the business performance improvement as a consequence of ESN adoption.

The business case based on economic and pragmatic value creation will build sustainable conditions for the members of the communities as well as for the organization in the long run.

Based on the Research Model, the following proposition is proposed:

Proposition1 (P1): Institutionalization of Global Networks will positively influence ESN Adoption.

P1a: Globalization of large multinational organizations will positively influence ESN adoption based on the number of users.

P1b: Governance of large multinational organizations will positively influence ESN adoption based knowledge mobilization.

P1c: ITC Maturity in large multinational organizations will positively influence ESN adoption based on virtual work practices and knowledge mobilization.

P1d: ESN incentives in large multinational organizations will positively influence ESN adoption based on reputation and visibility.

Research Methodology

The general purpose of this paper was to explore the topic of ESN and its association with value creation through established literature and in the context of CEMEX Case Study and the adoption of SHIFT. As defined by Cooper and Schindler (2006) explorative studies tend "toward loose structures with the objective of discovering future tasks". An explorative

study is relevant when researchers pretend to develop concepts more clearly, establish priorities, develop operational definitions, and improve the final research design" (Cooper and Schindler, 2006). In this way, this paper provides the basis for the following "formal" study of ESN in the assessment of a business case, providing metrics for economic, pragmatic and social value.

This paper included a case study, which means that it was a context specific study that sought to investigate a previously established pattern (derived from theory) in relation to that of an empirical example, providing generalizable results (Yin, 1984).

This paper analyzed a single case study, and all the five Global Business Initiatives (44,000 members) and executives sharing Knowledge Mobilization and Virtual Work Practices (Playbooks) were interviewed by the author, and there was not interrater agreement to consider.

All the selected participants had a unique experience within a specific field of expertise, as well as on overall issues concerning CEMEX' strategy, so it was therefore possible to cover all aspects of the research model. The unit of analysis was the global business initiatives (global networks). The rationale for considering a single case was that CEMEX-Shift represents a critical case in testing a well-formulated theory to determine whether the Globalization, Governance, ITC Maturity, and ESN incentives, and may represent a reference for other ESN with an innovative approach and profile.

According to Yin (1984) a case study is the best method for examining and seeking to understand in-depth, a newer and less explored phenomenon. Complex phenomena such as organizational innovation processes may be difficult to measure quantitatively. Qualitative methods can be helpful in identifying and characterizing multifaceted organizational dynamics that can influence continuous innovations within a large multinational company. The findings generated a process theory of how ESN Institutionalization influenced the ESN adoption to promote business model innovations.

Respondents were provided with a list of questions, prior the interview. This allowed the respondents to prepare themselves for the interview, to consider the requested information beforehand and eventually, to prepare some additional supporting material. This was seen as advantageous in terms of effectiveness and speed of the whole interview process. The interviews were held with each respondent in a videoconference meeting, and were approximately 1 hour in duration. All interviews were recorded, and following the interviews, these recordings were transcribed. To make sense of the data collected, color codes were assigned to paragraphs according to which themes, determinants or variables were being discussed in order to identify commonalities, provide a better overview and make the subsequent analysis of findings easier (Table 3).

Table 3

Research Design Taxonomy (author, 2016 based on Cooper and Schindler, 2006)

Category	Options		
Degree of crystallization of research question	Explorative	Formal	
Purpose of study	Descriptive*	Casual*	Action
Sample/topical scope	Statistical study/ Extensive	Case Study/ Intensive	
Primary data collection	Qualitative	Quantitative	
Time horizon	Cross-sectional study	Longitudinal study	

Case Study

CEMEX, the Mexican cement producer and one of the world's largest manufacturers of

building materials, is using an internal social network to connect its employees across 50 countries.

CEMEX launched its IBM Connections-based platform, SHIFT, in 2010. Since then the number of users has grown from 400 to comprise all their 44,000 employees. The number of communities soared from six to 2,400.

SHIFT was born when CEMEX's CEO Lorenzo Zambrano to explore ESN and how it would work for the company.

At the height of the economic crisis, the building materials industry was going through difficult times. That is when Zambrano understood that technology could give the company a competitive edge. He encouraged his employees to look at work in a different way, to break silos and to collaborate between operations and business units.

The innovation director, Mr. Gilberto García began testing different ESN technologies, including CISCO and Microsoft. He settled for IBM Connections. "This technology seemed more mature. It had the ability of offering integrated solutions. It went beyond wiki engines, blogs and document management."

