Emergent approach to knowledge management by small companies: multiple case-study research

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Abstract

Purpose – *The purpose of this paper is to investigate the knowledge management (KM) approach followed by small companies. In particular, after introducing the notion of emergent approach, the paper aims to examine if that notion is useful to properly describe the way small businesses approach their KM activities.*

Design/methodology/approach – *The study is based on the results of a qualitative survey involving 12 owners and managers of small companies belonging to the knowledge-intensive business services (KIBS) sector. The survey uses the case-study method.*

Findings – *The findings confirm that the approach to KM adopted by small companies can be defined as emergent: in the analysed cases, there were no formal KM plans, despite the fact that the examined companies have all introduced various KM practices. This shows that there can be the need to define KM approaches that better fit smaller companies.*

Practical implications – *Although an emergent approach may be seen as unplanned, companies should learn how to be aware of their KM practices and, once they are, how to develop them properly. For executives to be able to recognize emergent KM practices, notions and elements of KM need to be introduced in their business background and professional education (e.g. how KM fits into a small organization, what KM processes are, what KM tools and practices exist, etc.).*

Originality/value – *The study contributes to the understanding of KM in really small entities, still a much under-explored topic.*

Keywords *Poland, Knowledge management, Small firms, Small to medium sized enterprises, Case study analysis, Emergent approach*

Paper type *Research paper*

1. Introduction

The body of research about knowledge management (KM) in small and medium-sized enterprises (SMEs) is rather limited (Durst and Edvardsson, 2012) compared to the large number of studies concerning big companies. There is also a scarcity of practical guidelines and best practices in KM for SMEs, although some initiatives have been undertaken to fill in this gap (Ogiwara *et al.*, 2010). This happens even in the case of those small companies for which cognitive resources are a key determinant of their success (Coyte *et al.*, 2012).

Despite the scarce literature, there is clear evidence that SMEs do not manage knowledge the same way as large firms (Chan and Chao, 2008; Wee and Chua, 2013). Prior research underlines that their KM initiatives cannot simply be seen as a scaled-down reproduction of large companies' practices (Desouza and Awazu, 2006). In particular, SMEs, even when they are aware of the importance of their knowledge assets, generally tend to follow an unplanned, unsystematic and informal approach to KM (Edvardsson, 2006, 2009; Hutchinson and Quintas, 2008). In fact, KM initiatives in small organizations are often not very explicit and deliberate, and as such, difficult to detect and examine, so that one may even argue that such companies do not manage their knowledge at all. Thus, there is the need for more extensive research to investigate if and how small and micro companies

manage their knowledge. This paper contributes to fill this research gap by deepening the understanding of the way this category of companies plan, implement and use KM practices and systems; specifically, it examines the nature of the KM implementation approach adopted by them.

The present study is based on the findings of an empirical investigation involving owners and managers of small companies offering knowledge-intensive business services (KIBS). It makes use of the case-study method and provides a preliminary analysis of what can be labelled as an *emergent KM approach*, i.e. an approach to KM where practices, tools and methods originate from the daily practices and learning processes of company's employees. Although it is a multiple-case study, the idea is not to draw conclusions of general validity, but rather to derive some implications concerning the implementation of KM by small companies, as well as suggestions for both scholars and practitioners.

The paper articulates as follows. Section 2 proposes a brief review of the literature on KM in SMEs, which, as mentioned above, is still insufficient, while Section 3 clarifies the notion of emergent KM. Section 4 describes research methodology and research questions. Section 5 summarizes the main findings of the empirical investigation, and discusses them. The concluding section recapitulates the major results, and illustrates possible implications for research and management.

2. Knowledge management in SMEs

As KM is "rapidly becoming an integral business activity for organizations as they realize that competitiveness pivots around the effective management of knowledge" (Wong and Aspinwall, 2005), KM initiatives are gaining more and more attention not only in large companies, but also among their smaller counterparts (Bozbura, 2007; Wei Chong *et al.*, 2011b). Actually, KM has the potential to provide several benefits to small and medium-sized firms, such as better communication, improved customer service, faster response times, enhanced innovativeness, greater efficiency in processes and procedures and reduced risk of loss of key capabilities (Handzic, 2004; Edvardsson and Durst, 2013a). KM initiatives may also lead to skill increase or staff retention (Migdadi, 2009; Wei Chong *et al.*, 2011b), and can have a positive influence on broadly defined human capital, new business opportunities and new product development (Edvardsson and Oskarsson, 2013). Additionally, as Dotsika and Patrick (2013) or Desouza and Awazu (2006) highlight, the implementation of KM programmes in SMEs may be even more crucial, as knowledge can be their single key resource. Furthermore, knowledge and its management are often perceived as critical sources of growth (Salojärvi *et al.*, 2005).

In spite of the above, the literature that examines KM in the context of small entities is still insufficient (Dwivedi *et al.*, 2011; Durst and Edvardsson, 2012; Ribière and Christian, 2013), and offers only fragmented insights (Edvardsson and Durst, 2012). With the growing importance of KM for SMEs, it seems not sufficient simply to state that such companies manage their knowledge in a different way than their larger counterparts (Desouza and Awazu, 2006). Hence, the question appears on whether and how small firms introduce KM and what are the characteristics of their approach to KM.

Actually, small firms have some unique features (e.g. limited financial and human resources, centralized management, focus on the day-to-day business operations, short-term strategy) that deeply influence the way they work (Torrés and Julien, 2005) and that can potentially constrain their propensity to introducing KM. In this regard, Nunes *et al.* (2006) affirm that managers of SMEs are not prepared to invest the relatively high effort on long-term KM goals for which they have difficulty in establishing the added value. On the other hand, there are some other features small companies possess, i.e. flat structure, informal managerial styles, flexible organizational structure or innovation potential (Hudson *et al.*, 2001), that might encourage and support knowledge processes in firms of this size.

