

Enterprise Social Networks for Knowledge Sharing: Lessons from a Medium-Sized Company

Enrico Scarso and Ettore Bolisani

Department of Management and Engineering, University of Padova (Italy), and International Association for Knowledge Management (IAKM)

enrico.scarso@unipd.it

ettore.bolisani@unipd.it

10.34190/EJKM.18.01.002

Abstract: The use of Enterprise Social Networks (ESNs) as knowledge management tools has been widely investigated in case of big organizations, while there is little knowledge about advantages and possible implementation problems in small and medium-sized enterprises. To fill this gap, the paper analyses the case of adoption and use of the Yammer platform by a medium-sized Italian company. Yammer is an ESN service platform owned by Microsoft which includes several Web 2.0 features and whose interface resembles a typical public social network like Facebook. The research applied a quantitative approach: a questionnaire was submitted to all users of the ESN platform in the company between January and February 2017, with a response rate of 41%. The study contributes to the literature on social media as KM tools, by providing insights into the possible barriers that can undermine the success of ESN platforms as KM tools in the context of medium-sized enterprises. Specifically, it highlights that two factors (intrinsically connected to the size of the company) are particularly crucial: the limited number of users, and a sort of naïve (“me-too”) implementation strategy. An important lesson is that the success of ESNs in medium-sized enterprise is influenced by personal (individual) and organizational factors, even more than technical ones. Especially, the need to reach a minimum critical mass of users can be a challenge. A limitation of the study is that it investigated only one company operating in a sector with specific knowledge needs and capabilities.

Keywords: Enterprise Social Networks; Yammer; Knowledge Management; Survey; SME; Italy

1. Introduction

Enterprise Social Networks (ESNs) are social network systems implemented inside the boundary of an organization and are accessible only by its members. Companies are increasingly adopting these systems, with the purpose to enhance their performance, especially in the context of knowledge management (KM) initiatives (Ellison, Gibbs, and Weber, 2015; Harrysson, Schoder and Tavakoli, 2016; Qi and Chau, 2018). Indeed, as underlined by several scholars, ESNs can improve the KM capabilities of a company, in terms of better communications and collaborations, enhanced knowledge location and transfer, increased innovativeness, and faster integration of new hires (Mäntymäki and Riemer, 2016; Soto-Acosta and Cegarra-Navarro, 2016; Lal, 2017; Weber and Shi, 2017). In this regard, Gardner (2013) affirms that “building knowledge” is at the core of these technologies, while Kane (2017) and Qi and Chau (2018) argue that KM is where social tools are having the biggest impact. Particularly, ESN platforms are deemed to be very effective in supporting internal knowledge sharing (Ahmed et al., 2018; Högberg, 2018). In short, social media and KM can be considered as a “perfect couple” (Helms, Cranefield and van Reijssen, 2017).

It is generally assumed that ESNs better fit big and multinational enterprises, since they improve communication and collaboration between geographically dispersed units (Ellison, Gibbs and Weber, 2015; Oettl et al., 2018). Indeed, until now, the empirical research has focused on large and global corporations (Leonardi and Vaast, 2017), while there is little knowledge about their use in small and medium-sized companies (He et al., 2017; Odoom, Anning-Dorson and Acheampong, 2017). However, it cannot be taken for granted that ESN use in smaller companies is a mere scaled-down reproduction of large companies’ initiatives. Therefore, there is the need to clarify the specific features and implementation problems that characterise the case of smaller firms.

In order to contribute to fill this gap, the paper analyses the introduction and use of an ESN platform by a medium-sized Italian company that has adopted it to improve internal communication and knowledge sharing processes. The case was investigated by means of a survey aimed to gather information on different issues, all related to the utilization of the ESN. Specifically, the study examines the factors that have influenced its usage

for knowledge sharing, by collecting the user perceptions. An additional value of the paper is that, unlike what usually happens in the literature (Trier, Fung and Hansen, 2017), the investigated case concerns an unsuccessful implementation. From the researcher's point of view, a situation of substantial failure is very useful, since it allows to better identify and analyse the critical factors that usually do not emerge in successful cases.

2. Background: factors affecting knowledge sharing via ESNs

In the last years, ESNs have been receiving growing attention in the literature (Wehner, Ritter and Leist, 2017; Ahmed et al., 2019), but this is still an emerging research field. Specifically, we have still limited knowledge about their real use in organizations (Bulgurcu, Van Osch and Kane, 2018).

The definition itself of ESN is controversial. However, there are some points to which scholars tend to converge (Leonardi, Huysman and Steinfield, 2013; Hacker, 2017). Generally speaking, ESNs are web-based platforms that are implemented inside an organization and allow workers to (1) communicate messages with specific co-workers or broadcast messages to everyone in the organization; (2) explicitly indicate or implicitly reveal particular co-workers as communication partners; (3) post, edit, sort text and files linked to themselves or others; (4) view the messages, connections, text, and files communicated, posted, edited and sorted by anyone else in the organization at any time of their choosing; (5) react to contributions of others; (6) present information about themselves, and (7) access the profile information and contributions created by others. In short, it is widely recognized that ESNs: a) have a nature of "internal communication environment", i.e. their main goal is to improve communication capabilities of employees; b) have a "social" character, namely, they are intended to improve bilateral or collective interactions, and to facilitate active participation and informal knowledge exchanges across hierarchical barriers; and c) substantially replicate the popular communication models of public social media platforms (i.e. Facebook, Instagram, etc.). In relation to the last point, ESNs usually offer a variety of functions (such as wikis, social analytics, communities, blogs, microblogs, file sharing and more – Hacker, 2017) that are often connected to one another. Consequently, they are a "constellation" of technologies that enable creating, exchanging and sharing user-generated content (Kaplan and Haenlein, 2010). A company can develop its own ESN system, but often firms buy the services offered by commercial providers.

The literature has often underlined that ESNs can bring substantial benefits to knowledge-related processes (Bechina, Arntzen and Ribiere, 2012; Levy, 2013; Helms, Cranefield and van Reijssen, 2017; Calero Valdez et al., 2018; Sankaran et al., 2018). They are deemed to promote new ways of exchanging knowledge by employees of an organization, thus increasing its competitiveness (Razmerita, Kirchner and Nielsen, 2017). ESNs can transform knowledge sharing from an intermittent and occasional process into a systematic online conversation, which can produce unexpected interpretations and new uses of knowledge content (Majchrzak et al., 2013). Furthermore, these technologies are generally less complex, more flexible, and more affordable than the technologies of earlier generations, used to store knowledge and facilitate its sharing (like, for example, big centralized databases and automated search engines). The use of these new technologies helps companies to overcome the challenges experienced by the previous knowledge sharing tools.

