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## How to deal with knowledge in small companies? Defining emergent KM approach

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**Abstract:** This paper examines the concept of emergent KM approach in small companies. The origins of consideration are grounded in the theory of strategic management literature and in particular the distinction between deliberate versus emergent approach towards strategic planning. Using the methodology of case study, we carried out an explorative research to analyse the characteristics of KM approach in two small companies located in Italy and in Poland. Both companies appeared to adopt an emergent KM approach and therefore, a detailed analysis of this phenomenon was feasible, as well as description of its main features. On the basis of the research results, implications for both managers and researchers are discussed.

**Keywords:** knowledge management; KM; KM approach; emergent KM; definition; SMEs; case study; ICT services providers; Italy; Poland.

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## **1 Introduction**

The body of research about knowledge management (KM) in SMEs is still scarce (Durst and Edvardsson, 2012; Dwivedi et al., 2011) in comparison with the vast number of studies concerning large companies. The relatively few contributions, however, seem to agree on the fact that SMEs do not manage knowledge the same way as their larger counterparts (Chan and Chao, 2008; Wee and Chua, 2013). In particular, SMEs, even when they are aware of the importance of their knowledge, usually follow an unplanned, unsystematic and informal approach to KM (Edvardsson, 2006, 2009; Hutchinson and Quintas, 2008). In the light of this, the paper aims at deepening our understanding of the way SMEs deal with their knowledge assets. Specifically, it intends to investigate the nature of the approach that small businesses adopt when setting up, implementing and using KM tools and practices.

The paper illustrates and discusses the KM experience of two small ICT services providers, one Italian and the other one Polish. The unit of analysis is represented by the set of KM solutions and practices implemented by these two companies in the last decade. The cases allow identifying and defining what we call an ‘emergent KM approach’.

The study covers two research areas regarding KM in SMEs that, according to Durst and Edvardsson (2012), need more attention and development, i.e. longitudinal studies (namely, studies that analyse the dynamics of a phenomenon over long periods of time) and realistic lens (namely, studies that explicitly focus on the peculiar characteristics of SMEs). As regards the first point, the case studies cover a time span of about a decade. During this period, the KM approach of the companies has changed and intensified due to two factors: first, the companies have faced new challenges, and second, new tools for managing knowledge have become available. Concerning the second point, the analysis has adopted a realistic view of the investigated companies by taking into account the limited resources they have, their particular organisational structure, and the specific business environment where they operate.

Since the study concerns only two cases, the idea is not to draw conclusions of general validity, but rather to highlight specific aspects of the ways used by SMEs to approach KM. The findings lay the grounds for certain suggestions for both researchers and executives, as well as for new hypotheses about the peculiarities of KM in SMEs, which can be tested in future studies.

The paper is structured as follows. The next section proposes a brief review of the literature on KM in SMEs. The third section examines various approaches to KM identified in the previous studies. Section four illustrates the research methodology adopted, while section five describes the findings of the empirical investigation. The sixth section discusses what originates from the study, and the last section makes some conclusive comments, illustrates the limitations of the study, and suggests possible future research directions.

## **2 Managing knowledge in small companies**

KM initiatives are gaining an increasing attention not only of large companies but also of their smaller counterparts (Bozbura, 2007; Wei et al., 2011). In point of fact, KM can provide several benefits to SMEs, such as better communication, improved customer satisfaction, better external relationships, faster response times, enhanced innovativeness, greater efficiency in processes and procedures, and reduced risk of loss of critical capabilities (Edvardsson and Durst, 2013a; Migdadi, 2009). In this regard, Dotsika and Patrick (2013) highlight that the implementation of KM initiatives in SMEs may be even more crucial, as knowledge can be their single key resource.

In spite of this, the literature that examines KM in SMEs is still scarce and provides fragmented insights (Durst and Edvardsson, 2012; Dwivedi et al., 2011; Ribière and Christian, 2013). Also, different approaches to KM by SMEs have been identified (Sparrow, 2001).