The above characteristics lay the grounds for defining the KM approach followed in small entities. As Nunes *et al.* (2006) state, KM activities in SMEs tend to be performed in an informal way, and are not necessarily supported by purposely designed information and communications technology (ICT) systems. Looking beyond formal or nominal KM actions when it comes to SMEs is suggested also by Hutchinson and Quintas (2008). Edvardsson (2006) had already noted that explicit KM strategies in SMEs are rare, and many small companies consider KM at an operational level, i.e. at the level of systems and tools, and they may not distinguish KM from the other practices. In addition, Edvardsson and Durst (2013b) claim that, compared to larger firms, SMEs tend to be more oriented towards the management of tacit knowledge. They are also less proficient in sharing knowledge via formal systematic approaches.

To sum up, scholars commonly agree that small businesses manifest an "informal short-term approach" towards KM. In SMEs, many processes occur naturally, regardless of a formal charter being set in place (Wee and Chua, 2013): this is why in such organizations, KM is often practised even if it may be not recognized as such (Salojärvi *et al.*, 2005). This is also confirmed by Wong and Aspinwall (2004), who stated that "small businesses generally lack a proper understanding of KM, mostly in terms of key concepts", and that they "have been slow in adopting formal and systematic KM practices".

3. Emergent KM

The idea of "emergent" KM development, especially when SMEs are concerned, has been already proposed in the literature, but in a fragmented way. For instance, as particularly regards actions and mechanisms that support knowledge sharing in an organization, Van den Hooff and Huysman (2009) distinguish between two approaches: engineering and emergent. The engineering approach focuses on "managing and controlling organizational knowledge for the purpose of securing a competitive advantage"; it is assumed that knowledge, seen as a strategic resource of a company, can be shared and transferred in an organization by providing the context and means to do so in a "top-down fashion". Previous studies have focused on this aspect, giving particular attention to the role played by organizational and technical infrastructures to support knowledge sharing among individuals. Conversely, in an emergent approach, "the focus is mainly on social aspects, and knowledge sharing is seen under a practice-based perspective". In such an approach, the situated and collective nature of learning is stressed: organizational members learn from and with each other during their day-by-day activities, and KM practices and tools "emerge" from the bottom. According to Ferguson *et al.* (2010), the engineering approach derives from a rationalistic and objectivistic view of knowledge, while the emergent approach derives from a post-rationalist and practice-based view. Furthermore, the former considers KM as driven by a perceived need to manage and control knowledge resources, while the latter is mainly geared towards facilitating knowledge flows within and between social networks. The same authors also indicate the two approaches, respectively, with the terms "active" and "latent" KM programmes. In a previous study, Sparrow (2005) referred to a contrast between an idea of KM "emergent" development in small companies and those of "investigative/diagnostic" and "event-based" KM development. The first approach is implemented through pilot projects, the second one is supposed to face the overall cognitive needs and the third one aims to solve specific problems. Also, Burford *et al.* (2011) underline the dissonance that exists between a strategic/top-down management and a situated/practice-based approach to knowledge works, where the former privileges formalized and cognitivist processes, while the latter represents an emergent, self-organizing and spontaneous activity.

To sum up, the analysis of the literature clearly shows that there is no consensus on what can be defined as an emergent KM approach. Hence, there is the need to specify the meaning of the term "emergent" when used in the context of KM followed by a company. To do so one can refer to the strategic management literature, and particularly to the distinction between deliberate versus emergent approach towards strategic planning

(Mintzberg and Waters, 1985). Mintzberg and Waters (1985) define a deliberate or planned approach by giving a set of conditions that need to be fulfilled by an organization to claim its approach as such. The first important condition of a deliberate approach is the precise intentions in an organization on what to do, clarified in a concrete way before any actions are taken. The second condition concerns the awareness and acceptance of those intentions at all organizational levels, either by sharing them or agreeing to take from leaders. The third condition is the realization of intentions in an exact way as they were planned, without any interference from the outside of the organization. To sum up, in the deliberate approach, one observes an explicit and rational formulation of goals, plans and means that originates from precise intentions of the company and is generally decided by central leadership and backed up by formal controls in top-down logic.

Conversely, in a perfectly emergent approach to strategic planning, activities are undertaken by an organization in the absence of intentions, direct leadership and previous formulation of aims. In other words, in an emergent approach, goals and plans of a company result from an *ex post* formalization and co-ordination of actions, decisions and tasks that have proven to be effective and beneficial to the organization.

Although, as Mintzberg and Waters (1985) highlight, a purely emergent approach is hardly possible in real life, some organizations come close to that abstract definition. As the recent survey by Bozkurt and Kalkan (2013) shows, it can occur especially in small businesses.

This review lays the grounds for defining the emergent KM approach as follows:

> Emergent KM approach is an approach where practices, tools and methods of managing knowledge originate from the daily practices and learning processes of company's employees. In substance, employees develop their own methods of learning, storing, retrieving and sharing knowledge in relation to their actual needs and practical problems to solve. Those methods and tools that prove to be effective, useful and/or compatible with the daily business practice are later developed to become established practices, and in the end can be recognized as "the KM approach" of the company.

This emergent approach contrasts to a deliberate or planned one, where KM goals, methods and tools are defined by the top management based on an analysis of company's needs, objectives and resources, and are later implemented and spread across the organization by means of intentional efforts and specific investments. The above defined notion of emergent KM is also different from:

- "Informal" KM, as intended for instance by Hutchinson and Quintas (2008), Coyte *et al.* (2012), Nunes *et al.* (2006) or Wee and Chua (2013). These authors make use of the term "informal" to indicate that the set of KM practices and tools adopted by a company is not explicitly formalized in a structured plan, or that there are no specific roles or budget devoted to KM (Alvarez *et al.*, 2015). They also underline that the adoption of informal controls on knowledge assets constitutes a distinctive trait of small companies, as it allows agility and responsiveness. While informality can characterize the early stages of an emergent KM approach, later a need to organize things in a more formal way may arise, to exploit the advantages offered by a proper management of knowledge resources. It should also be noted that there may be some KM practices (as, e.g., the exchange of knowledge during coffee breaks) that, although informal, can also be intentionally planned by the top management.
- The management of purely "tacit knowledge" (Edvardsson and Durst, 2013b; Durst *et al.*, 2013). Tacit knowledge is generally deemed as crucial in SMEs, as testified by the fact that personalization strategies result to prevail among such companies (Meroño-Cerdan *et al.*, 2007), and the use of sophisticated ICT-based KM tools is quite limited (Edvardsson, 2006). Very often, especially in small companies, most knowledge resides in the minds of owners and key employees (Wong and Aspinwall, 2004). However, SMEs also have to handle explicit components of knowledge: many of them, indeed, make use of document repositories, knowledge maps and other tools that allow

the management of explicit pieces of knowledge (Alvarez *et al.*, 2015). Therefore, an emergent KM approach does not necessarily focus merely on tacit knowledge, but can also be extended to explicit one as a result of codification strategy.