A critical point, however, is that knowledge sharing by means of ESNs is not effective if there is no active use and contribution by individual employees (Guinan, Parise and Rollag, 2014; Mäntymäki and Riemer, 2016). This cannot be taken for granted, as is testified by the several cases of failure that denote their implementation (Chin, Evans and Choo, 2015; Bolisani and Garcia-Perez, 2017; Laumer et al., 2017; Wehner, Ritter and Leist, 2017; Oettl et al., 2018). It is therefore essential to collect evidence about how ESNs are actually employed as a knowledge sharing tool (Charki et al., 2018) and, especially, about the factors that can influence the active use, acceptance, and participation by potential users. Empirical investigations are especially insufficient in the case of small and medium-sized enterprises.

The factors affecting the use of an information system or technology can be analysed by means of the so-called technology acceptance models. These models assume that the active use of a system requires that it is "accepted" by the user, otherwise its employment will remain ineffective for the organization that promotes it. Various forms of technology acceptance models have been developed, which analyse the issue from different perspectives (Ngai, Tao and Moon, 2015; Lal, 2016; Oettl et al., 2018), as for example: (1) the "task-technology fit" (TTF) model, where acceptance depends on how a technology fits the characteristics of the task which is

expected to support; (2) the “technology acceptance model” (TAM) and its advancements, that focus on the usefulness of a system and its perceived ease-of-use, and (3) the “unified theory of acceptance and use of technology” (UTAUT) that centres on the expected future impact of a system on a person’s performance or on the efforts that the system usage will require.

Choosing just one of these interpretative models is hard. In principle, this is a conceptually robust and parsimonious approach, but since each model focuses predominantly on few specific aspects, the overall picture may be overlooked, which undermines its practical usefulness (Stocker and Muller, 2016). Indeed, many scholars who, in the recent literature, examined ESN usage, considered a set of factors that derive from different conceptual perspectives (Stei, Sprenger and Rossmann, 2016). A study of Nielsen and Razmerita (2014) – who recall a classification proposed by Lin (2007) - distinguishes between three different classes of factors influencing effective knowledge sharing by means of social media technologies, as follows: individual factors, organizational factors, and technological factors. In a later paper (Razmerita, Kirchner and Nielsen, 2016), the authors provide further specifications by distinguishing between drivers and barriers, and it is argued that technological factors can act only as barriers. Other scholars (Chin, Evans, and Choo, 2015; Hacker, Florian and Bodendorf, 2018), who underline the intrinsically social nature of ESNs, add another class of factors: the social one. Lal (2016) considers the achievement of a critical mass of users as an important social factor that can boost the usage of an ESN platform. Additional factors have also been taken into account (Chin, Choo and Evans, 2015; Bolisani and Scarso, 2016), such as: process/operational, economic, and cultural factors.

To sum up, the analysis of the literature reveals that the use of an ESN platform as a tool for sharing knowledge is a complex issue, whose understanding implies the analysis of a plurality of elements. Therefore, a key point is that further empirical research is needed to confirm what factors really play a substantial role in the effective use and adoption.

In addition, the majority of existing studies analyse the experience of big companies. Conversely, little evidence is available about the factors affecting the effective usage of ESNs in small and medium sized enterprises. It cannot be assumed that small companies are the simple transposition of large organizations into a smaller scale and, indeed, their approaches and methods of managing and implementing knowledge sharing processes can be different from those of their larger counterparts (Edvardsson and Durst, 2013). Consequently, it is necessary to collect specific evidence about the factors affecting the adoption of ESN platforms by small and medium sized firms.

3. Research goals and method

Based on the literature analysis illustrated in the previous section, this study addressed these two research questions:

RQ1: Which factors do primarily affect the adoption and effective use of an ESN platform by a medium-sized company?

RQ2: Are these factors similar (or not) to those that are deemed to be important in the case of large companies?

This is a descriptive study, primarily concerned with a “what” question (Jackson, 2009), as is RQ1. Specifically, it is a “quantitative case study” (Korzilius, 2009) approach, more precisely, a quantitative survey applied to the context of a single case. The unit of analysis was the ESN service (Yammer) introduced in the case company.

The research method consisted of a survey submitted to all internal users of the ESN platform with the aim of gathering their opinions and perceptions about several aspects related to its employment. User surveys are commonly adopted to obtain quantitative feedback on usefulness and helpfulness of a social tool. The users’ perceptions are particularly interesting for researchers (Sarka and Ipsen, 2017; Wehner, Ritter and Leist, 2017) because they reflect their actual behaviour in the system (Stocker and Müller, 2016). Perceptions are crucial to understand the vitality of an ESN platform (Mäntymäki and Riemer, 2016; Stei and Rossman, 2017) and can give a good idea about its effective usefulness and about the factors that affect its success (Kirchner and Razmerita, 2019).

The survey used a questionnaire developed with the support of the ESN manager in the company. It was tested and then administered by email, together with a document where the aims of the survey were explained. Questions were formulated by considering the three groups of factors that are more commonly used by scholars to investigate the usage of ESNs, i.e. individual, technological and organizational factors. Figure 1 reports the main factors that were addressed by the questions and also shows the tables of section 4 where the answers concerning each factor are summarized. In order to ensure a sufficiently high return rate, the questionnaire was restricted to a manageable number of questions (15), easily understandable and quickly to respond. Anonymity was also guaranteed.

Potential occurrence of biases (which is, to some extent, unavoidable) was partially faced by means of some countermeasures, i.e.: emphasising that the survey was anonymous and that frank responses were welcome; checking the questionnaire with the company key informant so that to avoid potential mistakes in the way questions were proposed; using neutral sentences to avoid any influence in possible responses; allowing multiple responses for questions that imply a personal judgement of relevant factors; mixing “positive” and “negative” questions, so that no particular emphasis was put on one or another.