García appreciated IBM Connections' ability to learn from external social networks and to transfer that experience into the enterprise. "SHIFT has a YouTube-like engine that enabled employees to upload videos. This was very important as some of them prefer sharing videos to writing blogs".

At the beginning of the project, CEMEX took care of linking its business strategy to that of SHIFT.

The business focus around collaboration for innovation and customer centricity were according to García, the key drivers and triggers behind the implementation and adoption of the SHIFT as the ESN.

SHIFT was instrumental in supporting the company's five strategic Global Initiatives. One of these, for example, was aimed at replacing the use of carbon with fossil fuel in its operations. CEMEX leaded globally in this field and has won awards also thanks to the amount of collaboration made possible by its ESN.

SHIFT has also enabled research groups focused on concrete and insulation to develop three new global brands in just two years.

Work on SHIFT has been organized around the five Global Initiatives, which make up the core of CEMEX's business strategy.

Each Initiative began with structured governance (sponsors, mobilizers, initiative leader, and initiative members). The assigned Executive Leader was a senior executive with sufficient political weight and global visibility, and an Initiative Leader with operational knowledge and hands-on experience. Mr. García gave them guidance on how to develop the network and helping them get employees on board and drive traffic. For example, in the case of the Alternative Fuels and Biomass Initiative, plant operators were invited to join the community, take part in initiatives and share best practice.

García also encouraged employees to create spontaneous communities, which he calls Fertile Grounds. One of these was launched by a group in Germany that needed to share information on how to ship materials in a more efficient way. Colleagues from Latin America and the US joined in and created a highly participant knowledge-based community.

In Spain, a community that started at grass-root level ended up going viral. A group of electricians at a plant in the country wanted to collaborate and exchange ideas. They created a community on SHIFT that drew the attention of colleagues in Mexico and other parts of Latin America. They found the practice useful and decided to replicate the experience. Soon CEMEX electricians around the world decided to convert these communities at country level into a single global one. Another example is

that of a laboratory in Switzerland that works on cements. They created a community on nanotechnology and their weekly blog has been attracting thousands of hits from all over the world.

Apart from communities, SHIFT offers employees other ways to access the company's knowledge. CEMEXpedia is a wiki-based repository with more than 700 articles that employees consult and edit regularly.

The ESN adoption was a result of a customer-centric approach. Instead of contacting colleagues and asking them for a meeting in which García demonstrated how to use SHIFT, he started by asking them about their collaboration needs. "I want to understand what they do and what their challenges are".

To promote adoption, the Innovation area used a wide network of evangelists. "We are a small team of ten people, seven in Mexico and three in Switzerland. We can't reach and on-board every single employee".

That was why active users, key adopters and champions were encouraged to get involved, spread the word and become an extension of the innovation team.

CEMEX believed in incentives and in rewarding employees for participating actively in the life of the platform. SHIFT had a system of badges that were generated automatically based on social analytics. "Before we introduced badges, we had to look at each single community and measure their level of engagement manually."

Employees could also receive Plus Cards in the form of digital certificates awarded to them for participating in training sessions or projects. Plus Cards became part of their identity on SHIFT and were displayed on their profile page for visibility based on performance.

Thank You Notes from the CEO were handed out through the system as a form of personal recognition to employees that generated exceptional value for the company.

According to García, "awards were about being recognized at global level". "SHIFT gave people the opportunity to showcase their experience to colleagues around the world, well beyond the local level at which they work".

CEMEX was working on a new version of the platform, SHIFT 3.0 that was introduced in 2014. This included new functionalities to help employees work socially on projects.

The company continued to be committed to ESN. Based on the experience of one of the Executive Leaders, "we are in building materials and are therefore focused on manufacturing processes. But the difference between us and other construction companies is that we truly believe in technology".

Data Analysis

Globalization and Users. CEMEX was a global building materials company that provided high quality products and reliable service to customers and communities around the world. CEMEX produced, distributed, and sold cement, ready-mix concrete, aggregates, and related building materials in more than 50 countries, and maintained trade relationships in approximately 106 nations (figure 2).

The number of users went from 400 in 2010 to comprise 44,000 employees in 2015. The number of communities soared from six to 2,600 in the same period of time.

Governance and Economic Value Creation. Each global network had very structured governance: sponsor, executive leader, mobilizer, global track leader, a core team, a support group global coordinator and the members of the network (see figure 3). The community governance secured a sustainable life cycle, particularly to keep the projects moving, the documentation of best practices and the facilitation and access to required resources, the monitoring of key performance indicators, and the redirection of business objectives to improve performance and value creation.