- The idea of progressively "mature" KM. KM maturity models (Hsieh *et al.*, 2009; Khatibian *et al.*, 2010) presume that a company becomes increasingly aware of and engaged in a more and more complete KM approach. In particular, full maturity requires that an enterprise has clear understanding of the links that exist between business vision, mission, tasks and KM strategy. Conversely, with emergent KM, it is assumed that a company does not necessarily reach a "highly complex" KM level, but rather that its KM practices (being these complex or simple) progressively emerge and become part of the business.

4. Methodology and research questions

The main aim of this research was to investigate how small companies manage their knowledge. Despite the fact that literature generally refers to SMEs, the authors prefer to focus on small entities. Indeed, although many studies about KM consider SMEs as a homogenous group (Uit Beijerse, 2000; Corso *et al.*, 2003; Wong and Aspinwall, 2005; Migdadi, 2009; Wei Chong *et al.*, 2011a), in the authors' opinion, it is advisable to divide the SMEs category into *small firms* (including micro ones) and *medium-sized firms*. The reason is that KM practices required by a company with, e.g., 10 employees are far too different from the ones necessary in a company with, e.g., 240 workers. Furthermore, keeping in mind that, among European SMEs, micro firms (i.e. companies with less than 10 employees) stand for 92.4 per cent and small companies (i.e. those between 10 and 50 employees) for 6.4 per cent of all companies in the 28 European Union countries (Muller *et al.*, 2014), micro and small entities should deserve much more attention. As the body of research on KM in small and micro firms is hardly existing – some studies carried out up to date did not consider companies with less than 50 employees (Sanz-Valle *et al.*, 2011; Donate and Guadamillas, 2011; Lopez-Cabrales *et al.*, 2009) or even 100 employees (Lara *et al.*, 2012; Ferraresi *et al.*, 2012) as an object of research – the authors based their theoretical review on studies devoted to SMEs as the whole. The rationale is that the phenomena described in the previous sections concern small and micro firms, but are grounded in the literature on the whole SME group.

On the basis of the literature review presented above, the following research questions were formulated:

R1. Is the notion of emergent approach useful to properly describe the way small businesses address their KM activities?

R2. If so, why small companies follow an emergent KM approach?

R3. What particular features can this approach have in those companies?

As has been signalled in the introduction, the KM approaches of KIBS firms were examined. This type of companies was selected due to the following reasons:

- As knowledge-intensive businesses, they should manage their knowledge properly to offer their services to other companies.
- They are perceived as potential intensive users of KM tools and practices, as such tools and practices are able to increase their innovativeness and improve their organizational results (Mangiarotti, 2012; Lara *et al.*, 2012).

To answer the above questions, the case-study methodology was applied. The rationale for the selection of this methodology originated from the fact that there is not much adequate KM research on small companies. In addition, the concept of emergent KM is a rising one, and there is not much research on it (Bolisani *et al.*, 2014). Due to the above, an inductive methodology involving a multiple-case-study method seemed to be the best choice (Yin, 1989).

For the purpose of the study, it was decided to interview chief executives or owners of small companies providing KIBS. It was reasonable to interview the representatives of these groups, as they are considered to be key informants in companies and were also subjects of other research in KM (Wong and Aspinwall, 2005; Desouza and Awazu, 2006; Palacios-Marqués *et al.*, 2013). Furthermore, in the case of small entities, executives and owners are normally well-informed about all the initiatives carried out by employees. Moreover, due to financial restraints often faced by small firms, employees usually need to ask for acceptance to introduce KM solutions engaging, for example, financial or human resources, while in larger firms, it is generally more difficult for the owners to supervise all the activities and processes led in an organization: therefore, in such cases, interviewing employees would be an obvious choice.

In the interviewing process, respondents were asked the following questions:

- "What practices connected with managing knowledge have you introduced?" (first as a brainstorming practice, followed by a list of KM practices based on Wong and Aspinwall, 2005).
- "What types of knowledge are gathered in your company?"
- "What knowledge is the most crucial from the point of view of your organization?"
- "How do you select this knowledge?"
- "How do you manage this knowledge?"

On the basis of answers, the key characteristics of the KM approach in the examined companies were formulated. All the companies were located in the Pomeranian region of Poland. The number of cases was limited by accessibility, resources and time constraints; however, similar number of cases or interviews had been analysed in other qualitative KM research on SMEs (McAdam and Keogh, 2004; Nunes *et al.*, 2006; Bishop *et al.*, 2008).