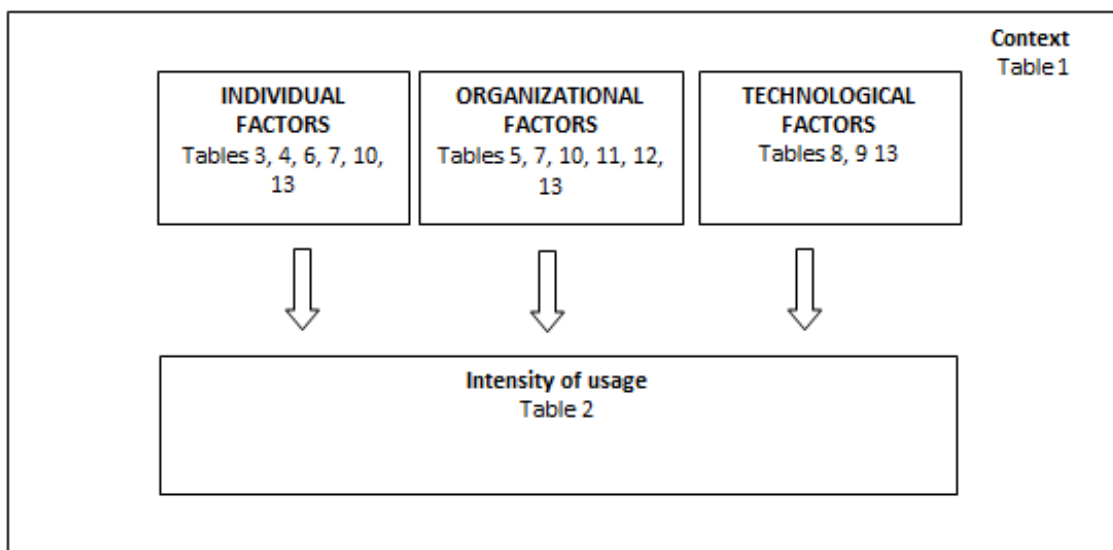


Figure 1: Factors and contextual elements examined and reported in the study

A “measure” of the intensity of use of the ESN was provided by the frequency of use of Yammer. Two more questions regarded knowledge needs and KM processes of respondents, with the purpose to understand the cognitive aspects that may help to explain their behaviour with the system. These questions did not provide clear indications, and they are omitted in the paper due to lack of space. Table A1 in the Appendix presents the list of the various aspects addressed by the different questions, linking them to the literature.

The survey was conducted between January and February 2017. Forty-one employees responded, out of about one hundred total ESN users: this is a good rate, given not only the size of the company but also its intrinsically manufacturing nature. Figure 2 shows the main steps of the investigation.

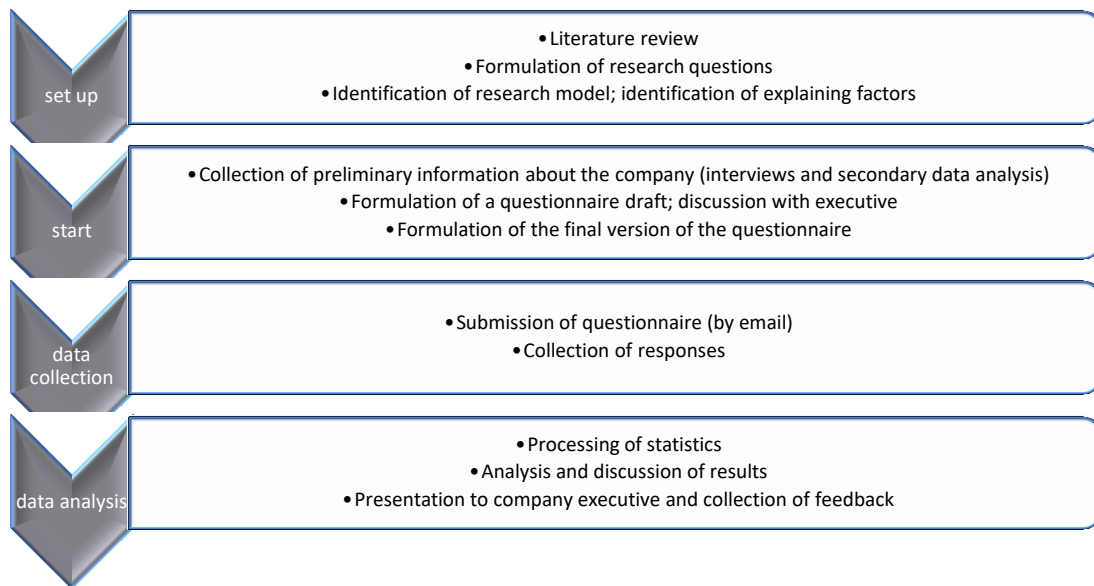


Figure 2: Steps of the investigation

4. Findings

4.1 Company background

The company (whose name is disguised for confidentiality reasons) specializes in drug packaging and related products. Originally located in the city of Vicenza (North-Eastern Italy), it has five production plants (three in Italy and two abroad), and about 500 employees. Founded more than seventy years ago, it is still a “family business”: today, the third generation of entrepreneurs is taking over the company. It is a production-oriented organization, with more than half employees who work in production. The company devotes special attention to quality, because its clients (namely, pharmaceutical companies) require extremely high-quality levels.

The Communication and Human Resources director proposed to introduce and promote the use of an ESN inside the company, with the goal of improving the internal communication processes that she considered ineffective. Generally speaking, for a company, there are two main options to implement an ESN. The first option is to develop, install, and manage the software entirely in-house, which implies, for the company, to invest in resources and technical equipment: this can be hard especially for small companies, which may not have strong competencies in information systems management. The second option is to buy external services, which are generally provided on cloud: for the company, it is generally sufficient to have an Internet connection for all the connected employees and to make some basic management (for example, assigning access credentials or supervising the usage). External services may be costly, but there are also some free (or cheap) solutions.

The market for business ESN platforms has grown steadily in the last years. A popular service is Yammer. Yammer is a service platform, now owned by Microsoft, with more than 500,000 clients in 2016 (Ungureanu, 2016). In Yammer, a client company can create and activate its private social network. New users join easily by signing in with their corporate email address. Yammer’s features include built-in facilities (like e.g. a private chatting system and a shared workspace for files and multimedia content), but also the possibility to install third-party applications. Its web interface resembles Twitter or Facebook, and it is based on the “follower-principle”: users can choose the people whose conversations they like to follow. Furthermore, Yammer provides a group feature to address the needs of members that collaborate on a specific topic or project. Groups can be either public or private. Participants can post messages and replies that are shown in chronological order.

Yammer was chosen by the company because it was simple to use, and a free version was available. All this made this option particularly suitable for a small company. The configuration of the internal network was easily made by the company’s IT department.

