



HAL
open science

Enterprise social networks for the benefit of ambidextrous organisation? The case of a major oil company

Cédric Dalmasso, Sebastien Gand, Frederic Garcias

► To cite this version:

Cédric Dalmasso, Sebastien Gand, Frederic Garcias. Enterprise social networks for the benefit of ambidextrous organisation? The case of a major oil company. 3rd International Conference for Concurrent Enterprising, Jun 2017, Madère, Portugal. 10.1109/ice.2017.8279968 . hal-03698884

HAL Id: hal-03698884

<https://hal.science/hal-03698884v1>

Submitted on 19 Jun 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/316883159>

Enterprise social networks for the benefit of ambidextrous organisation? The case of a major oil company

Conference Paper · June 2017

DOI: 10.1109/ICE.2017.8279968

CITATION

1

READS

166

3 authors:



Cedric Dalmasso
MINES ParisTech

21 PUBLICATIONS 110 CITATIONS

[SEE PROFILE](#)



Sébastien Gand
Sciences Po Grenoble

65 PUBLICATIONS 227 CITATIONS

[SEE PROFILE](#)



Frédéric Garcias
Université de Lille

20 PUBLICATIONS 29 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Alternative organisations [View project](#)



Politiques publiques d'accompagnement de la perte d'autonomie [View project](#)

Enterprise social networks for the benefit of ambidextrous organisation?

The case of a major oil company

Cédric Dalmaso
CGS - I3 - UMR CNRS 9217
Mines ParisTech, PSL Research University
Paris, France
cedric.dalmaso@mines-paristech.fr

Frédéric Garcias
LEM, UMR CNRS 9221
IAE Lille, Université Lille 1 Sciences et Technologies
Lille, France
frederic.garcias@iae.univ-lille1.fr

Sébastien Gand
CERAG FRE CNRS 3748
Sciences Po Grenoble, Université Grenoble Alpes
Grenoble, France
sebastien.gand@sciencespo-grenoble.fr

Abstract — In recent years, many companies have endeavoured to set up their own enterprise social networks. In this note, we will explore one possible use of such networks, namely implementing them to the benefit of “distributed” and “participatory” breakthrough innovation processes. The authors were able to observe an “innovation challenge” experiment (entirely online) within Technip, a major oil company. The results underscore the following points: the social network opens up a “space” that provides a playing field for innovative profiles which the mechanism also serves to identify; the challenge struggled to appeal to anyone other than a hard core of enthusiasts, but did manage to reach a wider audience of silent, passive “readers”, which infers that the effects of this type of mechanism are not limited to active participation; managers’ lack of time and management involvement represented a major hindrance to widening this challenge beyond the “hard core”; lastly, it required an intensive, multifaceted steering effort.

Keywords — *enterprise social networks (ESN), organisational ambidexterity; steering of innovation processes*

I. INTRODUCTION : DO ENTERPRISE SOCIAL NETWORKS SERVE ANY PURPOSE?

Today, lots of companies use their own “enterprise social networks”, but, questions are raised concerning their adoption and actual use by company employees. To the extent that the Harvard Business Review recently chose a provocative title for an article on this subject: “Why No One Uses the Corporate Social Network” [15]. In it, the author touched on a lack of managerial commitment to promoting the use of these networks, for fear of losing control and hierarchical distance over their employees. But is the supposed “subversive” nature of these tools (given their more “horizontal”, “egalitarian” mode of operation) alone to blame for their meagre adoption? We are inclined to question whether these tools are used in ways that demonstrate their genuine usefulness both for employees and the company, which would allay concerns that

they are merely a “management fashion” [2] at the tail end of the phenomenal success of otherwise “open” social media. Indeed, hemmed in between internal communication tools (collaborative platforms like SharePoint, community forums, etc.) and unrestricted private-use social media platforms (Facebook, Twitter, etc.), the added value of these networks still seems uncertain. In fact, it is hardly surprising that the limited academic research conducted on these enterprise social networks (thereafter abbreviated as ESN) focuses on their potential “affordances” [21] [9].

In this article, we explore the potential value of implementing ESN to the benefit of “distributed” and “participatory” breakthrough innovation processes. Given their characteristics, these networks may be seen as providing a seemingly hitherto unattainable alternative to decentralised and distributed (but poorly coordinated) innovation processes based on the local, spontaneous initiative of intrapreneurs or informal communities of practice on the one hand, and highly controlled, structured innovation processes, but isolated from the rest of the organisation (within permanent or temporary innovation entities) on the other hand. As pointed out in the literature, getting as many people as possible to participate in “exploratory” activities, especially in organisational or industrial contexts that are highly oriented to short term concerns, infers a specific effort to “make room” for exploration. The term used in the literature to refer to this challenge is that of “contextual ambidexterity”. Can the use of ESN for carrying through breakthrough innovation processes facilitate the creation of “spaces” for exploration in highly restrictive environments?

The authors were able to observe the preparation and deployment of an online “innovation challenge” experiment within Technip, a major oil company historically organised around projects for exploiting proven technologies, but one that questions its ability to generate new technological breakthroughs. Here, we give – via a case study – an analysis

of this experiment, integrating multiple viewpoints and data sources (qualitative interviews, study of the data provided by the social network, questionnaire, etc.). We thus were able to highlight a number of key findings from the experiment: the fact that the social network opens up a “space” that provides a playing field for innovative profiles which the mechanism also serves to identify; that the challenge struggled to appeal to anyone other than a hard core of enthusiasts, but did manage to reach a wider audience of silent, passive “readers”, which infers that the effects of this type of mechanism are not limited solely to active participation; that managers’ general lack of time and involvement represented a major hindrance to widening this challenge beyond the “hard core”; and lastly, that it required an intensive, multifaceted steering effort. The implications of this experiment for the literature on innovation processes and organisational ambidexterity are then identified.