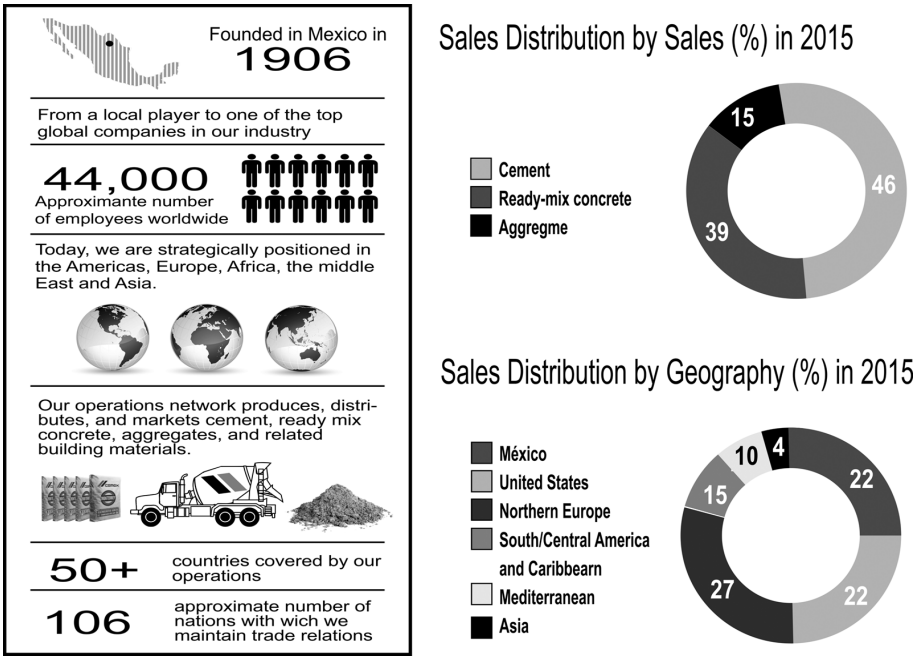


Figure 2. Global Network Initiatives trigger by Globalization (CEMEX, 2015)

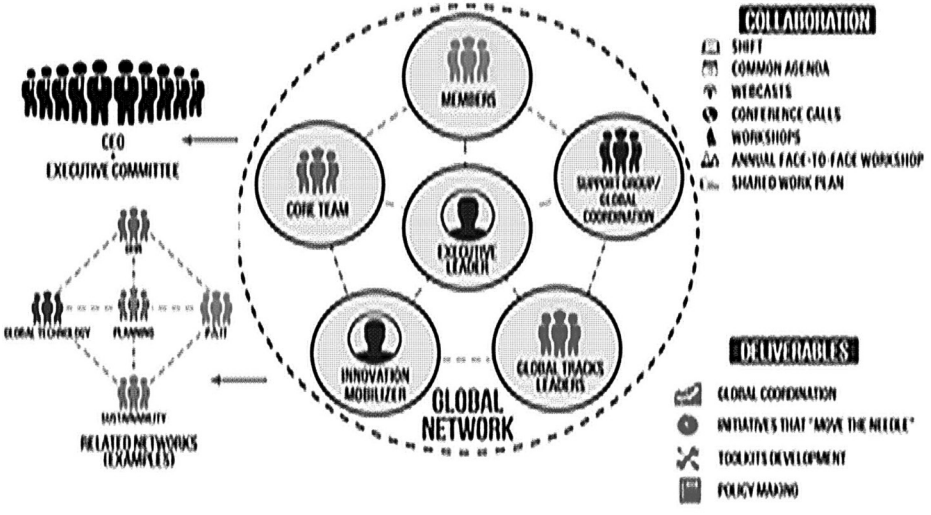
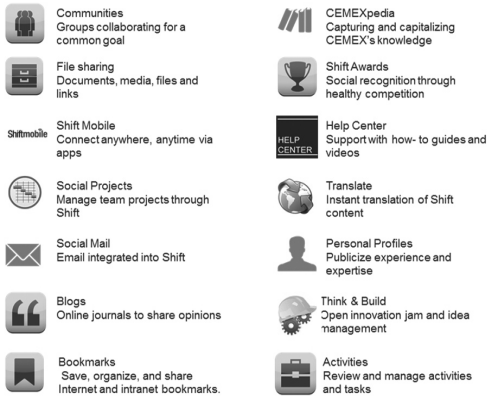