Although Yammer was very innovative for the company, neither special training nor promotional activities were performed with the potential users. It was assumed that workers were already accustomed to public social networks (Facebook *in primis*) in their private life. Some guidelines on Yammer use were written and distributed, but with no specific rule, restriction, or obligation: anyone could create a private group, invite anyone else to participate, and start a conversation about any topic. The ESN was targeted to office staff, the only people having a computer in the company. When a person created a group, this was shown in the homepage. A person might ask to enter, and the creator, who also administered the group, could decide whether to accept or not him/her. At the time of the survey, there were nine Yammer groups (Production Quality, Technical, Pre-print, Lean, Customer Service, Academy, Commercial, IT, Entire Company) with a total of 100 members: consequently, groups had a small size on average.

In the first two years, much of the initiative has been left to the single individuals, and the usage of Yammer has never been monitored. No person was really in charge of the system, and even the promoter (the real “champion”) was so engaged in her own business that she had no time to devote constant attention to the platform. In substance, the company adopted what the literature calls “provide and pray” approach (Guinan, Parise and Rollag, 2014).

4.2 Survey

As mentioned, 41 employees of various departments and with different seniority filled out the questionnaire (Table 1). Production and commercial departments (the largest ones) were the most represented; general services and marketing departments had only one participant, but these offices have a very small size. Around 60% of respondents are of a high seniority level (having been employed in the company from more than 15 years).

Table 1: Sample composition

Company departments	Seniority (years)				TOTAL
	0 - 5	5 - 10	10 - 15	> 15	
Production	1	1	0	9	11
Administration	2	0	0	2	4
Commercial	1	2	3	5	11
Marketing	0	0	0	1	1
General services	0	0	0	1	1
IT / Accounting	0	2	1	0	3
Quality / Lean	2	1	1	6	10
TOTAL	6	6	5	24	41

Most of the questions required the respondents to provide multiple answers, while a few questions asked a score ranging between 1 and 7 (Likert scale): in this case, the tables report the average scores. Due to the small number of the respective respondents, the answers of employees of marketing, general services and IT departments have been grouped together (label “others”).

More than two years after its introduction, the frequency of Yammer use was very low, which attested its unsuccess: as indicated by Table 2, 63% of respondents used it less than once a week. So, the survey allowed to investigate the factors that can explain its insufficient use and, generally, its perceived uselessness.

Table 2: Frequency of use of Yammer

How often do you use Yammer?	Production	Admin.	Commercial	Quality	Others	TOTAL
Many times, a day	0	0	0	0	0	0
Once a day	2	2	1	1	0	6
Many times, a week	0	0	1	0	1	2
Once a week	3	0	2	2	0	7
Less	6	2	7	7	4	26

A first important factor that may explain this failure results from the analysis of Table 3: the *connection of the system with the actual business activities and working tasks*. Respondents indicated that Yammer was used mainly to collect and exchange general information, and much less for solving problems and managing collaborative activities. Clearly, this limited its usefulness, and, consequently, led to a lower utilization. This is in line with the findings of Charki et al. (2018), i.e. that using an ESN to discuss open and general topics that are not systematically linked to everyday job-related activities can blur the employees’ understanding of the platform’s usefulness.

Table 3: Work-related use (max 3 responses; 1 n.a.)

You use Yammer especially for:	Responses	%
Having updated news	29	70.7
Exchanging news (not only work-related)	17	41.5
Work discussions	16	39.0
Generating ideas	5	12.2
Solving problems	4	9.8
Managing collaborative tasks	4	9.8

A confirmation that Yammer was not perceived as a working tool is also found in Table 4. Answers underline that it is regarded as a tool for exchanging information in general about the organization, rather than about the specific work activity of a person (Table 4).

Table 4: Purposes to use Yammer (max 2 responses)

In your opinion, why should a colleague use Yammer?	Responses	%
Provide information relevant for the business	29	70.7
Be informed about the organization	27	65.8
Find useful information for his/her work	11	26.8
Inform colleagues about his/her work	4	9.8
Receive / write emails	2	4.9
Avoid attending meeting	1	2.4

Active participation of a sufficiently large group of users is deemed to be another factor that boosts the effective use of the system. In the investigated case, instead, users were generally (78%) passive, and mostly inclined to follow conversations promoted by others (Table 5). It is worth noting that active users have stated that they do so to promote the exchange of useful information and to help/motivate colleagues, and not to get rewards or to respond to managers’ requests.

Table 5: Active approach

How do you use Yammer?	Production	Admin.	Commercial	Quality	Others	TOTAL
To follow conversations	9	3	8	9	3	32
To participate in conversations	0	0	2	0	0	2
Also, to start conversations	2	1	1	1	2	7

The preference for traditional information systems can contribute to limit the positive attitude towards ESNs. As shown in Table 6, Yammer was not considered to be a significant information source, and users favoured email, company’s databases, and even personal interactions (meetings and phone calls). In general, traditional sources were deemed very important while there was a limited resort to the newest ones. This confirms the analysis of Trier, Fung and Hansen, (2017), namely that when people consider traditional communication modes and tools to be more comfortable, they are reluctant to move on to the new ones.

The question regarding the possible motivations to use the system provides important confirmations. Especially, the willingness to learn new things and improve the individual work were the most indicated reasons to use Yammer (Table 7); therefore, the fact that Yammer was little used in the company confirms that the platform did not meet these expectations, in particular the second one: actually, as already emerged from Table 4, Yammer did not integrate with the established work practices. Table 7 also raises an important point: pressure of top management was not considered a way to motivate people to use Yammer, which supports the assertion of many scholars (as e.g. Razmerita, Kirchner and Nielsen, 2017) that intrinsic or personal motivations are more important than external pressures.

Table 6: Most relevant information sources

Company departments	Currently, what source of information is relevant to your job?								
	Email	DB	Formal meetings	Informal meetings	Phone	Written documents	External websites	Company website	Yammer
Production	6.73	4.91	5.64	5.45	6.00	5.09	4.36	2.27	3.00
Administration	6.75	6.00	5.50	5.25	5.75	5.50	4.75	5.00	3.25
Commercial	7.00	6.64	5.91	5.73	5.91	5.36	4.73	4.36	2.91
Quality	5.80	6.50	6.10	5.40	4.60	6.10	2.60	3.50	2.60
Others	6.80	5.00	5.20	6.80	6.20	5.00	3.00	1.60	1.40
TOTAL	6.59	5.88	5.76	5.66	5.63	5.44	3.90	3.32	2.71

Table 7: Motivations to use Yammer (max 2 responses)

In your opinion, what motivations can induce a colleague to use Yammer?	Responses	%
Learn new things	26	63.4
Have job-related benefits	20	48.8
Improve the company's performance	8	19.5
Use a cutting-edge technology	5	12.2
Pressure from the top management	2	4.9

Two questions were asked to respondents about the perceived obstacles to Yammer use. The responses point out that *organizational obstacles* (87 responses) were perceived to be much higher than *technical obstacles* (54 responses). This is totally in line with the finding of other empirical investigations (Nielsen and Razmerita, 2014; Vladova et al., 2018)

Table 8: Perceived technical obstacles (max 3 responses; 8 n.a.)