II. PROMOTING CONTEXTUAL AMBIDEXTERITY THROUGH THE USE OF ENTERPRISE SOCIAL NETWORKS?

A. A “distributed exploration” in contexts geared towards “exploitation”: the challenge of “contextual ambidexterity”

Researchers [1] [16] theorised about the heterogeneous, mutually exclusive character of exploitation and exploration activities, which are based on different thought processes and time frames, and which compete for the allocation of rare resources. Noting that firms were unable to renounce one or other of these types of activities, researchers became aware of the importance of reconciling exploration and exploitation: hence the term “organisational ambidexterity” to designate a successful combination of the two. Research on this subject gradually underscored the need to address both these activities simultaneously, leading to the term “simultaneous ambidexterity”. Two conceptions of simultaneous ambidexterity subsequently emerged. The first, described as “structural”, focused on the separation between entities dedicated to exploration, and those dedicated to exploitation. Gibson and Birkinshaw [11] introduced the concept of “contextual ambidexterity” to describe procedures for balancing exploration and exploitation diffused within organisations, where it is up to each team, and even each individual – in return for substantial managerial support – to be able to balance efficiency and adaptability, convergence and divergence.

This idea is congruent with a rising representation of innovation in which it is no longer a matter merely for isolated specialists (R&D teams), rather a process that is widely distributed within organisations, with a number of variations: distributed within each individual (“intrapreneurial” vision [7], [19]), and within cross-functional teams, whether they be formal (project entities [17]) or informal (“communities of practice” [13] [6]) and in an increasing number of cases, open to outside the firm (“open innovation” approaches [8]). While there is an increasing amount of literature on these “distributed” approaches to exploration, there is scant research that explicitly raises the matter of what makes them possible in contexts that are highly oriented towards “exploitation”. We may well ponder how individuals can avoid being systematically overtaken by organisations’ “natural trend” [16]

to give preference to immediate concerns over the long term, to the known over the unknown and, accordingly, to exploitation over exploration.

Our starting point is that, in order to be suitably operational in contexts that are highly “constrained” by the “weight” of exploitation (and without otherwise backing “clandestine” or “after-work” activities by a handful of isolated players), contextual ambidexterity must be placed within a specific device [3]. These conditions for successfully attaining contextual ambidexterity have received very little coverage in the literature, which focused on analysing its effects in terms of performance [18]. The limited avenues opened up highlight the need for an organisational “culture” and a form of “open, flexible” leadership to foster working contexts that can successfully balance deviation and refocusing. However, we have noticed that, so far, the literature overlooks one promising avenue: using digital collaboration and communication tools to promote the introduction of exploratory practices, and, ultimately, to underpin contextual ambidexterity.

B. ESN and their uses: a lever for breakthrough innovation?

- Digital tools and distributed innovation processes

Recently, a number of studies have emerged on the use of digital coordination and communication tools (e-mail, intranet portals, internal instant messaging services, etc.) for organisation and innovation purposes, however as yet they remain few and far between. One of the properties of inherent in this kind of tool makes “distributed” innovation processes possible [24], or at least more feasible. The advantage of digital tools [24] is that they significantly “reduce coordination and communication costs” (p. 1401), and thus make it possible to integrate heterogeneous knowledge, assumed to be a major lever for breakthrough innovation.

However, this observation has yet to significantly materialise with a view to implementing contextual ambidexterity within organisations. Indeed, much of the research on the impact of digital tools on distributed innovation focuses on the opening up of innovation processes “to the periphery of organisations” (ibid.), as is the case with approaches such as open innovation, involving users in design, or crowdsourcing. Meanwhile, other research has sought to understand how digital tools might facilitate and enhance the work of existing “entities dedicated to breakthrough innovation” [5] or “communities of practice” [4]. In both cases, this research does not provide any genuine insight into how digital environments render the hypothesis of contextual ambidexterity tangible or not, or, more precisely, that of the coordinated integration of exploratory activities in the daily work of the organisation's players who, moreover, are already widely involved in exploitation practices.

This question is all the more interesting given that many organisations have, in recent years, set about providing their employees with the digital tools or interfaces needed to “connect” with all of their fellow colleagues and, in particular via the implementation of “ESN” [15].

- Emergence of ESN, and uncertainties as to their use

“ESN” are now massively deployed within large multinational corporations alongside the advancement of new forms of organisation based on “virtual” teams and “distributed work arrangements” [9]. The limited research on this subject deals mainly with the possible uses of these internal social media, notably bringing up the concept of “affordance” [21] [9]. This concept suggests an approach to tools based on the potential usages that individuals envisage based on their features, and which may be very different from one individual or group of individuals to another, and, by extension, very different from the actual usages initially imagined by the tool’s designers.

So far, this affordance-based approach had been inclined to dominate since the stakes are high for understanding what these tools have to offer over and above existing communication or coordination tools. “Scholarship has largely failed to explain if and how uses of social media in organizations differ from existing forms of computer-mediated communication” [21]. Four characteristics were identified [21] to differentiate ESN from more established communication tools, and to be therefore more likely to promote their use: visibility, persistence, editability and association. Firstly, visibility: an ESN acts as a lever for individuals’ visibility, one that is much more powerful than standard tools due to “egalitarian social conventions” [10]. Secondly, persistence: on an ESN, what goes down in writing stays there for a long time, since conversations are systematically archived and can easily be searched. In this respect, these tools differ both from virtual tools (such as instant messaging) and from oral exchanges which are rarely traced. Thirdly, editability: on an internal social network, what is written can be indefinitely corrected and modified before being written, and also after. What is lost in terms of spontaneity is gained in terms of the ability to better develop and structure thoughts or ideas. Lastly, association: these internal networks are considered a powerful lever for creating new links. Indeed, social networks were designed to stimulate and facilitate the generation of links thanks to their features: the possibility of searching for people based on common areas of interest, on the number of friends in common, on automatic linking suggestions, and so on.