Figure 3. Global Network Governance (CEMEX, 2015)

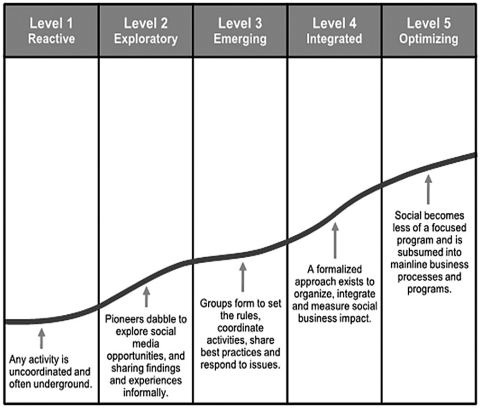
ITC Maturity. The information technologies to leverage the ESN were comprehensive (figure 4) and the level of maturity was rated at a 4 level (with integrated communities and tracks structured around CEMEX's global initiatives) on a 5 scale, where 5 is top. The maturity level in terms of the adoption of SHIFT as a technology platform being aligned to the business strategies was medium, with still a way to go in terms of optimizing global initiatives (figure 5).

ESN Incentives and Reputation/ Visibility. SHIFT recognized the collaboration and performance of the members in each network as well as the level of participation, performance, skills and competences acquired and applied to the business objectives.

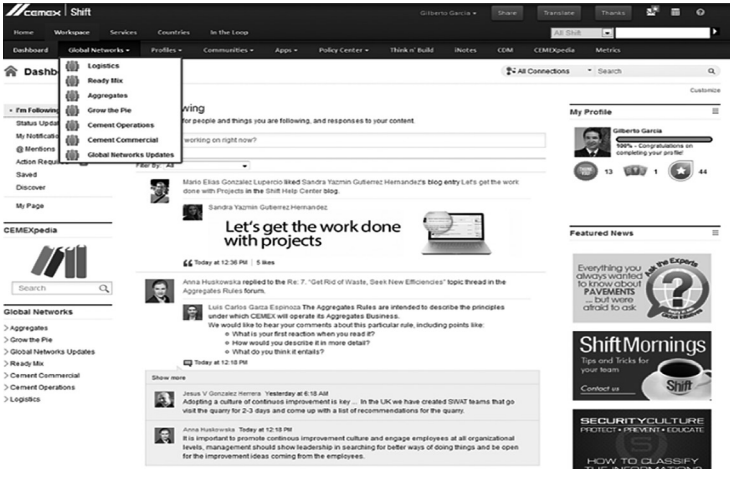
The recognition provided visibility and reputation worldwide with badges and awards being posted in the members' profiles (figure 6)



Fuente: (CEMEX, 2015)
Figure 4. Information Technologies for Collaboration



Fuente: (CEMEX, 2015)
Figure 5. ITC Maturity and Virtual Work Practices



Fuente: (CEMEX, 2015
Figure 6. ESN Incentives to motivate visibility, reputation and identity (CEMEX, 2015)

Business Value Creation. SHIFT created value for CEMEX in two domains, economic and pragmatic (best practices and knowledge mobilization) (Table 4).