Which are the technical obstacles to using Yammer?	Responses	%
Retrieving information is difficult	12	29.3
The system is not compatible with other tools	11	26.8
Accessing the system is difficult	11	26.8
The system lacks some functionalities	8	19.5
Technical support is insufficient	5	12.2
The system is not secure	4	9.8
Uploading new content is difficult	3	7.3

Among the technical obstacles (Table 8), the three most cited were the difficult in retrieving information, the scarce compatibility with other tools, and the fact that accessing the system was not easy. Security was not regarded as a problem, very likely because the system was not open to external partners.

The perceived utility of the different functionalities of Yammer confirms that technical obstacles may not be a problem, especially because the people are already familiar with social media in their private life. Respondents indicated, on average, 2.9 tools (out of the 4 possible answers that were allowed). This signals that they had a rather good knowledge of the Yammer's features and that its use did not present insurmountable difficulties from the technical side. As expected, the most cited functionalities were those commonly used on Facebook (Table 9).

Table 9: Perceived usefulness of Yammer's functionalities (max 4 responses; 1 n.a.)

Which is the most useful functionality of Yammer?	Responses	%
Updates	28	68.3
Sharing	22	53.7
Comments	14	34.1
Announcements	14	34.1
Polls	9	21.9
Automatic notification	7	17.1
Messages	6	14.6
Document storage	5	12.2
Replies	3	4.9
Like	3	4.9
Search	3	4.9
Hashtag	1	2.4
Praises	1	2.4
Notes	0	0.0

The three most mentioned organizational obstacles, i.e. too few active people, too few and not updated content (Table 10), were the direct consequence of the scarce use of the platform. This generated a sort of vicious circle that is very difficult to break (the system was not useful, consequently it was not used, and in turn this contributed to increase its uselessness). Another important obstacle was *lack of time*. According to recent studies, this is a common problem that afflicts the users of new social tools in the business context (Vuori and Okkonen, 2012; Razmerita, Kirchner and Nielsen, 2016).

Table 10: Perceived organizational obstacles (max 3 responses; 1 n.a.)

Which are the organizational obstacles to using Yammer?	Responses	%
Too few active people	25	61.0
Too few content	19	46.3
Content is not updated	16	39.0
Lack of time	12	29.3
Lack of interest by the management	7	17.1
Risk of being distracted	5	12.2
Fear of revealing personal information	2	4.9
Feeling to be controlled	1	2.4
Content is little reliable	0	0.0

Two other questions aimed at investigating structural aspects that can influence the use of an ESN platform. The first one concerned the perceived *organisational context of the company* (Table 11). Flexibility/innovativeness and process efficiency were the most cited, while tolerance of mistakes and transparency were among the less mentioned. The presence of a climate of trust and mutual collaboration were also scarcely indicated. These perceptions denote that an organisational climate that is *not particularly oriented to internal knowledge sharing* may not favour the introduction and use of ESN tools.

Table 11: Perceived organizational context (max 3 responses)

Which characteristics better define your company?	Responses	%
Flexibility and innovativeness	26	63.4
Process efficiency	24	58.5
Speed and accuracy in achieving goals	13	31.7
Openness towards employees' suggestions	10	24.4
Mutual trust climate	9	22.0
Strong collaboration climate	9	22.0
Accountability	9	22.0
Tolerance towards mistakes	8	19.5
Transparency	4	9.8

The second collected the opinions about the perception of the goals of the company regarding the ESN. The responses (see Table 12) confirm that, according to users, the company wanted to promote internal knowledge sharing and collaboration (which was exactly the case). This point is important for two reasons: first, it confirms that, when the apparent company's goal regarding the system *is not aligned* with the organizational context of the company (see Table 11), the use of the system may not be favoured; second, even when people are aware of the reason why a tool is introduced this is not sufficient to motivate them to using it.

Table 12: Perception of company's goals regarding the ESN (max 3 responses; 1 n.a.)

In your opinion, what goals have led the company to introduce Yammer?	Responses	%
Improve internal knowledge sharing	32	78.0
Enhance internal collaboration	30	73.2
Produce new ideas	19	46.3
Improve the effectiveness of activities	6	14.6
Improve the efficiency of activities	5	12.2
Control and store information	3	7.3
Improve business processes	2	4.9

The final question, about how the use of Yammer can be promoted (Table 13), was used also as a cross-confirmation of the previous questions. The need to integrate Yammer with other systems, to better explain its purpose and to make its use more intuitive were the most cited responses. Especially the first one is another indication that the platform was considered "something else" compared to the daily used tools.

Other suggestions (i.e. adding functions, providing a supporting staff) obtained little indications. Particularly, giving economic rewards to Yammer's users was considered ineffective. All this is totally consistent with the previous question concerning the motivations to use the platform and confirms what most of the literature states about the uselessness (if not harmfulness) of resorting to rewards to promote knowledge sharing in general and specifically by means of an ESN (Vuori and Okkonen, 2013; Razmerita, Kirchner and Nielsen, 2016).

Table 13: Ways to promote Yammer usage (max 3 responses; 1 n.a.)

What do you suggest in order to promote the usage of Yammer?	Responses	%
Not worth incentivizing it	3	4.9
Integrate with other systems	16	39.0
Better explain its purposes	16	39.0
Make its use more immediate and intuitive	12	29.3
Provide training	12	29.3
Include it in job description	11	26.8
Better classify information	11	26.8
Provide a supporting staff	6	14.6
Add other functionalities	5	12.2
Give rewards	2	4.9

5. Discussion

Table 14 reports a summary of the main factors that appear to be important in the case in question. The data about the frequency of use of the system (Table 2) confirms that the adoption of Yammer was substantially unsuccessful. After more than two years since its introduction, the platform was used only sporadically and was considered the least important source of information and knowledge (Table 6). For these reasons, the company has expressed the willingness to abandon Yammer and switch to other tools. Just because it is a case of failure, this makes the data collected even more significant for understanding the factors that may have influenced this insufficient use of the ESN platform, addressing our first research question RQ1 (Which factors can primarily affect the adoption and effective use of an ESN platform by a medium-sized company?).