The interviews were conducted during the period from September to December 2013. Selected companies varied with regard to their field of operation and number of employees (Table I). Companies operate in sectors like financial services, advisory services, training and human resources management, communication services, etc. All the companies have less than 30 employees on board. Before each interview, the purpose of the study was presented and the anonymity was guaranteed. All the interviewees a priori had to sign an agreement to participate in the study and to be recorded. Afterwards, interviews were transcribed with scrutiny and collated with field notes and information available on companies' websites. All this supported the validation of the obtained data (Suter, 2012). The interviews lasted for between 20 and 50 min. Names of the companies and interviewees have been anonymized for confidentiality reasons. The authors used the inductive approach for the analysis of collected data, as it is suitable for analysis with little

Table I Characteristics of examined companies

Company	*Field of operations*	*No. of employees*
A	Software for property management and stocktaking	28
B	Accounting services for companies	4 (plus 6 co-workers)
C	Design and application of IT systems	Around 20
D	Design of websites and promotion materials	Less than 10
E	Advisory and consultancy	15
F	Design of electronic devices	3
G	Training and HRM	15
H	Various types of software (intelligent systems, website design, kinetic and business applications, etc.)	7
I	Design and implementation of monitoring and alarm systems	10
J	Consulting and IT services	10
K	Controlling application for companies	6
L	Training services to educational institutions and companies	15

or no predetermined theory or framework, when little or nothing is known about the examined phenomenon (Burnard *et al.*, 2008). Specifically, the authors selected the thematic content analysis method (Krippendorff, 2004; Fereday and Muir-Cochrane, 2006), which is based on defining analysis themes and subthemes and subsequent matching recorded and transcribed statements to one or several of these. The thematic content analysis was conducted following three main steps proposed by Elo *et al.* (2014), i.e. preparation, organization and reporting of the results. The authors defined the analysis units as sentences, parts of sentences or groups of sentences, following the rationale behind it presented in another study by Vitari (2011). The analysis was conducted following several steps. First, themes and categories that "emerge" from the data were identified. Second, open coding was applied. On this basis, the initial coding framework was prepared. Third, all duplications were crossed out, resulting in the reduction of categories. Fourth, overlapping or similar categories were grouped together. Fifth, all transcripts were worked out allocating each of the categories. An organized data set obtained in such a way was an input for data reporting.

5. Findings and discussion

This section presents the results of the case-study analysis in relation to the three research questions stated above.

5.1 Is the notion of emergent useful to properly describe the way small businesses approach their KM activities?

All the companies in the sample tend to manage their knowledge without much planning. This goes in line with two studies carried out by Edvardsson (2006, 2009) and the one conducted by Durst and Edvardsson (2012), who stated that "most SMEs have no explicit policy targeted at strategic KM, and they tend to treat KM on an operational level – at the level of systems and instruments". Similarly, in the case of the present study, all companies have introduced certain KM practices that, in their perception, were best suited for their present operational needs. For example, Company E has introduced many KM practices, but with neither formal plan nor explicit reference to KM globally established methods. Similarly, Company A has introduced a Customer Relationship Management (CRM) system, a website for task management and a Wiki for collecting information on projects, but despite that it collects various knowledge types across many departments, this is not done in a systematic way.

The case of Company H confirms that as well. They have introduced some KM practices (especially intranet usage, which is the most crucial one) and they even integrated them into daily routines (e.g. the CRM system has become a standard practice), but despite that, they do not plan and consider KM on a strategic level. They perform some KM activities, but not in a systemized way (e.g. they gather knowledge on competitors).

It is similar for Company G. In this company, there are no formal or structured KM plans, although they manage many various types of knowledge with different tools:

> We have for example procedures, many procedures, for example for collecting knowledge on customers, subcontractors, etc. We have particular procedures for certain purposes [. . .] these procedures function in some sort of independent way. (Company G)

Although they have introduced various KM practices (e.g. identified best internal and external practices or implemented CRM system) responding to the present needs of the company, these practices are not integrated with each other under an overall KM strategy.

Practices and tools adopted in the analysed companies are selected in relation to their effectiveness and usefulness to solve day-by-day problems of employees. The example of Company J manifests that. The company pays attention to learning from mistakes and tries to convince employees to codify not only successes (best practices), but also failures. It results from the fact that the company is very much oriented towards goals and undertakes KM activities to minimize the losses connected with, for example, employee rotation. That

is why the company highlights the need and usefulness of documenting knowledge possessed by its employees.

Also, although practices introduced by the examined companies would be described as "KM" (at least, under a researcher's perspective), there is often no clear recognition of that by the company's executives and employees. There seems to be no direct use of KM concepts as they are traditionally defined and used in the literature and in the practice of the "big KM players". Example of Company B illustrates that. This company has introduced some basic IT solutions available for them and their customers (many based on their website), which allow to manage various types of knowledge, but in an unplanned way. The company does not perceive it as a KM system/solution though:

> There is no particular (KM) system introduced in the company. There is just an unwritten scheme of information flow in the company. (Company B)

To conclude, the approach observed in the examined companies may indeed be considered "emergent" as defined in Section 3. Actually, all the tools and practices adopted by the investigated companies have originated from the daily activities of their employees, especially to find solutions to their practical problems, and by means of trial-and-error processes. Subsequently, the solutions that have proved useful have become common and established practices, even if they have been rarely recognized as KM practices.

5.2 If so, why small companies follow an emergent KM approach?

There are some possible explanations why small KIBS companies, like those analysed here, follow an emergent KM approach. First of all, in small firms, there are employees who know best what kind of knowledge is missing and should be gathered to perform their tasks better and more efficiently. Actually, the value of such companies mostly resides in employees and in the systems they locally use to collect their knowledge. Generally, it is stated that SMEs have "a heavier reliance on knowledge that is personally held by business owners and key employees" (Joe *et al.*, 2013), and it is even more valid for SMEs from the KIBS sector. Therefore, employees might start implementing KM on a small scale first for their own convenience (individually/within one team/within one department, etc.) and later on, if it works, they might continue on a larger scale. If the approach happens to fail, some revisions and modifications might be required and implemented or the initiative might be withdrawn. In such a case, there is not much place for KM planning at the top level or strategic level of the company. This can be well-illustrated with the Company C example. This company has implemented various KM practices; the most important one is the development of employees' skills and knowledge.