In any case, many authors agree that it would be wrong to assume that SMEs can practice KM in similar ways to large organisations (Desouza and Awazu, 2006): KM in small businesses cannot simply be reduced to scaled-down versions of large companies’ experience (Wong and Aspinwall, 2004). Actually, SMEs have some unique features

(e.g. limited financial and human resources, flat structure, informal managerial styles, centralised decision-making, focus on day-by-day business operations) that deeply influence the way they can approach KM. Also, as Nunes et al. (2006) affirm, managers and owners of SMEs are not prepared to invest highly in long term KM goals, which value added they may find difficult to assess. Thus, KM activities in SMEs tend to be performed in an informal way, and are not necessarily supported by purposely designed ICT systems.

Hutchinson and Quintas (2008) state that to understand KM in SMEs it is necessary to look beyond the introduction and practice of formal or nominal initiatives. SMEs, in fact, without 'being fluent' in the language of KM or even being unable to recognise their behaviours as KM, are often proactively engaged in what can be called 'informal KM practices'. Also, Coyte et al. (2012) underline that strategy and governance of knowledge processes in SMEs is not formalised. In an earlier paper, Edvardsson (2006) had already noted that explicit KM strategies in SMEs were lacking, and many small companies treated KM at an operational level, i.e. at the level of systems and tools. Lastly, Edvardsson and Durst (2013b) deem that, compared to larger firms, SMEs tend to be more oriented towards the management of tacit knowledge. They are also less successful in sharing knowledge by means of formal systematic approaches. To sum up, in SMEs, KM can be practised even if it has not been recognised as such (Salojärvi et al., 2005).

### 3 Emergent approach to KM

The analysis carried out in the previous section raises a key question: to understand KM practices in small businesses, do we need a new concept of KM and new interpretive frameworks that are different from those normally adopted in the case of large firms? The answer to this question can be the approach to KM that can be called 'emergent'.

The idea of 'emergent KM development, especially when it comes to SMEs, has been already proposed in the literature, but in a fragmented way. For example, as particularly regards actions and mechanisms that support knowledge sharing in an organisation, Van den Hooff and Huysman (2009) distinguish between engineering and emergent approach. 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 organisation by providing goals, context and means to do so in a 'top-down fashion'. In an *emergent* approach, these processes are seen under a practice-based perspective. Here the situated and collective nature of learning is stressed: organisational members learn from and with each other during their day-by-day activities, and KM practices and tools 'emerge' from the bottom. Similarly, Sparrow (2005) refers to a contrast between an idea of KM 'emergent' development in small companies and those of 'investigative/diagnostic' and 'event-based' KM development.

There is, however, the necessity to define more precisely what an emergent KM approach is. To do that, it can be useful to refer to the strategic management literature, and particularly to the distinction between deliberate vs. emergent approach towards strategic planning (Mintzberg and Waters, 1985). A purely deliberate or planned approach to strategy can be defined as an explicit and rational formulation of goals, plans and means that originates from precise intentions of the company. In this case, all is generally decided by central leadership, progressively articulated in more detailed tasks

that involve different parts of the organisation, and backed up by formal controls in top-down logic. Essential pre-conditions are that the internal and external environment can be considered benign, controllable or predictable, and that there is full understanding, adhesion and acceptance of the different parts of the organisation to the various tasks and processes that the goals and plans require.

Conversely, in a perfectly emergent approach to strategic planning, actions result to be consistent over time, but in the absence of intentions, clear leadership, and predefinition of goals or plans. In other words, in an emergent approach, goals and plans of a company result from an ex-post formalisation and coordination of actions, decisions and tasks that have proven to be effective and beneficial to the organisation. Although, as Mintzberg and Waters (1985) highlight, a purely emergent approach is impossible in real life, there are situations that are (more or less) close to that abstract definition. Recent surveys (Bozkurt and Kalkan, 2013) support the idea that this is especially true in the case of small businesses.

In accordance with the mentioned literature, we define 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 contrasts to a *deliberate or planned* KM approach, where KM goals, methods, and tools are defined by the top management based on an analysis of company's needs, objectives and resources.