Table 14: Main factors affecting usage of ESN in the case company

INDIVIDUAL FACTORS	Lack of time
	Preference for traditional communication systems
	Connection with actual business and working tasks
	Willingness to learn new things
	Job-related benefits
ORGANIZATIONAL FACTORS	Presence of a large group of active users
	Insufficient and not updated content
	Knowledge sharing oriented climate
	Alignment with general goals of the company
TECHNICAL FACTORS	Difficult retrieval of information
	Complex access
	Compatibility with other systems

Among the individual or personal factors, an element that may have been especially important is the lack of time. Indeed, the use of a social network may have been perceived not as an opportunity but, rather, an additional burden. Furthermore, familiarity with existing alternative systems and modes of communication may have led users to prefer these tools rather than the new media. Lastly, an insufficient connection with the real needs of users in their daily work can further explain why Yammer was not employed. All the previous elements were not counterbalanced by a certain willingness to learn new things that characterised the users.

In the investigated case, organizational factors seem to have had a highly negative impact on the ESN use. In particular, the presence of very few active users (producing contents, engaging in conversations, etc.) and, consequently, the too little and not updated content in the network, have contributed to create a diffused perception of irrelevance. To this, an organizational climate not favourable to knowledge sharing, and a misalignment of the platform with the goals of the company should be added.

Technical factors were less important than individual motivations or organizational aspects. Among these, in any case, a difficult retrieval of information (for example, a lack of content classifications, or of an appropriate search engine) and a complex access were signalled as crucial elements. In other words, although ESN tools are quite popular – and the people are generally experienced enough in their use – their main functions are not so effective when it comes to business tasks which require efficiency and precision. Scarce compatibility with other business systems was also an important reason of insufficient use.

As regards our second research question RQ2 (Are these factors similar - or not - to those that are deemed to be important in the case of large companies?) it is possible to affirm that the factors that mainly affect the use of ESN platforms by a medium-sized company are very similar to those that characterize larger companies as is suggested by the literature previously cited. Specifically, in both the two contexts, lack of time, limited

participation, insufficient content, not updated and scarcely connected with the daily work, and preference to use traditional communication and knowledge exchange media are perceived as hindering the use of the platform. Similarly, economic rewards are not considered a facilitating factor. Furthermore, technical barriers were deemed as less relevant than the organizational ones. What, instead, seems to be more specific to the case of a small company is the high importance of the lack of active people, of an organizational climate that is not oriented towards knowledge sharing, and the insufficient alignment of the tool with the goals of the company.

6. Conclusion

This study contributes to the research about the adoption and use of ESNs as knowledge sharing tools by a medium-sized company, a topic where empirical evidence is still scarce. By means of a direct investigation of the behaviours and opinions of individual workers, it sheds light on the factors that can affect the successful introduction of these new social technologies in such organisations. In particular, the study highlights that two organisational factors (that are intrinsically connected to the size of the company) can be particularly important for explaining this case of failure: the limited number of active users, and a sort of naïve (“me-too”) implementation strategy (i.e. the insufficient alignment with clear strategic goals of the company in terms of knowledge sharing). The negative effects of these factors were amplified by an insufficient connection with the actual needs of workers in their daily business activities. These elements made it difficult to exploit the full benefits of ESNs.

As regards the technological factors, they did not apparently raise insurmountable barriers, probably because people are becoming even more familiar with public social networks. However, an insufficient integration with other business systems may also represent a problematic aspect.

Implications for research. The study confirms that even in the case of a medium-sized enterprise the success of ESNs seems to be influenced by individual and organizational factors much more than the technical ones: in this regard, small companies are rather similar to the big ones. Substantial differences, instead, concern the difficult reaching of a *critical mass of users* and the presence of a climate not always favourable to knowledge sharing. Another important lesson is that the introduction of an ESN should be aligned with the strategic goals of the company, and this should be clearly perceived by employees. In other words, when the people feel that the company is not really interested in promoting knowledge sharing, they may not feel necessary to use the system.

The study also shows that attitudes and behaviours of individuals can play a role in facilitating the use of social tools, as e.g. willingness to learn new things, lack of time, and preference for traditional communication systems. However, these factors seem to have a more general value, less connected with the limited size of the company.

Future studies may be conducted to further investigate such aspects, especially in the case of smaller enterprises, and namely, to understand how much the organizational context can influence the ESN adoption patterns.

Implications for management. The case provides interesting lessons that may suggest ways of reducing the risk of failure of an ESN project in a small company. First of all, an ESN must fit the actual knowledge sharing needs of employees in their daily business activity. Consequently, it is essential that the implementation project is not strictly an imposition of the top management but involves individual users. This is particularly difficult in the case of a medium-sized enterprise, because the limited number of employees requires the involvement of almost all the potential users from the starting of the initiative. However, the case also confirms that leaving the initiative only to employees can be insufficient. Therefore, a combined “top-down” and “bottom-up” approach (i.e. a strong support from management combined to free initiative of employees) may be a better solution. Otherwise, employees may perceive the system as an additional burden that requires their time and attention but with no clear business reason. Again, this problem may be perceived to be serious especially in small companies, where people are more stuck to daily practices: although social media are becoming more and more popular in our private lives but, as some scholars affirm (Forsgren and Byström, 2018; Madsen, 2017; Trier, Fung and Hansen, 2017), not for a “serious game”: in other words, when it comes to the real

business, a Facebook-like tool may not be perceived as appropriate. Or at least, the integration of social media functions into traditional business information tools may be vital.

Limitations. A first limitation of the study is that it investigates only one company operating in a specific sector with peculiar knowledge sharing needs and capabilities. Furthermore, the case concerns a single type of ESN platform, Yammer, with its own technical features. Lastly, the answers reflect the subjective view of the respondents only. However, even if, due to the above-mentioned limitations, results cannot be generalized, they can provide suggestions and find application to other cases, e.g. to discover common patterns. A possible future improvement is to adopt the same questionnaire to analyse other cases of ESN implementation in companies of a similar size, to explore regularities and make useful comparisons. More generally, future research should investigate if and how the new social platforms can be used also by smaller companies to make the management of their cognitive assets more efficient and effective.