These reflections on the matter of “affordance” mainly concern individual use of the tools, and help to understand which values individuals can perceive in their use. This analysis is useful since it serves to understand, and even to anticipate, whether or not the deployment of these tools will be successful. Unfortunately, this largely theoretical groundwork has yet to be completed by empirical research that will allow us to observe and assess the ways and the extent to which these tools are adopted by users. This in turn would allow us to validate or revoke the theoretical insights on affordances. In addition, Ellison, Gibbs and Weber have underscored the need not to limit ourselves to an individual approach on affordance, hence the concept of “collective affordance”. So exactly which “collective affordances” are we talking about here? It is now obvious that ESN were primarily envisaged from the perspective of their contribution to the exchange of information or knowledge [9] [10], but without it ever being clearly established whether this exchange was part of the exploitation logic (which is how most communities of practice operate) or,

on the contrary, the exploration logic. Here, we seek to discuss the possibility of using an ESN to inspire exploration activities, especially in universes highly oriented towards exploitation.

- What are the management requirements for a distributed and virtual innovation process?

In this article, via the analysis of an experiment conducted within Technip, we shall examine how breakthrough innovation can represent a potential use for tools such as ESN which, thus far, have struggled to attain the requisite “value” that would otherwise prompt their widespread adoption by company employees. In parallel, we shall examine how internal social networks can help to facilitate distributed innovation processes and, in particular, the extent to which the use of these highly specific media platforms opens up new avenues for “controlling” or “steering” innovation. In fact, it seems to us that the literature in the field of innovation is torn between, on the one hand, “distributed” approaches, which we can qualify as “spontaneist” or “bottom-up”, which include community of practice or intrapreneurship-type approaches, and which, by definition, dispense with any form of centralised management; and on the other hand, “voluntary” or “top-down” innovation approaches, i.e. based on tightly controlled, centralised management (via a “method” or “process”, if necessary), but which generally infer groups of individuals, whether physical and temporary (e.g. for “creativity seminars”) or functional (within “innovation entities”, or exploration projects [14]). Even if this antagonism is no doubt rather simplistic, we can nevertheless affirm that, given the main driving forces behind the literature on innovation management, *the idea of controlled contextual ambidexterity represents an enigma, or even a paradox*. That said, do ESN constitute an innovation likely to do away with this antagonism between distributed/spontaneous approaches on the one hand, and grouped/controlled approaches on the other? This question inevitably leads to another: what becomes of the “management” in the context of a distributed process based on “virtual” exchange methods? Does it take the same forms as “classic” innovation management?

Our research question is: **to what extent can ESN contribute to the construction and maintenance of contextual ambidexterity in contexts geared towards “exploitation”?**

III. METHODOLOGY

Given that the issue has yet to be extensively researched, we carried out an exploratory case study [22] aimed at observing and understanding what ESN can bring to organisational ambidexterity in organisations geared towards “exploitation”. Authors were able to examine the preparation and implementation of a breakthrough innovation “challenge” at Technip.

A. General presentation of the case

Technip is a major French corporation working in the energy business. It operates throughout the world via 38 sites. With a workforce of several tens of thousands of employees, it was initially founded to exploit industrial patents derived from research. Changes in the oil industry since the 1980s have engendered a certain degree of cautiousness in relation to

breakthrough innovation. Firstly, this industry, which implies potentially lethal environmental risks, experienced a number of major accidents that strengthened oil majors' reluctance to be pioneers for breakthrough innovations. Following the industry's wave of mergers in the 2000s, the sector has become highly "financialised" in an industry. As a result, it has become less inclined to adopt more risky strategies that could lead to operating losses following the introduction of new products or processes. More recently, the drop in crude oil prices has all but shelved any exploration projects. And yet, developments in motion in the oil industry raise a number of innovation issues for Technip, such as the search for less costly processes, or adapting its products to operations in very deep marine waters (up to 3,000 metres). Here, Technip's R&D managers have voiced concerns about the group's ability to meet these challenges when the firm's underlying priority is the capacity to deliver current projects in compliance with cost, quality and lead time requirements.

In this very restrictive environment, in 2014 the company's management set up an ESN, Yammer©, in addition to other digital collaboration tools. In 2015, the innovation and R&D partnerships manager devised an event using the company's ESN, Yammer©. The goal was to organise a "breakthrough innovation challenge". For this purpose, the Technip manager called on the services of a consulting firm (STIM) specialised in breakthrough innovation facilitation methods. The approach adopted organising a collective design process around three phases: a phase for sharing knowledge, a phase for generating concepts, and a phase for developing proposals. Between March and May 2016, the online challenge was held on the Yammer© social network. 1,075 people signed up. The theme selected for the challenge was to "invent the pipeline of the future". It took place as follows:

- Phase 1 (7 – 29 March 2016): phase for generating and sharing knowledge
- Phase 2 (4 April – 3 May 2016): phase for generating concepts
- Phase 3 (9 – 21 May 2016): vote on the best concepts out of the 10 short-listed

The challenge was co-designed and co-facilitated by Technip's Innovation Manager and by two external consultants from STIM. The choice for the management of the innovation process was as follows: phase 1 is prepared very early on (knowledge of the industry and its products, orientation of the challenge theme) with proposed themes to fuel exchange and reactions; every week, the facilitation team establishes a one-page summary of these exchanges and of the key points raised; in phase 2, the team regularly steps in to assist participants with the development of their concepts, whether on the "open" discussion thread, or via private messaging discussions. To mobilise employees, twenty or so challenge "ambassadors" are recruited from different entities; their mission is to promote the challenge within their respective departments following a two-hour training session.

Upstream of the challenge, the assigned objectives are as follows: firstly, in the short term, generating breakthrough

ideas on the design of pipelines; next, in a medium-term perspective, enhancing participants' understanding and awareness of breakthrough innovation; lastly, increasing the use of the ESN.