As defined, emergent KM approach is 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). The term 'informal' simply indicates that the set of KM practices and tools adopted by a company are not explicitly formalised in a structured plan. Indeed, informality can characterise the early stages of an emergent KM approach, but later there can be the need to put things in a formal way.
- The management of purely 'tacit knowledge' (Edvardsson and Durst, 2013b). Although tacit knowledge is often important in SMEs, small companies also have explicit components of knowledge to manage: hence, an emergent KM approach does not necessarily focus merely on tacit knowledge.
- The idea of progressively 'mature' KM. KM maturity models (e.g. Khatibian and Jafari, 2010) presume that a company becomes increasingly aware of and engaged in a more and more complete KM approach. Instead, with emergent KM, we assume 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 Research question and methodology**

Based on the definition provided in the previous section, this paper addresses the following research question:

- What are the characteristics of an emergent KM approach in SMEs?

Specifically, to answer that question we based on the experience of two small companies. We used the case study approach given the descriptive and exploratory nature of the research, and the complexity of the investigated issue (Leedy and Omrod, 2005). In particular, it can be seen as a revelatory case in Yin's (2003) terminology since it offers the opportunity for an in-depth analysis of internal features that are generally less accessible to outside researchers. The purpose of the case study approach is to answer a combination of 'how' and 'why' questions concerning the management of knowledge by small companies. The cases have been elaborated by using information provided by various people in the companies, and from documental sources. As regards the generalisation of the findings, the idea is not to draw conclusions of general validity, but rather to derive some implications concerning the approach followed by SMEs in the adoption of KM practices and systems, as well as to provide suggestions for further analysis or for implementation in similar situations. The unit of analysis is represented by the practices and projects to introduce and use KM that the companies have carried out in the last years to support their business activities.

#### **5 Empirical evidence**

##### *5.1 Adoption path in Company A*

Company A is a small ICT company located in the North East of Italy with 30 employees and five external collaborators; the annual turnover is about 5 million Euros. Company A designs and installs high-level custom-made IT platforms. Provided services include: cloud computing, data centres, virtualisation, and business continuity. The company is organised into five main departments: management, accounting, sales/marketing, delivery and support. The last two are its technical heart: the first one deals with design, development and implementation of new brand solutions, while the second provides technical assistance and maintenance of installed systems.

Company A has undergone a huge evolution in the last decade. Until 2003, it was a typical small company run by the owners who had little managerial competence. It worked only on a job-order basis, and provided ICT infrastructures. At that time, the company counted 12 people including the owners. These, being aware that the firm would not have been able to grow without taking on more managerial features, hired a skilled professional as chief executive officer. In addition, since the clients generally did not know how to install or manage their ICT platforms, the company started to sell them installation and maintenance services.

In those years, there was no need for project documentation: the information coming from the product catalogue was sufficient. After about five to six years, the business started to become more and more complex, and to involve design, delivery and maintenance of entire ICT platforms. It was a real leap, given that the business radically changed from spot commercial transactions to longer partnerships with customers that

started with an initial consulting activity, continued with design and delivery of the ICT solution, and next with operative customer support. So, at Company A, executives realised that it was important to start storing pieces of information and knowledge about the installed systems, especially to promote the effective exchange of knowledge between the ‘delivery people’ (those that design and install a system) and the ‘support people’ (who perform the post sales activity). The company began to collect information about every new installation, and to compile a written report for each system. The resulting document (called ‘*libretto di impianto*’ – book of the system) was intended to support knowledge exchange between the different parts of the company. Originally, this problem of KM was not treated nor solved in a structured way, but by means of a simple and intuitive paper archive.

The real first step towards a KM system dates back to around 2003, when Company A started to use Microsoft Exchange Server to share public folders and e-mails about new installations. This tool had some limits: especially, it was difficult to classify, locate and understand a specific piece of knowledge. This was a problem, because when people make big efforts to store information and knowledge, but such efforts turn out to be useless because knowledge cannot be easily retrieved, the risk is that the instrument is quickly abandoned. Also, the application was very flexible, but this increased confusion among users. The public folders of Microsoft Exchange are a simple way to store and share e-mails, and provide well known search functions (by text, date, sender, subject, etc.). But since everybody were free to write and manage e-mails the way they preferred, it was practically impossible to locate the needed information. The company tried to establish some usage rules (e.g. pre-defined objects to specify for any new e-mail, kind of message text to include in specific circumstances), but with no significant results, and Microsoft Exchange was thus abandoned. The public folders and their content were preserved to save the stored knowledge and possibly migrate it later into a new storage; but in the end this never occurred because this migration was a big technical problem and there was little time to deal with it.