Company C does not possess any formal KM plan of top management – everything is being done "from the bottom". Employees try to intuitively introduce KM solutions that are potentially needed in their opinions:

> Unfortunately we do not have a KM strategy. Everything is being done, so to say, bottom-up. So, nobody sets the goals and checks their achievement afterwards. And everything that we do, we do either from our experience or from somebody else's experience. We draw conclusions and try to do something with it. (Company C)

Additionally, usefulness determines not only the selection of tools, but also of knowledge that is being managed by those companies. The example of Company A manifests that. In case of this company, the criterion for knowledge to be managed is what appeared to be useful over the years for the company's operations:

> The criterion for collecting and managing knowledge is the past experience of what appeared to be useful since the setup of the company. So it is the usefulness, benefit. The usefulness of collecting this information, because each piece of information serves a purpose and is somehow applied, if not by its author, then by other people in the company. (Company A)

Secondly, the environment in which small companies operate and their situation are often subjected to many fluctuations that may concern several aspects. Some companies, as

potentially very innovative, might undergo rapid changes in their market. The example of Company K can be helpful to illustrate that. The company has introduced a great variety of KM practices and has built a culture of knowledge exchange. The chosen practices have resulted from the rising needs faced by the company. The speed of changes in the firm is very high and KM practices are correlated with these changes:

> Nearly every day, something different, new is being created here. Practically every month we have a new functionality. Practically every quarter we have a strategic change. It is very positive from the point of view of potential development, but also challenging. (Company K)

Also, workforce in small companies is subjected to fluctuations. The number of people hired increases if there are many customers (high workload) and decreases if the number of customers is reduced. Market situation influences significantly the size and employment of these companies, just like it does for other types of small enterprises (Rocha, 2012). Such firms find it difficult to hire many professionals on a regular basis. That is why, they often have a certain base of employees hired full-time and they cooperate with additional ones. Such a solution helps them to be flexible and use additional forces in case of higher number of orders. It also requires the application of different approaches to exchange knowledge between employees when, for example, there are 20 employees or more and when there are just a few workers. Some examined companies pointed out that they have undergone changes in the employment (mainly downsizing) and on this basis they can say that different KM solutions are required depending on company's size. For example, Company I has introduced several KM practices and considers building and supporting of employees' knowledge as the most crucial one. It has undergone changes in employment from 25 employees to 10 and it claims that, presently, it does not need any advanced technologies to manage its knowledge:

> Our firm is so small that all these advanced technologies are redundant. We all sit one by one, our desks are close, information is dispersed all around the company, on multiple computers. In a small companies, like ours, it happens in such a way that all the employees know about everything, because there is not so much to know. In each moment, we know at which stage we are. The number of topics we can undertake is not so high, because there are not many employees. In a large company, it does not function that way, as topics grow like mushrooms after the rain.

Company H also highlighted the easiness of knowledge exchange and flow on a non-formal basis in a small team:

> If we had more employees, we would have to introduce certain procedures for knowledge management, but when there are less people, we can for example easily organize the meeting of all the employees (to exchange knowledge). (Company H)

The same rationale stands behind an extensive use of KM in large organizations – the number of employees heavily determines the solutions that are required and applied. As Hutchinson and Quintas (2008) stated "the larger the organization, the greater the potential challenges to some of the key knowledge processes such as knowledge sharing". If we assume that small KIBS rely heavily on their employees' knowledge, this knowledge needs to be extracted, codified and exchanged somehow. If the number of employees changes, ways to do that change as well.

Thirdly, small companies often require specific, highly adaptive tools for managing their knowledge: they test new solutions, modify the existing ones to their own needs, etc. For instance, Company E often tests new ways of managing knowledge – there is a constant search for new tools that can improve their KM processes:

> We are a company that tests a lot (of KM solutions). If something interesting appears, we try to test it in the company, and if it does not function well, we test something else or wait for a while. So we test something all the time. (Company E)

Knowledge that innovative companies base on quickly becomes obsolete, so they constantly need to search for the new one and for the new tools suitable for its management. As Consoli and Elche-Hortelano (2010) stated in the case of KIBS, "The core competence common to all KIBS is the integration of different forms of knowledge into

tradable output; however some KIBS do not suppose changes on the content of information but merely the maintenance of infrastructures for its transmission while other KIBS operate transformations with the goal of trading newly created information packages".

Fourthly, as mentioned, small companies are often not aware of KM as a defined field (i.e. concepts, classifications, etc.). KM is not included in the typical competencies of small companies. They generally start with a problem to be solved (e.g. "we must manage our projects more effectively", or "we must collaborate with one another", or "we have a problem with employees' turnover") and they may later recognize that some of these problems can be perceived in terms of a generic notion of KM. An example can be Company D. Employees of this company are located all over Poland, and this has raised the need to place knowledge in a system available to all of them. As a result, various types of knowledge are codified and placed in a system available to particular users–employees:

> We keep everything in the system. These are financial data, data on customers, on projects, on everything I would say. Nothing is stored in a paper form, apart from agreements that need to be signed [. . .] We need to do it this way to operate. (Company D)

It can be said that, for this company, KM systems and methods have been designed to fit the daily challenges/requirements of business operations.

Going further, some small companies may adapt some KM ideas or tools. A case study presented by Dotsika and Patrick (2013) confirms this approach – Mapa company analysed in their study initially manifested *ad hoc* and informal approach to KM, based on verbal communication. Later on, due to changing demands, they introduced MapaWiki. In the case of this study, Company L manifested a similar approach. This company has introduced several KM solutions and it has experimented with the ways of managing its knowledge by changing and expanding them over time. The solutions that have been applied are dedicated to the needs of particular departments and they are modified if a need arises. Some practices have also been evolving, e.g. the e-learning system:

> We have created our e-learning system as a way of building from the bricks. Over the years we have done many steps in its creation and now it has a completely different role than at the beginning of its creation. (Company L)

Fifthly, small companies do not have the resources to invest in full-time employees explicitly assigned to KM activities. It is broadly acknowledged that SMEs generally suffer from the lack of resources (Wong, 2005), including human resources. Therefore, initiatives regarding KM practices are taken by people working in other areas, and with no explicit KM plans. It can be illustrated with the example of Company F. They lack time for formalized KM and apply only simple solutions (e.g. database of past projects/clients and suppliers). Such solutions help them in being more competitive and are time-saving. They choose appropriate KM solutions fulfilling their needs, without labelling them as KM:

> In a small company there is no time for deep analysis of KM practices. You need to work here to be able to issue invoices, so KM is very minimalistic. It sometimes takes us nowhere, because somebody does not know something important. But we do have some basic knowledge practices worked out. (Company F)

All the above arguments constitute a potential explanation why small companies are more unlikely to have a planned KM approach, differently from other management fields (e.g. accounting, marketing).