B. Data collection and analysis

A team of three researchers (authors) joined the challenge organisation to assess what such a challenge could produce via an ESN. This team carried out a case study and implemented mixed methods to define the research subject in the context of the testing of a device. Longitudinal data was produced before, during and after the challenge.

Upstream of the challenge, the research team undertook to better understand the company, its activity and its stakes. 11 people were questioned during 10 interviews lasting between one and three hours. The persons interviewed were selected with the innovation manager, who played the role of "key informant" [23]. During the challenge, in order to observe and characterise its social and organisational effects, we established a data collection system based on 5 sources.

- Daily monitoring of the online challenge

Via our own Yammer© accounts, we were able to monitor the daily conduct of the challenge as non-participating observers. Firstly, this allowed us to monitor its actual development, and to understand the characteristics and specific constraints of this development. The discussion threads were stored by the tool, and could thus be searched whenever necessary.

- Weekly interviews with the facilitation team

Before the actual launch of the challenge, the decision was made to interview – each week – the two members of the facilitation team, the Technip innovation manager (for an internal vision) and the consultants (for an external, comparative vision). These parallel interviews were conducted during the 11 weeks of the challenge, and lasted anywhere from 20 to more than 50 minutes for each of the two interviews, i.e. more than 9 hours of interviews in all.

- Post-challenge interviews

At the end of the challenge, our work focused on the users' assessment of the experiment and their views on the benefits and limitations of the challenge, and, more generally, on the future of innovation within Technip. We conducted a series of targeted interviews with challenge participants of various profiles, whether in terms of their work location or their roles and activities during the challenge. The goal was to decipher, via in-depth qualitative information, the experience and influencing factors of the participation and facilitation, both online with Yammer©, and offline without it. The choice of interviewees was made in conjunction with the challenge's facilitators, and based on our online observations. 10 persons were selected. 5 of them were challenge ambassadors, with contrasting levels of involvement. All of the persons contacted agreed to respond to our invitation. The interviews were held between 11 May and 23 June 2016. They lasted between 20 – 90 minutes. These interviews were transcribed, and assigned thematic codes [12].

- Post-challenge online questionnaire

We also drew up a questionnaire with a questioning structure in line with that of semi-structured interviews. Spaces allowing free expression were included to collect as much open information as possible given the experimental nature of this first challenge. The internal facilitator sent it (via the Qualtrics platform) to 4,143. Ten days later, a reminder was sent only to the 1,075 members of the Yammer© group who signed up for the challenge. 319 completed questionnaires were received. Of these, 68 were from people who had not taken part in the challenge, and 251 from people who had. Out of the entire population contacted, this represents a response rate of 7.7%, which is fairly surprising given that a substantial part of this population had not shown any real interest in the challenge. The response rate for persons who participated in the challenge is perfectly satisfactory: 23.34%, i.e. 251 participant responses out of 1,075 who signed up for the Challenge.

- Study of the Yammer© analysis data

We were able to retrieve data on the monitoring of the challenge's activity on Yammer©. All of the messages posted on the challenge's Yammer© group were retrieved for the duration of challenge, i.e. 1,826 messages exchanged by a total 218 active individuals (out of the 1,075 who signed up for the challenge). Based on the data retrieved, we coded the respective roles of the message senders in the challenge (facilitator, ambassador, participant) and the location of the messages. Lastly, we coded all of the messages based on the overriding nature of their content: socialisation, general knowledge, proposal or development of a concept, knowledge relating to an internal project, or knowledge relating to an external project.

IV. RESULTS

A. A space for identifying and mobilising innovative profiles

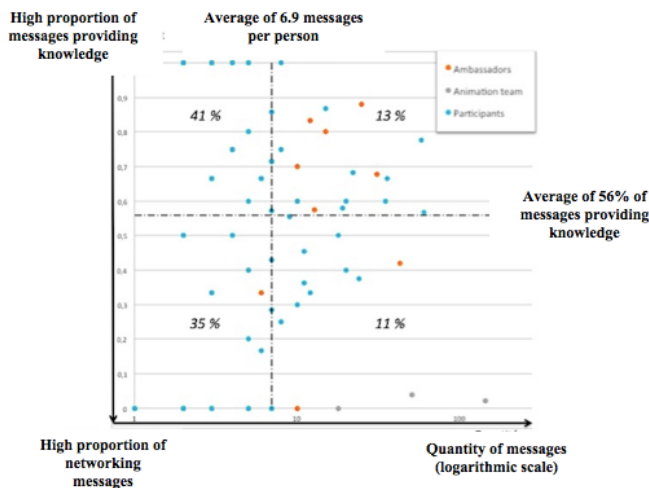
The experiment conducted by Technip can firstly be analysed as the creation of a temporary space for identifying and mobilising innovative profiles based in the company's various engineering entities (in 26 countries). The organisation of the challenge served to identify individuals with three distinctive roles: facilitators tasked with the overall facilitation of the challenge; ambassadors tasked with promoting the challenge among the teams and fostering active participation; participants. Out of the challenge's 1,075 members, 218 individuals were active (individuals are qualified as 'active' once they have posted at least one message), i.e. a 20% participation rate. These active individuals posted an average 8.4 messages, with a high standard deviation (25.8). The analysis of the messages posted by each role revealed that, out of the 1,826 messages posted during the challenge, 23.8% were posted by facilitators, 15.4% by ambassadors, and 60.8% by participants. It also transpired that 80% of the facilitators were actively involved with an average 108.8 messages per active facilitator, versus 52% for ambassadors (with an average 9.7 messages per active ambassador) and 19% for participants (with an average 5.6 messages).