Table 4

Business Case to Asses Global Initiatives' Value Creation

Global Initiative	Economic Value	Pragmatic Value
Alternative Fuels	• Increase % of Alternative Fuels from 5% to 28 % in 7 years (Industry Leader) • Savings of 130M USD in 2012 • Avoided use of 2M Metric Tons of CO2 • Developed sustainable AF sourcing strategy • CAPEX project evaluation and prioritization 16 projects in 2013 with18,618MUSD assigned and executed 4,777MUSD • Global CEMFuel Award winner 2014 and 2015 • 14 alternative fuel projects are registered with the UNFCCC	• Shift Community • Benchmark Tools • Experts discussion forums • Collaborative CAPEX evaluation • Best practice videos • Weekly newsletters • Initiative Council meeting two times per year
Grow the Pie	• Developed marketing and commercial material for Pavements and Housing Solutions • Reached 315 concrete paving projects • LEED Certification Services Launch • Built a reference catalog of infrastructure projects • Residential housing strategy, and Housing Value Chain Analysis for certain solutions • Promoted Integral solutions internally (through workshops and training) and externally: Insulated Compacted Concrete, Blocks Building System, Roller Compacted Concrete, Pavement Systems	• Newsletters • Global marketing material available • Agenda of webcasts • Reference projects community • Annual Core Team Meeting and Workshop • Virtually Enabled by Shift
Ready Mix	• Developed and launched 3 global brands in record time (2 more in pipeline for 2014/2015) • Set a common language on Type of Products and KPIs. • Increased value added products from 8.5% in 2006 to 33% of total ready mix sales in 2015 • Defined a global ready mix pricing strategy with potential to increase income by implementing surcharges, service fees and full freight recapture • Agreed on a global price management framework based on price corridor principles • Proposed a pricing model implementation plan to cover CX worldwide in 2014-2015	• Concrete and Pricing Talks (Webcasts) • Core team Virtual weekly meeting • Core team Face to Face (4 times per year) • Value Added Champions Network • Country Representatives Network • VAP Sales Performance Dashboard • Pricing KPIs Dashboard • Virtually Enabled by Shift
Aggregates	• Developed a Continuous Improvement Methodology • Established a Champions Network in 9 countries • Built a Career Development Kit for Aggregates • Designed a Business Improvement tool and dashboard • Defined a new Cost Allocation Methodology for benchmarking, new reporting to start in 2014 • Pricing initiative pilots started in 5 countries (US, MX, UK, FR, DE)	• Continuous Improvement Ideas Database • Ask the Experts Forum • Monthly CI Champions Practice Sharing Calls • Monthly Update Conference Calls • Virtually enabled by Shift
Cement Commercial	• Developed the Commercial Academy Model • Implemented the Commercial Common Language in Mexico, USA, UK, SAC and Asia regions • Implemented the "Train the Trainers" program to develop internal skills to continue training. • Content developed for next stages of Commercial Academy • Commercial Intelligence best practices replicated in Egypt and SAC • Commercial Management Model defined and deployed in Mexico	• Shift Community • Benchmark Tools • Experts discussion forums • Collaborative CAPEX evaluation • Best practice videos • Weekly newsletters

Conclusions

CEMEX launched SHIFT in 2010 as an Enterprise Social Network to support knowledge sharing within the organization, using a platform approach that acknowledges both the individual and organizational platform of the collaboration and coordination tools. Build upon prior work on interactive platforms by applying notions of collective interactions for organizing. SHIFT provided proof that knowledge sharing in distributed multinational organizations, may shape knowledge mobilization through consideration of social capital dynamics, support for relationships and interactions, context collapse, and network interactions.

One important feature of SHIFT as an ESN was that it built collective memory by enabling employees to ask questions and archive and distribute the answers to a wide audience for future use, saving time and redundant effort.

The various applications and functionality (e.g., wikis, social tagging, and rater/ recommender tools) provided different means for knowledge sharing. Ethnographic work helped identify independent processes, visibility and reputation worldwide, especially for enabling knowledge sharing.

Regarding the research question and propositions, the conclusions were that: the assessment for value creation was based on a sound and robust business case (Table4) for the members of the community as well as for the organization worldwide, considering that global footprint and multiple time zones opened the opportunity to work virtually, taking advantage of the expertise where is located, and using SHIFT as a platform and mean to connect, communicate, collaborate and coordinate in global initiatives.

Based on the Case Study important findings were the importance of the governance structure to provide institutional voice and recognition of the experts, leaders and mobilizers across communities. The visibility of the members who actively contributed expertise, knowledge and best practices was significant to build reputation not just in the community but in the executive level during the top management team meetings, when each community leader presented the results and contributions to the company, and the people responsible for those achievements.

Proposition

(P1): Institutionalization of Global Networks will positively influence ESN Adoption was supported by the case of SHIFT in CEMEX

Table 5.

Findings and Rational for the Research Model's Proposition

Proposition	Rational
P1a: Globalization of large multinational organizations will positively influence ESN adoption based on the number of users	Supported by the number of active users
P1b: Governance of large multinational organizations will positively influence ESN adoption based knowledge mobilization	Supported by the identification of sponsors, executive and functional leaders, mobilizers, support and members
P1c: ITC Maturity in large multinational organizations will positively influence ESN adoption based on virtual work practices and knowledge mobilization	Partially Supported as SHIFT maturity is considered medium, integrating and evaluating business impacts
P1d: ESN incentives in large multinational organizations will positively influence ESN adoption based on reputation and visibility	Supported by providing incentives to motivate participation based on performance, reputation and visibility worldwide

The paper provided academic and practical insights regarding conditions, resources and metrics to take into account when companies and institutions design and implement Enterprise Social Networks.

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