The missing link in information and records management: personal knowledge registration

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Abstract

Purpose – The purpose of this paper is to present the findings of a research on collaborative personal knowledge registration (PKR). It seeks to explain the interrelationship between records professionals and human resource (HR) and training professionals, as well as the views of management and quality managers on collaborative PKR. It aims to raise awareness of records professionals as specialists in information management, including personal knowledge.

Design/methodology/approach – Qualitative methodology was used to conduct the research. It was a multiple-case study, covering 12 organizations in Iceland. In these organizations, 32 professionals were interviewed. The research sought to understand how PKR was being facilitated, as well as how personal knowledge was made accessible and usable for employees.

Findings – The organizations had not been as successful as anticipated in PKR. The role and responsibility of records professionals was limited in the PKR process. Different professionals seemed unaware of the possible synergy effect of collaborative PKR.

Originality/value – There is a lack of studies that explore the juxtaposition and collaboration of records professionals and HR and training professionals in organizations. The aim of this research was to bridge this gap. Its originality lies in how it approaches diverse professions and their collaborative PKR effort. This research provides a valuable practical and theoretical contribution to a rapidly growing interdisciplinary field of information and records management. It can lay the foundation for further research into the field.

Keywords Collaboration, Iceland, Information and records management, Personal knowledge registration, Records professionals

Paper type Research paper

Introduction

In an organization of 200-300 employees, it is possible for people to know one another "well enough to have a reliable grasp of collective organizational knowledge" but beyond this size, it becomes impossible (Davenport and Prusak, 1998, pp. 17-18). But, is a *reliable grasp* reliable enough?

Little is known about how information on employees' personal knowledge, and their participation in training and development programs, is registered. It was, therefore, decided to study the current status of personal knowledge registration (PKR) in Icelandic organizations and to understand how this registration is accessed, used, and by whom. Furthermore, it was of interest to examine how records professionals and human resource (HR) and training professionals collaborated on PKR. Likewise, to study the role and responsibility of these records professionals in the registration process.

It may be argued that PKR has evolved from the disciplines of knowledge management (KM) and human resource management (HRM) because the registration of employees' education and training originates in HRM theories on organizational performance, progress

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and prospects. Becker and Gerhart (1996) linked this strategic and economically significant aspect of HRM to value creation in their comparison of high performance work systems. In it, training was categorized, measured and registered by the job descriptions and responsibilities of different employees. Delaney and Huselid (1996, p. 949) acknowledged the value of HRM practices, and systems of such practices, including the registration of extensive employee training into HRM systems. Hislop (2003) wrote that KM and HRM could be linked by focusing on human and social factors, such as how employees' levels of commitment influence the overall performance of organizations. According to Saffady (2016), KM incorporates the creation, storage, arrangement, retrieval and transfer of organizational knowledge. He maintains that records management (RM) operations and concepts promote KM and that "recorded information is an important embodiment of an organization's intellectual capital" (Saffady, 2016, p. 34). KM theories, in particular Nonaka and Takeuchi (1995) studies on the knowledge creating company, highlighted individual knowledge creation – and sharing – as a catalyst for organizational learning.

Many Icelandic organizations put an emphasis on knowledge sharing and conduct elaborate training programs for their employees. These programs are coordinated by the HR divisions and partially taught by employees themselves. Yet, a large part of all training in Icelandic organizations is conducted by external instructors. At times, the knowledge or expertise needed for a program exists within the organization, without the HR or training manager being aware of it. The first author of this paper has a long experience as a project manager in the continuing educational sector. Her perception is that the registration of employees' personal knowledge in Icelandic organizations is incoherent. Organizations were outsourcing their training needs to continuing education services, and the demand for external instructors was high. In two organizations included in this research, the training managers had requested specific programs from the continuing education service, unaware of the fact that the instructors in charge were employees of their own organizations. These training managers had no coherent database, intranet nor corporate social media where employees' personal knowledge was adequately registered.

A discourse of knowledge registration or the registration of intellectual capital among HR and training managers, the continuing educational sector and employees themselves has been ongoing in Iceland for a while. In it, the purpose of registration has been to gain better use of valuable knowledge, such as for in-house training, building interdisciplinary teams and for the employees' career development. The term personal knowledge registration and the abbreviation PKR is a consequence thereof.

Three elements affect an individual's inclination to share knowledge; positive attitude toward sharing, perceived benefits of sharing and self-efficiency of knowledge sharing (Henttonen *et al.*, 2016). The fourth element could be added which is the opportunity and the platform to share.

The term personal knowledge (PK) is comparable to the information a person puts in a curriculum vitae (CV). It can also be associated with the creation of corporate knowledge directories (e.g. company yellow pages) and expert networks (Andreeva and Kianto, 2012). PK covers employees' education; language, information technology, writing or mentoring skills; participation in courses and conferences; teaching experience, former work experience and communication skills. In PKR, these elements constitute a set of information that the individual, in co-operation with his/her workplace, selects and considers of collaborative use while working for the organization. PKR refers to the registration process of the selected information into a centrally based database, an intranet website or a corporate social medium. The intention of PKR is to create an overview of accumulated knowledge embedded in the employees (Macguire, 2005; Hase and Galt, 2011).