An analysis of the nature of the messages posted during the knowledge sharing phase serves to better understand the

behaviour of the different roles. An exhaustive reading of the messages posted reveals that 46% of them are "socialisation" messages. By "socialisation" messages, we mean messages for greeting, introducing oneself, courtesy messages, not intended to submit new knowledge rather to establish or maintain relations. They also include messages that, while not providing any new knowledge, refer back to a previous message that did. The remaining 54% of the messages can be broken down as follows: 18% provide general knowledge (information on the existence of a technical solution, a patent, etc.); 28% propose new concepts that need to be further explored to validate their usefulness and feasibility; the remainder refer to existing projects (2% for internal company projects, 6% for external projects). This analysis of the nature of the posted messages reveals some interesting behaviours. The facilitators' participation was limited only to socialisation and information organisation tasks, in keeping with the rule which they set for themselves. 67% of the messages from other participants involved providing knowledge. This demonstrates that the exchanges during the challenge were a chance to share content that was dense and rich.

Crossing the number of messages posted per individual with the nature of these messages (messages that provide knowledge / messages that provide knowledge and socialisation messages) allows us to identify different types of behaviour concerning the individuals' use of the ESN. Figure 1 below plots the various participants in the challenge on two axes. The x-axis represents the number of messages posted per individual. The y-axis represents the proportion of messages that convey additional knowledge (as opposed to mere socialisation messages). A colour code identifies the different roles (facilitators in grey, ambassadors in orange, participants in blue). Based on the average number of messages per person (6.9) and the average proportion of messages that convey knowledge (56%), we can identify four main types of contributor. Individuals who only post a small number of messages with little content can be considered as *observers*; even if they participate in the challenges, their involvement is not very visible. They account for 35% of the challenge's active individuals. Individuals who post a small number of messages but with a high knowledge content are qualified as *one-off generators* (41%). Even if their involvement is limited, their contribution in terms of knowledge can prove vital. Individuals who post a large number of messages with a high knowledge input are qualified as *intensive generators* (13%). These individuals are the ones most involved in the challenge. They reveal themselves to be high-potential innovators for the organisation. Lastly are individuals who post a large number of messages, but with little knowledge input (11%). These individuals represent the challenge's socialisers, given their actions geared towards socialising and orienting exchanges towards messages posted by others (whether or not they are identified as such by the formal organisation).

Fig. 1. Positioning of individuals according to the nature and number of messages posted



We can thus identify four distinct “attitudes” (observer, one-off generator, intensive generator, and socialiser). Crossing these attitudes with the ambassador, instructor or participant roles proves to be instructive. While 100% of individuals with the facilitator role behave as socialisers, an analysis of the behaviour of the challenge’s ambassadors and participants reveals that 43% behave as intensive generators (which is to be expected given the selection made), and especially that 44% behave as one-off generators, and 10% as intensive generators. The challenge thus allowed to identify more than a hundred or so individuals, located throughout the world, who are able to make a strong, immediate contribution to thought processes concerning breakthrough innovation within the company. Approximately 20 of these hundred or so individuals can be immediately and intensively mobilised to make an important contribution of knowledge, in other words, more than the number of ambassadors initially identified.

The subjects exchanged by the participants were deemed relevant by 79% of the challenge’s actors. For 90% of the actors, the challenge served to learn about new subjects. 85% considered that these subjects were useful to the organisation’s economic and commercial activity, however 58% considered that they did not provide any useful form of learning for daily activity. This result is consistent with the breakthrough innovation theme. Having a space where individuals can think out of the box regarding Technip’s future in the next 30-40 years was particularly appreciated. The global dimension of the challenge helped to continuously stimulate the flow of discussions. For some, the challenge even became “addictive”. This aspect was catalysed by the fact that the actors were able to use their smartphones outside working hours. The questionnaire indicates that 50% of those who took part in the challenge spent between 30 and 60 minutes per week; 19% spent between 1 and 3 hours per week, and 8% spent more than 1 hour per day. Certain intensive generators got “caught up” in the exercise, forming the hard core that fuelled the underlying dynamics of the exchanges. All the same, the population involved remained very technical; participation by non-engineers or non-scientists proved somewhat complicated and often limited. Keeping abreast of the intense exchanges made it difficult for participants to temporarily “break off” due to the very large number of unread messages that would otherwise

build up, and the subsequent difficulty getting “back in”. Few people were formally assigned to take part in the challenge as part of their job, which meant that they were also busy with their other everyday activities (other projects, training, leave, etc.).

B. Identification of the “silent readers” half

The responses to the questionnaire indicate that 40% of respondents did not post any messages, but read the messages exchanged by the other participants. Beyond the importance and positive benefits for the company of these people keeping informed of knowledge exchange, the challenge’s second concept generation phase will draw attention to their tangible contribution. During this phase, 10 concepts were selected, around which teams were established (comprising 4.6 members on average, with a standard deviation of 1.4). In all, 33 individuals were involved in the 10 teams. Note that some employees belonged to more than one team, while 24 of them belonged to only one team. The teams were composed of 76% participants and 24% ambassadors. In terms of the behaviour profiles explained above, 50% of the team members were former “observers”, while 20% of them were not even involved in the first phase of the challenge. Table 1 indicates the origin of the members in the various teams.

TABLE I. ORIGIN OF THE TEAM MEMBERS IN PHASE 2 OF THE CHALLENGE IN ACCORDANCE WITH THEIR BEHAVIOUR IN PHASE 1

Pure observer	Observer	One-off generator	Intensive generator	Socialiser
20%	30%	9%	9%	33%

The transparency of the operation via the ESN and the facilitation principles made it possible to observe – from a distance – a large number of individuals. These individuals represented “reserve” resources when it came to contributing to the selected concepts.