To overcome the limitations of Microsoft Exchange, the company adopted Owl Intranet Engine, a basic Content Management package. This tool was chosen by considering that the actual owners of the useful knowledge were not the ‘internal’ staff (i.e. people that work in the company offices) but rather the technicians, who carried out the installations materially at the client’s site. In point of fact, most of the critical information is collected on the ground, by those who do the work. Owl was a web-based tool that allowed getting the information at any time, and in a shared way. However, given the huge amount of stored data, the tool soon began to cause problems. To simplify its use, a taxonomy to classify documents was created: there was a classification tree divided into two parts (one for ‘the products’ – i.e. ICT components, and the other for ‘the customer installations’). The idea was that technicians should keep a record of their actions in a free format; later, the information had to be reworked and stored in the second branch of the tree in a more structured format. Hence, the company identified two stages of knowledge processing: a first phase of knowledge collection, where people wrote notes freely, and a second of elaboration of the collected knowledge, in order to make it usable by others. This was however complicated by the way Owl indexed topics: searches, in fact, yielded ‘false positives’ or unsatisfactory results. In addition, documents could be of different kinds: texts, files, configuration plans, datasheets, images, zip files, pdf files, links to web pages, and some more. This made it difficult to integrate them all in a common classification framework.

These first experiments showed that developing a KM system that focuses on a particular technology and then fitting it to the flows of knowledge in the organisational processes may result in an ineffective use. In view of these unsatisfactory results, the company began to consider other approaches and tools. To facilitate the flexibility of KM, it was decided to focus on systems that allowed dynamic templates for uploading information contents, document revisions, process workflows, and so on. Initially, a specialised piece of KM software, Knowledge Tree, was considered. This is a complete Enterprise Content Management suite with a workflow engine, indexing, metadata management, and access control. However, after some reflections and tests, the company eventually decided to adopt a wiki system, that has similar features of Knowledge Tree but is free, and more user friendly. The decision was also based on the fact that wikis retain all the information that is uploaded (even when it is unstructured), but they still preserve some logical order so that contents are retrievable and usable for the daily work. Furthermore, with a wiki, operational logics and content management can be decided in a shared manner, and is modifiable dynamically.

The present version of the wiki used at Company A is based on MediaWiki, the free open source wiki software which is also used by Wikipedia. It was introduced in the company in 2009, by two members of the support department (its head – who is also one of the company's shareholders – and a young new employee). The attempt was to make the handling of knowledge contents that are 'really' needed by various people collaborating in a project with a client more efficient and efficacious. The first version was designed for the technical staff, so it just included technical contents. Later on, in 2013, it was extended to the sales department. A recent survey of the employees' opinion confirms that the wiki is a success: they indicated the wiki as their main source of knowledge.

There is no space here to dwell on the technical characteristics of the system; only a few lines will suffice to describe it. The wiki portal is split into two different 'sub-portals': one for the technical staff (delivery, technical committee, and support) and the other for the commercial staff (sales force). Both portals are, however, accessible by all company users. The technical part has, mainly, knowledge contents related to existing and past installations. The commercial part contains log-in data for accessing vendors' websites and for processing requests for offer. However, the wiki is flexible and allows uploading different kinds of content. This is vital, because the users need to transfer and retrieve knowledge that can have different forms: technical data, but also pictures, explanations, codes, and so on.

Even though it is difficult to use a pre-defined format for all the potential contents that must be uploaded, the company decided to design some templates to help people upload new contents. This preserves the flexibility in the way people can insert contents, but on the other hand it allows quicker retrieval. Also, a pre-defined classification of contents in different sections is used. This classification derives from the business experience, and is specific to the company's particular way of working. Another important feature of the wiki is that it allows editing the contents inserted by others, and to keep track of all the changes. Recently, some functionalities have been added to simplify its use, such as a word-like editor and a printing facility that allows printing booklets in a pre-defined format.

In the design of the wiki, a key role was played by the support department that was the actual promoter. Indeed, the need to collect and store information about client installations originated from this department which must resolve maintenance requests



and hence needs knowledge about the systems that other people have formerly installed. Also, it was crucial that one of the members of this department was also one of the owners of the company; in addition, the propensity of the CEO towards experimentations – at least in a controlled way (i.e. with a certain degree of freedom but avoiding making big mistakes) – gave a positive impulse to the entire process.