References

- Ahmed, Y.A., Ahmad, M.N., Ahmad, N. and Zakaria, N.H. 2019. Social Media for Knowledge-Sharing: A Systematic Literature Review. *Telematics and Informatics*.
- Bechina, A., Arntzen, A. and Ribiere, V. 2012. Is the emergence of social software a source of knowledge management revival? In: Gurteen, D. (ed.) *Leading Issues in Social Knowledge Management*, Reading: Academic Publishing International, pp. 1-21.
- Bolisani, E. and Garcia-Perez, A. 2017. Strategic Adoption of Wiki-Based Initiatives in Small Organizations: Challenges and Opportunities. In: Tsui E. and Cheung B. (eds.) *Proceedings of the 14th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning ICICKM 2017*, Reading: Academic Conferences Limited, pp. 20-28.
- Bolisani, E. and Scarso, E. 2016. Factors affecting the use of wiki to manage knowledge in a small company. *Journal of Knowledge Management*, 30(3), pp. 423-443.
- Bulgurcu, B., Van Osch, W. and Kane G.C. 2018. The rise of the promoters: user classes and contribution patterns in enterprise social media. *Journal of Management Information Systems*, 35(2), pp. 610-646.
- Calero Valdez, A., Brell, J., Schaar, A.K. and Ziefle, M. 2018. The diversity of why: a meta-analytical study of usage motivation in enterprise social networks. *Universal Access in the Information Society*, 17(3), pp. 549-566.
- Charki, M.H., Boukef, N., Soror, A. and Sharara, H. 2018. What Drives Knowledge Contribution on Enterprise Social Media? *39th ICIS*, San Francisco.
- Chin C.P.Y., Choo K.K.R. and Evans N. 2015. Enterprise Social Networks: A Successful Implementation within a Telecommunication Company. *Twenty-first Americas Conference on Information Systems*, Puerto Rico.
- Chin, C.P.Y., Evans, N. and Choo, K.K.R. 2015. Exploring Factors Influencing the Use of Enterprise Social Networks in Multinational Professional Service Firms. *Journal of Organizational Computing and Electronic Commerce*, 25(3), pp. 289-315.
- Edvardsson, I.R. and Durst, S. 2013. Does Knowledge Management Deliver the Goods in SMEs? *Business and Management Research*, 2(2), pp. 52-60.
- Ellison, N.B., Gibbs, J.L. and 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), pp. 103-123.
- Forsgren, E. and Byström, K. 2018. Multiple social media in the workplace: Contradictions and congruencies. *Information Systems Journal*, 28(3), pp. 442-464.
- Gardner, B. 2013. Making sense of Enterprise 2.0. *VINE*, 43(2), pp. 149-160.
- Guinan, P.J., Parise, S. and Rollag, K. 2014. Jumpstarting the use of social technologies in your organization. *Business Horizons* 57(3), pp. 337-347.
- Hacker, J. 2017. Enterprise Social Networks: Platforms for Enabling and Understanding Knowledge Work? In: Helms, R., Cranefield, J. and van Reijssen, J. (eds), *Social Knowledge Management in Action*, Switzerland: Springer International Publishing, pp. 17-37.
- Hacker, J., Florian, N. and Bodendorf F. 2018. Enablers and Inhibitors of Engagement in Enterprise Social Networks from the Viewpoint of Executives—A Case Study in a Technology Company. *Proceedings of the Multikonferenz Wirtschaftsinformatik*, pp. 145-156.
- Harrysson, M., Schoder, D. and Tavakoli, A. 2016. The Evolution of Social Technologies. *McKinsey Quarterly*, 53(3), pp. 8-12.
- He, W., Wang, F.K., Chen, Y. and Zha, S. 2017. An exploratory investigation of social media adoption by small businesses. *Information Technology and Management*, 18(2), pp. 149-160.
- Helms, R., Cranefield, J. and van Reijssen, J. 2017. Social Media and Knowledge Management: A Perfect Couple. In: Helms, R., Cranefield, J. and van Reijssen, J. (eds), *Social Knowledge Management in Action*, Switzerland: Springer International Publishing, pp. 1-13.
- Högberg, K. 2018. Organizational Social Media: A Literature Review and Research Agenda. *Proceedings of the 51st Hawaii International Conference on System Sciences*, 1864-1873.
- Jackson, S.L. (2009). *Research Methods and Statistics: A Critical Thinking Approach*, 3rd edition, Belmont, CA: Wadsworth.