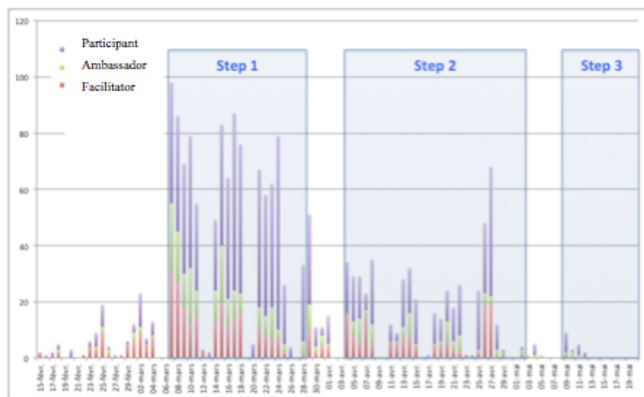
Compared with innovation processes organised physically (work by “innovation entities”, creativity seminars, brainstorming sessions, etc.), this possibility, where anyone can follow the exchanges, makes a big difference. In some respects, ESN allow innovation processes to be more “transparent” and provide a “shop window” visible by all employees, without necessarily having to organise any ad hoc form of “communication”. Consequently, even if, as we shall see later on, the network partly failed to actively include actors beyond a limited circle of “enthusiasts” keen on innovation, the identification of this “silent half” (albeit an attentive silent half) shows that social networks lend themselves to all kinds of “limited inclusion” by employees. For the company, this can prove to be beneficial for the purpose of bringing about a “change in mentalities” and raising employee awareness about innovation.

C. Why intensive steering was necessary during the conduct of the challenge

The follow-up interviews conducted by the challenge facilitators served to highlight the steering needs in the different phases of the process.

Phase 1 was by far the one that prompted the biggest number of contributions by the facilitators, as shown in figure 2 below:

Fig. 2. Histogram of messages posted by day and by role



Apart from the novelty factor and the curiosity aroused by the challenge, it appeared that the high level of participation during this phase was due to a “sandbox” effect, described as “liberating” and to which employees came with diverse motivations: to get a message across, to use the opportunity to spread knowledge, to prove themselves, etc. Given this “outpouring” characteristic, discussions during this period were fairly abundant and disordered. The period thus engendered a substantial amount of work in terms of steering the discussion. Via the interviews, we identified three main reasons behind the necessity and intensity of this steering task.

Firstly, it involved “adjusting the flow” of the messages in terms of volume, where a sustained conversation pace needed to be maintained to keep participants captivated and to incite them to come back regularly, without “drowning” them in an excessive and disorderly flood of discussion, which could have a discouraging effect.

The second issue concerned the degree of “controlled freedom” granted to the participants. For the facilitators, this meant repeated interventions to filter some of the content posted in order to regularly orient it, but without overly restricting it.

Qualitatively speaking, the third parameter to manage was the level of technicality. Within a firm geared towards technical expertise, it was perhaps hardly surprising to observe a natural inclination towards highly technical discussions. However, too much technical expertise could have worked against the challenge's universal ambition (where certain non-technical actors might feel excluded by esoteric discussions) and, just as importantly, against the imperative for innovation, since confining the company's established expertise to “comfort zones” could inhibit the originality of the proposals.

The discussion's pace, leeway and technicality thus formed the three parameters which the facilitators had to juggle to ensure that the knowledge sharing phase achieved its twofold objective: prompting a high level of participation, and stimulating original proposals. As a result, the three-week facilitation task turned out to be particularly time-consuming.

During the second phase of the challenge, three main steering issues emerged.

The first concerned balancing the tension between the furthering of the discussions, in terms of both their technicality and their breakthrough level in relation to the Technip universe, and the universal ambition of the challenge. Since the challenge is open to all employees, those who are insufficiently qualified to follow the discussions risk “switching off”. Even if, according to the facilitators, the possibility of combining public dialogue on the main thread and private dialogue via other messaging tools helps to alleviate this tension (but was highly time-consuming), it patently goes some way towards explaining the drop in overall activity compared with the first phase. The second phase thus gradually honed down the participation to a “hard core” of participants (50 from phase 1, despite the arrival of 23 newcomers).

The second issue that emerged was the difficulty impelling a veritable “collaborative” and “open” spirit in the development of concepts. Indeed, this phase was deliberately organised in the form of a competition, with the creation of virtual start-ups. This gamification paid off, since the participants genuinely got “caught up” in the exercise, which helped to reach initial expectations in terms of the number and quality of the concepts. However, this competitive aspect seemed to ultimately overshadow the collaborative aspect, insofar as very few players outside the teams would freely respond to the proposals of others.

This last point ties in with the possible extension of the challenge beyond the social network. In fact, the established teams mainly worked on devising concepts via offline interactions (email, telephone, physical meetings, etc.). This signified the success of the challenge, whose scope went beyond the confines of the social network platform. However, it also posed problems for the facilitation team since, in so doing, whole swathes of activity escaped their control and management. This represents a major difference with physical innovation seminars, whose format provides the potential for thorough control, and adherence to the defined method.

D. Cautious expectations: further actions, time, managerial involvement

Generally speaking, the participants’ assessment of the challenge reveals many grounds for satisfaction but exposes certain limits whether in terms of the actual dynamics of the challenge or the subsequent actions to this kind of initiative.

On the whole, the challenge was highly esteemed by the participants. In particular, it provided a chance to “exchange ideas with new colleagues” for 64% of respondents. This unifying and socialising attribute represents a first motive for satisfaction. The questionnaire's open comments indicate that

the proposals resulting from the challenge are considered “interesting”, “rich” and with “value potential”, even if some see them as being too concrete or, on the contrary, too unrealistic. The participants particularly appreciated the “fun” character of the challenge. The sharing of ideas and the topics covered were also a source of satisfaction. Points that could be improved firstly concern the time available to take part in the challenge, its actual duration (too long for some, too short for others) and the excessively narrow range of topics covered. The Yammer interface was hardly considered as user-friendly by the participants, even if this was not cited as a major reason for not participating, as opposed to the time available, and management’s involvement.