5.3 What particular features can this approach have in those companies?

By analysing the key elements of the KM approaches adopted by the companies, it is also possible to detect the main features of these approaches.

First of all, KM activities or practices undertaken by those firms often result from the real (practical/working) knowledge needs identified at the regular employee's level, rather than from detailed analysis and planning carried out at the top level; in other words, a bottom-up development predominates (Bolisani *et al.*, 2014). It results also from the fact that small entities have very limited resources (e.g. financial, human, organizational) that they can devote to a KM initiative and, therefore, they very wisely commit to such undertakings.

Secondly, there is no unified approach followed by companies; each of them chooses appropriate tools and solutions that can be useful at a certain stage. It can be claimed that these solutions are often independently introduced, constituting a puzzle-like, fragmented infrastructure. It originates also from the fact that small companies are a very heterogeneous group and they apply diversified methods of managing their knowledge (Durst and Edvardsson, 2012). Under a "trial-and-error" perspective towards KM, the solutions that prove to be useful or that, for some reason, fit the particular situation of a company are selected, adopted and possibly developed or spread to the rest of the company.

This also means that there may be changes in the way a company perceives their KM initiatives. In some companies it was clearly stated that some solutions that were applied in the past are no longer in use and a new approach is necessary (e.g. Company L). The planning horizon for KM initiatives is relatively short, as such initiatives are often subjected to fluctuations and changes.

Table II summarizes the general characteristics of emergent KM approach as found in our study.

6. Conclusion

6.1 Findings

As it can be noted, although all the analysed companies have introduced various KM practices, none of them uses a deliberate, formal or planned approach to KM. Hence, knowledge activities implemented by these companies can be labelled as "emergent KM approach", as they match with the definition and criteria described in Section 3.

The research findings confirm that emergent KM approaches exist and can be found in small companies. Even companies like small KIBS, which rely largely on their capabilities to manage knowledge, appear to adopt an emergent approach: this occurs in the investigated firms, where there is no formal KM approach, despite the fact that they have all introduced various KM practices. There are several reasons why small companies choose an emergent KM approach, e.g. the orientation towards day-by-day problems and

Table II Characteristics of emergent KM approach

Characteristics	*Description*
Origin	Real (practical/working) knowledge needs
Restraints	Limited resources
Implementation path	Bottom-up
Degree of formality	Low
Familiarity with KM language	Generally basic
Universality	Often case-specific
Approach	Trial-and-error
Scope of action	Local, expanded to global, if useful/suitable
Architecture	Puzzle-like, fragmented (i.e. building blocks that may be or may be not connected to one another)
Planning horizon	Short-term
Adaptability	KM solutions survive if they are flexible and can change over time with company's needs

knowledge needs, the bottom-up approach to problem-solving, the need for flexibility and the difficulty to invest in resources exclusively devoted to KM.

6.2 Implications

The above has important implications for both research and practice. In terms of research, the findings show that there may be the need to better define KM approaches that fit smaller companies (not only in the KIBS sector). The notion of "emergent approach to KM" can be useful to help researchers identify and analyse the rich variations of KM-based approaches that can be found in such companies.

In addition, there are two main implications for the practice. The first one is that, although an emergent approach may be seen as completely unplanned, companies should learn how to be aware of their KM practices and, once they emerge, how to develop them properly and, if necessary, to incorporate them into regular processes. The second one is that there may be the need to introduce KM in the typical background of executives, and especially of those that work in small companies (e.g. how KM fits into an organization, what are KM processes, existing tools and practices). This is essential for allowing them to recognize the KM needs and practices that emerge "from the bottom" and later to systematize them and make them an established part of the business.

6.3 Limitations

The study has some obvious limitations. The first one concerns the small sample size. Twelve case studies do not constitute a large research material, although similar number of cases or interviews had been analysed in other qualitative KM research on small companies (McAdam and Keogh, 2004; Nunes *et al.*, 2006; Bishop *et al.*, 2008). Another limitation originates from the fact that the study examined companies of the KIBS sector, which might restrict the applicability of its results to less knowledge-intensive companies, like, e.g., from mature manufacturing sectors. Thirdly, the study is of preliminary character and further research is required to examine extensively emergent KM approaches and their role in small companies' functioning.

6.4 Suggestions for further research

The potential areas of further research could be as follows. Firstly, quantitative study on emergent KM approaches could help answer the question of how popular this approach is among small companies. Secondly, it would be valuable to examine why small and medium-sized companies may implement this approach. Thirdly, it would be reasonable to check what factors determine the selection of emergent KM approach, together with the ones supporting or hindering this process. It would be also advisable to examine emergent KM approach not only seen with the eyes of owners/managers of small firms, but also from the perspective of regular employees. Such a study would definitely broaden the state of the art on emergent KM approach. Finally, a classification of various emergent KM approaches should be examined and developed. It would help in adjusting the KM approach to the plethora of small companies' needs.

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References

Alvarez, I., Cilleruelo, E. and Zamanillo, I. (2015), "Is formality in knowledge management practices related to the size of organizations? The Basque Case", *Human Factors and Ergonomics in Manufacturing and Services Industries*, Vol. 26 No. 1.

Bishop, J., Bouchlaghem, D., Glass, J. and Matsumoto, I. (2008), "Ensuring the effectiveness of a knowledge management initiative", *Journal of Knowledge Management*, Vol. 12 No. 4, pp. 16-29.

Bolisani, E., Giuman, L. and Scarso, E. (2014), "Emergent knowledge management in SMEs: a case study", in Carlucci, D., Spender, J. and Schiuma, G. (Eds), *Proceedings of IFKAD*, *Matera, Italy*, pp. 1517-1537.