Specifically, the two people that promoted the wiki system were also those that have technically implemented and configured the various KM tools in the course of time: they configured the software tools, provided the taxonomies, created the templates, added the needed functionalities, and so on. Their competence in computer science was important, as well as their direct involvement in the daily work of the company: they have the sensibility to capture the essential requirements and problems of the KM processes. In fact, despite their direct involvement in KM, the two promoters continue to carry on their daily work in the support department. In other words, there is still nobody formally in charge of the KM system. There is even nobody supervising the uploads of new contents: here, there is a sort of ‘communitarian control’ of the pieces of knowledge inserted in the system, as usually happens for wikis. There is only an employee that performs a check of the uploaded technical information, because it is important to give consistency and fairness to the content. This employee is, however, not an ‘expert’: his task is just to read the documentation and assess if it is understandable by any other person.

Another important success factor of the wiki system as a KM tool was its usefulness and user-friendliness: indeed, low usability and low integration into daily business processes can explain the failure of the previous KM systems and their abandonment. In this regards, it is worth noting that it was just the experimentation that made it possible for the company to finally select the appropriate solution, in a trial-and-error approach. However, the technical people are advantaged in using the wiki, not only thanks to their familiarity with ICT applications, but also because the use of the instrument does not affect the way they work, and therefore does not imply special changes in internal processes. Quite different is the situation in case of the sales staff that is less accustomed to document their daily activities in a systematic way. This is the main reason why commercial employees were involved in KM projects only later. To induce the commercial staff to use the wiki, some initial contents that could be useful to them had to be made available in advance.

Another success factor of the system, especially crucial for a small company, was the availability of open source software like MediaWiki. High licence costs would be probably detrimental, while open source software allows free experimentation at low risk.

## *5.2 Adoption path in Company B*

Company B is a small ICT company located in the North of Poland hiring 29 employees and several collaborators. It mainly designs, installs and launches electronic security and safety systems, and provides maintenance services and components. Its clients are companies of various sectors (banking and finance, energy, construction, etc.), ranging from small to large ones and located all over the country. The company was founded 30 years ago, when the political and economic transformation was just starting in Poland. It presently employs 29 workers in five departments, i.e.: administration, service preparation, service maintenance, service design, and service implementation. The last two departments are the key ones in the company, as they prepare solutions for customers and implement them on site.

The company has been gradually developing and gaining new customers. In 1990, it started the cooperation with a major bank in Poland, by installing and maintaining security systems in its facilities. This opened the road to further cooperation within the Polish banking sector. The company has six major partners, providing technologies and solutions necessary for service delivery. The company has been managed by the same owners since its establishment. It has a legal form of private ownership. Two persons manage the company, one is the director and the second one is the chairman of the board of directors.

Since the very beginning, the company needed to keep certain knowledge and documentation in its seat, for various reasons. Firstly, in case of a problem with an implemented solution, the company has to identify the complete project documentation and the process of its design and implementation. All systems have a contractual period of supervision, so the company has to possess all the necessary materials about each solution. Secondly, there are national security regulations which the organisation had to respect, which induced the storage of certain types of documents. Thirdly, sometimes customers want to have their service further developed, and a detailed documentation of its previous delivery is required. Last but not least, occasionally there are some conflicts between the company and the customer about various aspects of the service provided, and in such a case explicit documentation is a big support.

Taking into account all the above reasons, the company needed to find a way to manage knowledge and information about its services, their design, delivery and maintenance. As the company started its operations 30 years ago, when the internet and IT tools were not so developed, a paper archive was set, where all the documents were stored. At that time, the company did not deal with many complicated projects and the volume of knowledge to be stored was not large. It was clearly not very convenient to search for paper materials on certain customer or service delivered, but this system was used for many years.

With the increasing availability of computers, employees started using them to greater extent for creating and storing knowledge contents. Documents were created in an electronic form and over the years this form became more popular. Furthermore, with the development of the internet, employees started using e-mails as a tool for information and knowledge exchange. Although files were easily exchanged via e-mail, the problem of file size appeared at a certain stage. To solve it, employees started using external disks for transferring large files between each other. This solution, however, was not very efficient.