We received a surprisingly large number of questionnaires from respondents who did not actively participate in the challenge. Out of 319 respondents, 68 had not signed up for the challenge and 117 did not actively participate in it. This access to the opinions of non-participants helps understanding the limits of such an experiment. Firstly, it reveals that the “insufficient time” factor was, by far (59%), the biggest obstacle to participation, versus 17% for “lack of interest”, for example, or 14% who considered the subject too complicated. Among the causes for non- or low participation in phases 1 and 2, the “insufficient time” factor repeatedly came to the fore. This “time” or “workload” obstacle must be considered in the light of a second important reason for non-participation or, more generally, dissatisfaction concerning the challenge, i.e. managerial involvement (or lack of) and, more broadly, the incentives given to employees. The questionnaire and the interviews lead to a paradoxical finding: among the intensive participants, few considered incentives by their superiors as a major reason for their participation, at any rate relative to other reasons (such as enthusiasm for innovation, curiosity, etc.). On the other side of the fence, the lack of managerial support (whether through informal encouragement to take part, or even specific measures to encourage employees to take part, e.g. formal recognition of the challenge in the employees’ objectives) represented a barrier to participation for those who remained “on the fringe” of the challenge. In a nutshell: participation in the challenge owes little to managerial involvement, while non-participation owes a lot to the lack of managerial involvement! This paradox points to an undisputed fact: the company’s top management generally did very little (with the exception of the appointed ambassadors) to promote the challenge and ensure its smooth operation; it did not therefore facilitate the exercise as it could have. We can thus assert that the challenge’s active participants were involved *in spite of* their hierarchy (with exceptions, since 19 participants claimed that support from their superiors was an important influencing factor for their participation).

It thus appears that the “contextual ambidexterity” achieved was essentially within a perimeter limited to a hard core of innovation enthusiasts who had at last found a playing field for themselves. We must recognise the fact that the challenge failed to extend the scope of ambidexterity beyond this hard core (which, incidentally, grew narrower as the challenge progressed, as illustrated by the figures on the participation trend over time). This experiment does not therefore support the idea of a possible “universal” contextual ambidexterity, at

least not in the absence of any effort by management to actively create a conducive environment, at the very least through a “tolerant” attitude, if not a “supportive” one. Merely implementing an ad hoc tool thus appears to be insufficient if not followed up by some form of involvement by management. Once again, this did not stop a wide audience from “silently” following the discussions of the challenge.

Lastly, the post-challenge interviews raised an important point concerning the expectations expressed by the hard core of potential innovators which the challenge successfully identified and mobilised, namely, that in order to avoid these expectations from being thwarted, this experiment concerning Technip’s ability to embrace breakthrough subjects must not merely be a “one shot”. Otherwise, it risks leading to frustration and reinforcing a certain sentiment that the initiative was merely a parenthesis in the company’s “business as usual”.

V. DISCUSSION

A. Towards an “event-driven distributed exploration” via the ESN

For this experiment, Technip opted for an “event-driven” use of its ESN in the form of a breakthrough innovation challenge. This approach seems to have had a number of virtues. Firstly, it brought about a substantial increase in the ESN’s user population. And yet, it has been established that adopting this kind of tool requires a certain lapse of time before leading to identified, everyday usages [15] [20]. In this respect, the event attained its objective.

Concerning the actual usages, the analysis of the data collected led to a twofold interpretation. Firstly, contributions with a high knowledge input were made by a limited group of thirty or so individuals, i.e. the challenge’s “hard core”. This observation is in keeping with observations in physical communities, such as communities of practices, or in virtual spaces. The individuals in this “hard core” illustrate the possibility, for certain highly motivated employees, of using the ESN in this context to attain a degree of contextual ambidexterity. In this respect, the social network appears as a medium that provides easy access to an innovation space.

However, this observation must not overshadow certain effects that are key to understanding exploration processes in universes highly restricted by the primacy of exploitation. Exchanges from multiple locations across different continents and different disciplines took place, leading, in some cases, to proposals developed by experts from disparate divisions that do not usually work together. Backed by the company’s top management, the visibility afforded by this challenge is one of the primary explanations, which is consistent with one of the characteristics specific to ESN. Indeed, these networks provide employees with a potentially direct form of access to managers given the egalitarian, horizontal character of the messages [10] [21]. The arena available to employees with innovative profiles also allows them, via this visibility, to seek some form of legitimisation of their ideas and their work. Besides the actual vote, the largely open nature of the challenge gave the work produced a large resonance with the audience of silent reader

participants, without any intermediation from the Communication department.

In a universe highly oriented towards exploitation, one significant limit to contextual ambidexterity is that many participants asserted that they were unable to make any significant contribution due to a lack of dedicated time. Despite the acknowledged facilitation effort, creating the conditions for contextual ambidexterity among this category of employees was not possible. To effectively create and consolidate conditions conducive to contextual ambidexterity, the use of a “device” [3] cannot therefore be limited to merely implementing a new communication tool, no matter how facilitating it might be. In our case, the steering aspect was extensively prepared upstream of the exploration. The challenge and its assessment revealed that the practices and contribution conditions for exploration with a broad participation were limited by the conditions in which operational activities are supervised. This tends to confirm that the opening of a “virtual” space, organised according to its own set of logic, remains largely dependent on “real-world” constraints, in particular hierarchical relations. In future, research on the use of ESN must thus integrate the conditions in which these networks can be accessed.

B. “Controlled” use of the enterprise social network: a new possibility of action for breakthrough innovation?

Despite all the limits raised, ESN, given their characteristics, lift the lid on the possibility of implementing innovation processes that are simultaneously distributed both geographically and functionally, while being strictly controlled and coordinated. While this new “range of possibilities” is only very partially seen here given the experimental nature of the challenge, it is likely that the possibilities for communication and coordination provided by internal social networks will overcome the opposition – commonplace in innovation management – between processes that are controlled but “concentrated” or “co-located”, and processes that are distributed, but marginally controlled (if at all).