Bozbura, F.T. (2007), "Knowledge management practice in Turkish SMEs", *Journal of Enterprise Information Management*, Vol. 20 No. 2, pp. 209-221.

Bozkurt, Ö.Ç. and Kalkan, A. (2013), "Strategic focus in Turkish SMEs: emergent or deliberate strategies?", *Procedia-Social and Behavioral Sciences*, Vol. 99, pp. 929-937.

Burford, S., Kennedy, M., Ferguson, S. and Balckman, D. (2011), "Discordant theories of strategic management and emergent practices in knowledge-intensive organizations", *Journal of Knowledge Management Practice*, Vol. 12 No. 3.

Burnard, P., Gil, P., Stewart, K., Treasure, E. and Chadwick, B. (2008), "Analysing and presenting qualitative data", *British Dental Journal*, Vol. 204 No. 8, pp. 429-432.

Chan, I. and Chao, C.K. (2008), "Knowledge management in small and medium-sized enterprises", *Communications of the ACM*, Vol. 51 No. 4, pp. 83-88.

Consoli, D. and Elche-Hortelano, D. (2010), "Variety in the knowledge base of Knowledge Intensive Business Services", *Research Policy*, Vol. 39 No. 10, pp. 1303-1310.

Corso, M., Martini, A., Paolucci, E. and Pellegrini, L. (2003), "Knowledge management configurations in Italian small-to-medium enterprises", *Integrated Manufacturing Systems*, Vol. 14 No. 1, pp. 46-56.

Coyte, R., Riccieri, F. and Guthrie, J. (2012), "The management of knowledge resources in SMEs: an Australian case study", *Journal of Knowledge Management*, Vol. 16 No. 5, pp. 789-807.

Desouza, K.C. and Awazu, Y. (2006), "Knowledge management at SMEs: five peculiarities", *Journal of Knowledge Management*, Vol. 10 No. 1, pp. 32-43.

Donate, M.J. and Guadamillas, F. (2011), "Organizational factors to support knowledge management and innovation", *Journal of Knowledge Management*, Vol. 15 No. 6, pp. 890-914.

Dotsika, F. and Patrick, K. (2013), "Collaborative KM for SMEs: a framework evaluation study", *Information Technology & People*, Vol. 26 No. 4, pp. 368-382.

Durst, S. and Edvardsson, I.R. (2012), "Knowledge management in SMEs: a literature review", *Journal of Knowledge Management*, Vol. 16 No. 6, pp. 879-903.

Durst, S., Edvardsson, I.R. and Bruns, G. (2013), "Knowledge creation in small construction firms", *Journal of Innovation Management*, Vol. 1 No. 1, pp. 125-142.

Dwivedi, Y.K., Venkitachalam, K., Sharif, A.M., Al-Karaghouli, W. and Weerakkody, V. (2011), "Research trends in knowledge management: analyzing the past and predicting the future", *Information Systems Management*, Vol. 28 No. 1, pp. 43-56.

Edvardsson, I.R. (2006), "Knowledge management in SMEs: the case of Icelandic firms", *Knowledge Management Research & Practice*, Vol. 4 No. 4, pp. 275-282.

Edvardsson, I.R. (2009), "Is knowledge management losing ground? Development among Icelandic SMEs", *Knowledge Management Research and Practice*, Vol. 7 No. 1, pp. 91-99.

Edvardsson, I.R. and Durst, S. (2013a), "The benefits of knowledge management in small and medium-sized enterprises", *Procedia-Social and Behavioral Sciences*, Vol. 81, pp. 351-354.

Edvardsson, I.R. and Durst, S. (2013b), "Does knowledge management deliver the goods in SMESs?", *Business and Management Research*, Vol. 2 No. 2, pp. 52-60.

Edvardsson, I.R. and Oskarsson, G.K. (2013), "Knowledge management, competitive advantage, and value creation: a case study of Icelandic SMEs", *International Journal of Information Systems and Social Change*, Vol. 4 No. 2, pp. 59-71.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K. and Kyngäs, H. (2014), "Qualitative Content analysis: a focus on trustworthiness", *Sage Open*, Vol. 4 No. 1, pp. 1-10, available at: http://sgo.sagepub.com/lookup/doi/10.1177/2158244014522633

Fereday, J. and Muir-Cochrane, E. (2006), "Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development", *International Journal of Qualitative Methods*, Vol. 5 No. 1, pp. 80-92.

Ferguson, J., Huysman, M. and Soekijad, M. (2010), "Knowledge management in practice: pitfalls and potentials for development", *World Development*, Vol. 38 No. 12, pp. 1797-1810.

Ferraresi, A., Quandt, C.O., dos Santos, S.A. and Frega, J.R. (2012), "Knowledge management and strategic orientation: leveraging innovativeness and performance", *Journal of Knowledge Management*, Vol. 16 No. 5, pp. 688-701.

Handzic, M. (2004), "Knowledge management in SMEs", *Asia-Pacific Tech Monitor*, Vol. 10 No. 1, pp. 29-34.

Hsieh, P.J., Lin, B. and Lin, C. (2009), "The construction and application of knowledge navigator model (KNM): an evaluation of knowledge management maturity", *Expert Systems with Applications*, Vol. 36 No. 2, pp. 4087-4100.

Hudson, M., Smart, P.A. and Bourne, M. (2001), "Theory and practice in SME performance measurement systems", *International Journal of Operations and Production Management*, Vol. 21 No. 8, pp. 1096-1116.

Hutchinson, V. and Quintas, P. (2008), "Do SMEs do knowledge management? Or simply manage what they know?", *International Small Business Journal*, Vol. 26 No. 2, pp. 131-134.

Joe, C., Yoong, P. and Patel, K. (2013), "Knowledge loss when older experts leave knowledge-intensive organisations", *Journal of Knowledge Management*, Vol. 17 No. 6, pp. 913-927.

Khatibian, N., Hasan Gholoi Pour, T. and Abedi Jafari, H. (2010), "Measurement of knowledge management maturity level within organizations", *Business Strategy Series*, Vol. 11 No. 1, pp. 54-70.