The situation changed in 2011, when the company began carrying out much larger projects which involved more people at various stages. Designing of smaller projects could be handled by one person (in the past, it was just one person that would deal with a project), but larger-scale projects required the engagement of a greater number of staff from the stage of service design, through preparation for implementation, implementation itself and preparation of documentation. Therefore, it was necessary to have a place where employees would keep their knowledge and make it available to others, and to implement some knowledge exchange tool that would help in this process of larger-scale project delivery. The employees of the service design and service implementation departments were the first to note this need, and they started to look for a solution. The natural choice was to set an internal platform with disk space, where employees would be able to store documents and files for their own use and for the use of other staff. This solution was satisfactory from the point of view of employees (i.e. easy to use and

fulfilling their needs) and also from the point of view of management (namely, inexpensive and easy to implement). What is worth to underline here is that it was the employees that noted the need and implemented the solution: the management was involved only at the stage of costs acceptance.

At first, the solution was available only in the company, with access via computers located in place. Later on, employees manifested the need to access the repository of knowledge from outside the company, i.e. during implementations at customers' site or when working from home. This need was highlighted by employees who delivered services to customers – sometimes they missed some crucial piece of knowledge of the customer's installation. One of these employees designed the solution: a tool for accessing the knowledge repository via virtual private network (VPN). It allowed searching for and downloading the necessary knowledge also from outside the organisation.

Presently, this platform can be accessed by all the people working in the company or outside and there are no restrictions or limits of access. Theoretically, each person from the organisation can gain access to all the files and folders. Initially, when the platform was introduced, it was the employees of the service design and service implementation departments that used it to the greatest extent. Later on, service maintenance and service preparation departments started using it as well. As the last group of users, administration department joined the platform. Each group uses it for their own purposes and in their own way.

With the growing complexity and scale of realised projects, it became necessary to exchange knowledge between employees more often and with the help of additional tools. Sometimes when a problem occurred during an installation at a customer's firm, the employee had to get back to the company because he was not able to solve the problem by himself and needed the colleagues' support. It was necessary to find a way to allow sharing knowledge and expertise via the internet in real time. As a solution, TeamViewer was introduced. It helped in sharing knowledge of experts, using their support not only during implementations, but also during designing and maintenance activities. Its implementation was the idea of the same employee who designed the VPN solution – a person dealing with installations and also serving as an IT specialist in the company. TeamViewer is a professional software suite used for remote access, online meeting and online presentation.

Among the remarkable points and success factors of the KM roadmap in Company B, one is the key role played by the employee who designed the KM solution properly fulfilling the knowledge needs, and practically implemented it. More generally, it should be specified that the need to implement certain KM solutions originated from two departments – service design and service implementation. These are the core departments in the organisation as they deliver solutions to be implemented to customers, and have the greatest need to store and exchange knowledge. A great importance in the successful identification of knowledge needs and their fulfilment has the management style practiced in the company. There is a very broad delegation of duties and power in the company. The management does not interfere in the way employees perform their tasks: it is assumed that they do their best and there is no need to control them. That is why the introduction of various KM solutions, in a trial-and-error approach, was possible without the delays usually connected with convincing the management. Another factor that supported the implementation of the KM solutions was the fact that many employees are IT literate, so they got acquainted with the KM systems quite easily.

As far as some obstacles to the implementation of KM solutions are concerned, there was a small resistance by some employees not willing to use the common platform at the initial stage. They were afraid that they would waste time or that some of their files might be missing. These reservations dropped down when employees noted the benefits of the KM tool and observed the process of file placement. Another problem is the way files are named and categorised on the platform. Each employee does it in his own way, which makes searching for appropriate piece of knowledge quite a challenge. This could be easily overcome by the introduction of a common system of files naming and categorising, but according to employees, presently there is no such a need.

## 6 Discussion: KM in SMEs as emergent practice

There are several issues that need to be highlighted on the basis of the research findings presented above. The practices of both companies correspond to what was defined as emergent KM approach: the two companies managed their knowledge without much planning and the KM tools were developed in response to the emerging needs of the business.