TABLE II. INNOVATION PROCESSES ACCORDING TO THE DISTRIBUTION OF RESOURCES AND THE MANAGEMENT OF THE INNOVATION PROCESS

Distributed resources	Communities of practice, crowdsourcing, intrapreneurship, “free” challenges, etc.	Challenges “steered” via internal social networks
Co-located resources		Exploration projects, structured exploration methodologies
	Marginally controlled innovation processes	Highly controlled innovation processes

New possibilities for consolidating the merits of distributed processes (highly disparate profiles and knowledge, capacity to federate and decompartmentalise, considerable leeway granted to participants, etc.) with those of steered processes (applying structured methods, high level of involvement by participants, increased ability to absorb knowledge, etc.) are therefore available. But at what cost? To be sure, the experiment wrong-footed the literature on the ties between innovation and

“virtualisation” [24], which suggests that digital tools can be used to drastically reduce communication and coordination costs. This is also one of the premises of contextual ambidexterity which, by decentralising exploration responsibilities as extensively as possible, can seemingly save costs associated with the running of permanent entities. In reality, the challenge ran counter to these claims, proving to be relatively “costly” in terms of the need for intensive preparation and facilitation. This led to a very substantial workload for the facilitators, despite the supposed “relay” role of the ambassadors. This point demonstrates that “free” contextual ambidexterity does not seem possible at this stage since in reality, certain resources must be fully assigned to the steering of the exploration in order for each and everyone to be “ambidextrous”. However, we can qualify our deduction by the pioneering and experimental nature of the challenge organised. A more “routinised” facilitation of exploration activities via an ESN could limit the costs associated with this controlled ambidexterity by focusing on facilitators’ learning effects on the one hand, and on a gradual transformation of mentalities towards innovation – which would progressively limit the efforts required to incite employees to participate – on the other. However, this would infer stable management resources with highly specific profiles, proficient both in social networks and innovation steering methods, and with a minimum level of technical skill in the company’s line of business. It would therefore also infer the deployment of a new kind of “exploration entity”, whose purpose would be to facilitate participation on exploration activities by as many employees as possible via social networks. In some respects, this tends to show that “pure” contextual ambidexterity is still hardly feasible, but that hybrid forms of structural and contextual ambidexterity are potentially within reach.

ACKNOWLEDGMENT

We especially thank Jean-François Duroch, Open Innovation Director of TechnipFMC who made this research possible.

REFERENCES

- [1] Abernathy, W. J. (1978). *The Productivity Dilemma: Roadblock to Innovation in the Automobile Industry*. Baltimore: Johns Hopkins University Press.
- [2] Abrahamson, E. (1996). Management fashion. *Academy of Management Review*, 21(1), 254-285.
- [3] Aggeri, F., & Labatut, J. (2010). La gestion au prisme de ses instruments. Une analyse généalogique des approches théoriques fondées sur les instruments de gestion. *Finance Contrôle Stratégie*, 13(3), 5-37.
- [4] Arzumanyan, L., & Mayrhofer, U. (2016). L’adoption des outils numériques dans les communautés de pratique-Le cas du Groupe SEB. *Revue française de gestion*, 42(254), 147-162.
- [5] Ben Mahmoud-Jouini, S. (2016). Le numérique au service des entités dédiées à l’innovation de rupture. *Revue française de gestion*(1), 65-87.
- [6] Brown, J. S., & Duguid, P. (1991). Organizational learning and communities of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2, 40-58.
- [7] Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management science*, 29(12), 1349-1364.
- [8] Chesbrough, H. W. (2006). *Open innovation: The new imperative for creating and profiting from technology*: Harvard Business Press.

- [9] Ellison, N. B., Gibbs, J. L., & Weber, M. S. (2015). The use of enterprise social network sites for knowledge sharing in distributed organizations: The role of organizational affordances. *American Behavioral Scientist*, 59(1), 103-123.
- [10] Faraj, S., Jarvenpaa, S. L., & Majchrzak, A. (2011). Knowledge collaboration in online communities. *Organization Science*, 22(5), 1224-1239.
- [11] Gibson, C. B., & Birkinshaw, J. (2004). The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity. *Academy of Management Journal*, 47(2), 209-226.
- [12] Huberman, A. M., Miles, M. B., & De Backer, C. (1991). *Analyse des données qualitatives: recueil de nouvelles méthodes*: De Boeck Université Bruxelles.
- [13] Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*: Cambridge university press.
- [14] Lenfle, S. (2008). Exploration and project management. *International Journal of Project Management*, 26(5), 469-478.
- [15] Li, C. (2015). Why no one uses the corporate social network. *Harvard Business Review*, 87(1111), 1-9.
- [16] March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1), 71-87.
- [17] Midler, C. (2012). *L'auto qui n'existait pas: management des projets et transformation de l'entreprise*: Dunod.
- [18] O'Reilly, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *The Academy of Management Perspectives*, 27(4), 324-338.
- [19] Pinchot, G. (1985). *Intropreneuring: Why You Don't Have to Leave the Corporation to Become an Entrepreneur*: Harper & Row.
- [20] Riemer, K., Overfeld, P., Scifleet, P., & Richter, A. (2012). Eliciting the anatomy of technology appropriation processes: a case study in enterprise social media.
- [21] Treem, J. W., & Leonardi, P. M. (2012). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Communication yearbook*, 36, 143-189.
- [22] Yin, R. (2013). *Case Study Research: Design and Methods*: SAGE Publications.
- [23] Yin, R. K. (2004). *The case study anthology*: Sage.
- [24] Yoo, Y., Boland Jr, R. J., Lyytinen, L., & Majchrzak, A. (2012). Organizing for innovation in the digitized world. *Organization Science*, 23(5), 1398-1408.