- Kane, G.C. 2017. The evolutionary implications of social media for organizational knowledge management. *Information and Organization*, 27(1), pp. 37-46.
- Kaplan, A.M. and Haenlein, M. 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizon*, 53, pp. 59-68.
- Kirchner, K. and Razmerita, L. 2019. Managing the Digital Knowledge Work with the Social Media Business Value Compass. *Proceedings of the 52nd Hawaii International Conference on System Sciences*, pp. 6438- 6447.
- Korzilius, H. (2009). Quantitative analysis in case study. In: Mills, A.J., Durepos G., and Wiebe E. (eds.), *Encyclopedia of case study research*. Thousand Oaks, Sage Publications, pp. 760-764.
- Lal, P. 2016. Analyzing the Factors Driving the Usage of Enterprise Social Network. *International Journal of Social and Organizational Dynamics in IT*, 5(2), pp. 15-30.
- Laumer, S., Shami, N.S., Muller, M. and Geyer, W. 2017. The Challenge of Enterprise Social Networking (Non-) Use at Work: A Case Study of How to Positively Influence Employees' Enterprise Social Networking Acceptance. *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*, pp. 978-994.
- Leonardi, P.M. and Vaast, E. 2017. Social Media and Their Affordances for Organizing: A Review and Agenda for Research. *Academy of Management Annals*, 11(1), pp. 150-188.
- Leonardi, P.M., Huysman, M. and Steinfield, C. 2013. Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations. *Journal of Computer-Mediated Communication*, 19(1), pp. 1-19.
- Levy, M. 2013. Stairways to heaven: implementing social media in organizations. *Journal of Knowledge Management*, 17(5), pp. 741-754.
- Lin, J. 2007. Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of information science*, 33(2), pp. 135-149.
- Madsen, V.T. 2017. The challenges of introducing internal social media—the coordinators' roles and perceptions. *Journal of Communication Management*, 21(1), pp. 2-16.
- Majchrzak, A., Faraj, S., Kane, G.C. and Azad, B. 2013. The Contradictory Influence of Social Media Affordances on Online Communal Knowledge Sharing. *Journal of Computer-Mediated Communication*, 19(1), pp. 38-55.
- Mäntymäki, M. and Riemer, K. 2016. Enterprise social networking: A Knowledge management perspective. *International Journal of Information Management*, 36, pp. 1042-1052.
- Ngai, E.W., Tao, S.S. and Moon, K.K. 2015. Social media research: Theories, constructs, and conceptual frameworks. *International Journal of Information Management*, 35(1), pp. 33-44.
- Nielsen, P. and Razmerita, L. 2014. Motivation and Knowledge Sharing through Social Media within Danish Organizations. In: Bergvall-Kåreborn, B. and Nielsen, P.A. (eds.) *Creating Value for All Through IT*, Berlin: Springer, pp. 197-213.
- Odoom, R., Anning-Dorson, T. and Acheampong, G. 2017. Antecedents of social media usage and performance benefits in small-and medium-sized enterprises (SMEs). *Journal of Enterprise Information Management*, 30(3), pp. 383-399.
- Oettl, C., Berger T., Böhm M., Wiesche M., and Krcmar H. 2018. Archetypes of Enterprise Social Network Users. *Proceedings of the 51st Hawaii International Conference on System Sciences*, 2036-2045.
- Qi, C. and Chau, P.Y.K. 2018. Will enterprise social networking systems promote knowledge management and organizational learning? An empirical study. *Journal of Organizational Computing and Electronic Commerce*, 28(1), pp. 31-57.
- Razmerita, L., Kirchner, K. and Nielsen, P. 2016. What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication. *Journal of Knowledge Management*, 20(6), pp. 1225-1246.
- Razmerita, L., Kirchner, K. and Nielsen, P. 2017. The Perceived Business Value of Social Media at Work. *International Journal of multidisciplinary in business and science*, 3(4), pp. 52-59.
- Sankaran, P., Bheeman, S., Priya, K.H., Zhou, X. and Gururajan, R. 2017. Factors impacting employee engagement on enterprise social media. *Proceedings of the International Conference on Web Intelligence*, pp. 1114-1121.
- Sarka, P. and Ipsen, C. 2017. Knowledge sharing via social media in software development: a systematic literature review. *Knowledge Management Research & Practice*, 5(4), pp. 594-609.
- Soto-Acosta, P. and Cegarra-Navarro, J.G. 2016. New ICTs for knowledge management in organizations. *Journal of Knowledge Management*. 20(3), pp. 417-422.
- Stein, G. and Rossmann, A. 2017. Implementation Strategies for Enterprise Social Networks. In: Rossmann, A. and Zimmermann, A. (eds.) *Digital Enterprise Computing (DEC 2017)*, Bonn: Gesellschaft für Informatik, pp. 67-78.
- Stein, G., Sprenger, S. and Rossmann, A. 2016. Enterprise social networks: status quo of current research and future research directions. In: Abramowicz, W., Alt R. and Franczyk, B. (eds) *Business Information Systems: 19th International Conference*, Springer International Publishing, pp. 371-382.
- Stocker, A. and Müller, J. 2016. Exploring use and benefit of corporate social software: Measuring success in the Siemens case References+. *Journal of Systems and Information Technology*, 18(3), pp. 277-296.
- Trier, M., Fung, M. and Hansen, A. 2017. Uncertainties as barriers for knowledge sharing with enterprise social media. *Proceedings of the 25th ECIS*, Guimaraes, Portugal, June 5-10.
- Ungureanu, H. 2016. Microsoft Opens Yammer To All Office 365 Business Customers, Boasting 'Seamless Availability'. Available at www.techtimes.com/articles/130405/20160204/microsoft-opens-yammer-to-all-office-365-business-customers-boasting-seamless-availability.htm (accessed 23 February 2018)
- Vladova, G., Ullrich, A., Bahrs, J. and Bender, B. 2018. Digitalisation and enterprise knowledge (net) working. *Proceedings of the 51st HICSS*, 4182-4191.

Vuori, V. and Okkonen, J. 2012. Knowledge sharing motivational factors of using an intra-organizational social media platform. *Journal of Knowledge Management*, 16(4), pp. 592-603.

Weber, M.S. and Shi, W. 2017. Enterprise Social Media. In: Scott, C.R. and Lewis, L. (eds.) *The International Encyclopedia of Organizational Communication*, Chichester: Wiley – Blackwell.

Wehner, B., Ritter, C. and Leist, S. 2017. Enterprise social networks: A literature review and research agenda. *Computer Networks*, 114, pp. 125-142.

Appendix

Table A1: Aspects investigated by the questionnaire

Questions considered	Analysed aspect	References and notes
What source of information is relevant to your job?	Individual factors	Bolisani and Scarso (2016)
What kind of information do you need for your job?	Cognitive aspects	Not included in the analysis
How do you use information during your job?	Cognitive aspects	Not included in the analysis
Which characteristics better define your company?	Organizational factors	Chin, Choo and Evans (2015); Lal (2016)
How often do you use Yammer?	Measure of ESN usage	Bolisani and Scarso (2016)
How do you use Yammer?	Organisational factors	Bolisani and Scarso (2016); Bulgurcu, Van Osch, and Kane (2018)
Why do you actively participate in conversations on Yammer?	Individual factors	Chin Choo and Evans (2015); Bolisani and Scarso (2016); Razmerita, Kirchner and Nielsen (2016)
For what do you especially use Yammer?	Individual factors	Lal (2016)
Why should a colleague use Yammer?	Individual/Organizational factors	Razmerita, Kirchner and Nielsen, (2016)
What motivations can induce a colleague to use Yammer?	Individual factors	Bolisani and Scarso (2016); Razmerita, Kirchner and Nielsen (2016)
Which are the organizational obstacles to using Yammer?	Technological factors	Chin Choo and Evans (2015); Bolisani and Scarso (2016); Razmerita, Kirchner and Nielsen, (2016)
Which organizational obstacles can limit the use of Yammer?	Organizational/Individual factors	Chin Choo and Evans (2015); Razmerita, Kirchner and Nielsen (2016); Lal (2017)
What goals have led the company to introduce Yammer?	Organizational factors	Bolisani and Scarso (2016)
Which is the most useful functionality of Yammer?	Technological factors	Bolisani and Scarso (2016)
What do you suggest in order to promote the usage of Yammer?	Multiple factors	Cross-verification question