**Table 1** Characteristics of an emergent KM approach in the examined cases

<i>No formal plan:</i>	KM solutions emerged from the actual needs
<i>Business-driven KM:</i>	Strict connections with daily practices of employees
<i>Bottom-up approach:</i>	KM solutions developed by employees ‘at the bottom level’ and later validated and accepted by the management
<i>Trial-and-error:</i>	KM solutions selected through an experimental process
<i>Flexibility:</i>	Change of needs reflects on change of KM solutions
<i>Low-cost KM:</i>	No KM office; low investments; in-house design is preferred
<i>No preliminary reflections on KM:</i>	KM practices emerged from the ground; their recognition started later

This emergent approach to KM appears to have some specific characteristics (Table 1). Firstly, the solutions adopted by the examined companies were chosen on the basis of the current employees’ needs, and the management role in this process was not of a major importance. In both cases, the KM problems were noticed by employees working ‘on the ground’, and the solution suggested by themselves. Such an approach can be denoted as bottom-up (Baxter and Connolly, 2014). Actually, the top management has a role in the KM development, but this role is mainly that of accepting and establishing the KM solution in the company once this has proven to be effective for the business.

Secondly, the way of managing knowledge was an evolving one, definitely not planned or deliberate. It was even called a ‘budding’ approach by one of the respondents. Generally it built on the current needs and intuition of employees: if a KM solution was needed by employees, it was selected and implemented by them, in a progressive adaptation path. What is more, KM needs in these companies were changeable, which also influenced their KM approach. The solution that was in use for a while might appear to be unsuitable, and in that case a new solution is searched for. That is probably one of the reasons why SMEs lack a formal KM approach, as stated by Nunes et al. (2006): a too formal approach would hinder flexibility in changing KM solutions. In addition, in

both cases, under a 'trial-and-error' perspective towards KM, the solutions that prove to be useful or that fit the particular situation of a company are selected, adopted and possibly developed or spread to the rest of the company.

Also, SMEs cannot invest great resources in complex KM plans. In both cases, the adopted KM solutions were proposed by people that were not given a formal assignment on KM: they continued working in their main area, but at the same time they developed and suggested the KM solution. Investments in KM were kept as low as possible and internally designed tools were preferred.

Finally, there were no preliminary reflections on KM theories, models, concepts, or processes: the KM practices emerged from the ground, and only later their recognition as KM practices started.

## **7 Conclusions: implications and future research directions**

This study confirms that emergent KM approaches exist in small companies and are characterised by certain features. Both approaches described in the study are non-formal, bottom-up, originating from the daily practices and learning processes of company's regular employees. Solutions are chosen on the trial-and-error basis and when they do not fulfil company's KM needs anymore, they are modified or abandoned. Therefore, the definition of emergent approach proposed in Section 3 of the paper might be valid and well-illustrative for the ways of managing knowledge in small entities like those examined in our study.

The study presented in the paper has some obvious limitations. The first one concerns small sample size. Although the study is of exploratory character, analysing two cases is an obstacle in drawing general conclusions. Also, both companies are ICT services providers. Secondly, the study is of a preliminary character and additional analyses are required to examine extensively emergent KM approaches and their role in SMEs functioning.

Despite the limitations, several implications for both research and practice originate from the study. Firstly, the findings show that emergent KM approaches well fit the particular features of smaller companies. Secondly, 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 terms of practice, the study shows that although emergent KM approach is unplanned, companies should become aware of its characteristics to better understand it and be more efficient at its implementation. Additionally, KM education programs should include the topic of emergent KM, to make future managers and executives acquainted with the need to apply a different KM approach in small companies than the one used in larger firms.

On the basis of the above discussion, some potential research areas have been identified. First of all, the topic of emergent KM approach could be further examined in a qualitative study. This would allow identifying a variety of emergent approaches and classifying them in a taxonomy. Secondly, additional quantitative study on the popularity of emergent KM approach among SMEs could have significant practical implications for managers and owners of SMEs. Thirdly, as implementation of KM may serve as a source of competitive advantage for SMEs, such companies should be interested in the ways of successful application of KM approaches. Both quantitative and qualitative examination of emergent KM approach might give further insights into all these research areas.

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