Krippendorff, K. (2004), *Content Analysis: An Introduction to its Methodology*, Sage, Thousand Oaks, CA.

Lara, F., Palacios-Marques, D. and Devece, C.A. (2012), "How to improve organisational results through knowledge management in knowledge-intensive business services", *Service Industries Journal*, Vol. 32 No. 11, pp. 1853-1863.

Lopez-Cabrales, A., Pérez-Luño, A. and Cabrera, R.V. (2009), "Knowledge as a mediator between HRM practices and innovative activity", *Human Resource Management*, Vol. 48 No. 4, pp. 485-503.

McAdam, R. and Keogh, W. (2004), "Transitioning towards creativity and innovation measurement in SMEs", *Creativity and Innovation Management*, Vol. 13 No. 2, pp. 126-139.

Mangiarotti, G. (2012), "Knowledge management practices and innovation propensity: a firm level analysis from Luxembourg", *International Journal of Technology Management*, Vol. 58 Nos 3/4, pp. 261-283.

Meroño-Cerdan, A.L., Lopez-Nicolas, C. and Sabater-Sánchez, R. (2007), "Knowledge management strategy diagnosis from KM instruments use", *Journal of Knowledge Management*, Vol. 11 No. 2, pp. 60-72.

Migdadi, M. (2009), "Knowledge management enablers and outcomes in the small-and-medium sized enterprises", *Industrial Management & Data Systems*, Vol. 109 No. 6, pp. 840-858.

Mintzberg, H. and Waters, J.A. (1985), "Of strategies, deliberate and emergent", *Strategic Management Journal*, Vol. 6 No. 3, pp. 257-272.

Muller, P., Gagliardi, D., Caliandro, C., Bohn, N.U. and Klitou, D. (2014), *Annual Report on European SMEs 2013-2014 – A Partial and Fragile Recovery*, Brussels: European Commission.

Nunes, M.B., Annansingh, F., Eaglestone, B. and Wakefield, R. (2006), "Knowledge management issues in knowledge-intensive SMEs", *Journal of Documentation*, Vol. 62 No. 1, pp. 101-119.

Ogiwara, N., Young, R., Talisayon, S. and Bunyagidj, B. (2010), *Practical Knowledge Management Guide for SMEs Owners and Managers*, Asian Productivity Organization, Japan.

Palacios-Marqués, D., Peris-Ortiz, M. and Merigó, J.M. (2013), "The effect of knowledge transfer on firm performance: an empirical study in knowledge-intensive industries", *Management Decision*, Vol. 51 No. 5, pp. 973-985.

Ribière, V. and Christian, W. (2013), "10 years of KM theory and practices", *Knowledge Management Research & Practice*, Vol. 11 No. 1, pp. 4-9.

Rocha, E.A.G. (2012), "The impact of the business environment on the size of the micro, small and medium enterprise sector; preliminary findings from a cross-country comparison", *Procedia Economics and Finance*, Vol. 4, pp. 335-349.

Salojärvi, S., Furu, P. and Sveiby, K.E. (2005), "Knowledge management and growth in Finnish SMEs", *Journal of Knowledge Management*, Vol. 9 No. 2, pp. 103-122.

Sanz-Valle, R., Naranjo-Valencia, J.C., Jiménez-Jiménez, D. and Perez-Caballero, L. (2011), "Linking organizational learning with technical innovation and organizational culture", *Journal of Knowledge Management*, Vol. 15 No. 6, pp. 997-1015.

Sparrow, J. (2005), "Classification of different knowledge management development approaches of SMEs", *Knowledge Management Research & Practice*, Vol. 3 No. 3, pp. 136-145.

Suter, W.N. (2012), *Introduction to Educational Research: A Critical Thinking Approach*, 2nd ed., Sage Publishing, Thousand Oaks, CA.

Torrés, O. and Julien, P.A. (2005), "Specificity and denaturing of small business", *International Small Business Journal*, Vol. 23 No. 4, pp. 355-377.

Uit Beijerse, R.P. (2000), "Knowledge management in small and medium-sized companies: knowledge management for entrepreneurs", *Journal of Knowledge Management*, Vol. 4 No. 2, pp. 162-179.

Van den Hooff, B. and Huysman, M. (2009), "Managing knowledge sharing: Emergent and engineering approaches", *Information & Management*, Vol. 46 No. 1, pp. 1-8.

Vitari, C. (2011), "The success of expert recommending services and the part played by organizational context", *Knowledge Management Research & Practice*, Vol. 9 No. 2, pp. 151-171, available at: www.palgrave-journals.com/doifinder/10.1057/kmrp.2011.6

Wee, J.C.N. and Chua, Y.K. (2013), "The peculiarities of knowledge management processes in SMEs: the case of Singapore", *Journal of Knowledge Management*, Vol. 17 No. 6, pp. 958-972.

Wei Chong, C., Choy Chong, S. and Chew Gan, G. (2011a), "Inter-organizational knowledge transfer needs among small and medium enterprises", *Library Review*, Vol. 60 No. 1, pp. 37-52.

Wei Chong, C., Choy Chong, S. and Chew Gan, C. (2011b), "The KM processes in Malaysian SMEs: an empirical validation", *Knowledge Management Research & Practice*, Vol. 9 No. 2, pp. 185-196.

Wong, K.Y. (2005), "Critical success factors for implementing knowledge management in small and medium enterprises", *Industrial Management & Data Systems*, Vol. 105 No. 3, pp. 261-279.

Wong, K.Y. and Aspinwall, E. (2004), "Characterizing knowledge management in the small business environment", *Journal of Knowledge Management*, Vol. 8 No. 3, pp. 44-61.

Wong, K.Y. and Aspinwall, E. (2005), "An empirical study of the important factors for knowledge-management adoption in the SME sector", *Journal of Knowledge Management*, Vol. 9 No. 3, pp. 64-82.

Yin, R.K. (1989), *Case Study Research: Design and Methods*, Sage Publishing, Beverly Hills, CA.

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