The findings of this research revealed that Icelandic organizations were only randomly registering PK. Employees access to registrations was usually restricted to their individual profiles, thus limiting their usability. This paper seeks to understand why PKR was perceived unsuccessful and for what reasons records professionals seemed only partially involved in the PKR process.

This paper is organized into eight main sections. The first four review the role and responsibilities of records professionals, technological influences on this role and the organizational cooperation on PKR. Methodology is discussed in Section 5 and Section 6 presents the findings. Section 7 covers a discussion and a general summary and the paper closes with some conclusions.

A developing profession

RM is "the efficient and systematic control of the creation, receipt, maintenance, use, and disposition of records, including processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records" (ISO 15489-1, 2016). Records professionals cooperate with IT divisions on the requirements for records management systems, implement and administer systems and monitor their use. Records professionals also coordinate access to records, both internally and from outside the organization. They develop a records strategy and a storage plan for short- and long-term retention of both physical records and digital information, such as e-mails, websites, cloud services, wikis, blogs and social media (Saffady, 2016; Franks, 2013). To do this, they must balance the requirements of business confidentiality, privacy and public access (Gunnlaugsdottir, 2015).

The modern work environment is found anywhere and at any time. Digital natives enter the labor market, while experienced and specialized employees retire (Evans *et al.*, 2014; Kallberg, 2013; Ball and Gotsill, 2011). Records professionals are faced with complex responsibilities (Foscarini, 2012; Goldsmith *et al.*, 2012). To survive in this environment, records professionals must deal with technological changes, command various devices, service requirements, quality standards and legal demands (Gunnlaugsdottir, 2012; Kallberg, 2013; Lappan, 2010; McLeod, 2012a).

Registration of personal knowledge

Information and records management interrelates with KM, not only the habitual task of handling documents and papers in the office, but as an overall systematization of information (Penn, 1994; Palmer, 2002; Gunnlaugsdottir, 2003). Furthermore, KM and RM are academically intertwined where codification and classification of knowledge into appropriate IT systems is debated (Davenport and Prusak, 1998; Hansen *et al.*, 1999; Slagter, 2007; Jashapara, 2011).

Despite having the required skills, and being responsible for most other data registration within an organization, records professionals are only marginally involved in PKR. The cause may be that records professionals are simply seen as managers of records systems, which are designed for the capture, use, search, retrieval, retention and disposal of corporate information and "not as service oriented work systems for knowledge workers" (Goldsmith *et al.*, 2012, p. 153).

On participation, access and use

Having a database is one thing, but involving users is another. The aim of computer-based system designers is "not the replacement of human beings with machines, but the development of socio-technical systems within which man-machine socio-technical

"partnership" is enabled" (Wilson, 1994, p. 344). A central concept of computer-supported cooperative work (CSCW) is the notion to humanize the system (Ackerman *et al.*, 2013). This is achieved by the active participation of key stakeholders within the organization, their socialization and involvement in the creation and development of the system. It is, therefore, important when developing and implementing a system, to give credit to the organizational culture to "take a much more realistic view of organizational life" and to "be able to develop strategies that facilitate rather than constrain" the systemization of information (Oliver and Foscarini, 2014, p. 25). The extent of access and use is a managerial decision which depends on information security, which again rests on the invisible backstage efforts of employees who build and maintain their own platform (Ackerman *et al.*, 2013).

A project dies if it does not proceed in ways that enable the involved partners to see their interest in it, become enthusiastic and carry the project through (Bradley and McDonald, 2011; Damodaran and Olphert, 2000; Morsing *et al.*, 1999). CSCW theories have recently focused on social practices involved in knowledge sharing, as well as the actual systems that might support this sharing of knowledge (Ackerman *et al.*, 2013). There is an increasing recognition of individual roles in knowledge management processes, and a greater interest in the people perspective regarding knowledge (Stenmark, 2001). Hence, the ability to allocate and effectively utilize organizational knowledge, relies substantially on its employees, who actually create, register, share and use knowledge (Andreeva and Kianto, 2012; Henttonen *et al.*, 2016).

According to Franks (2013), records management 2.0 is "a space that people proactively *want* to use because doing so makes *their* life easier!" It is important for users to see their benefit in using the system but:

> The paradox is that at the same time as records managers are struggling to get users to add even the merest and simplest of metadata from a predefined list, numerous Web 2.0 services are thriving thanks to their users' seemingly insatiable desire to voluntarily categorize and tag the information of interest to them (Franks, 2013, p. 24).

Web 2.0 services have gradually entered the KM and information and records management literature, making it possible to socially share knowledge within organizations (Nonaka *et al.*, 2000; Panahi *et al.*, 2013; Mäkinen, 2013). Yammer, Facebook, LinkedIn, Wiki, Instagram and Twitter are used to improve organizational processes (Treem and Leonardi, 2012; Vuori and Okkonen, 2012; Mäkinen, 2013) and create collaborative systems (Bradley and McDonald, 2011; Morrice, 2013).

Records professionals in collaborative environments

The socio-technical environment is challenging the records profession. The goal is "to develop the appropriate strategies to manage [. . .] information as evidence for accountability purposes" (Oliver and Foscarini, 2014, p. 6). To survive, records professionals need to stop "defend[ing] their turf against information technology incomers" and work collaboratively toward the mutual objective of managing information in a way that encourages participation from all stakeholders without being constrained by function (Oliver and Foscarini, 2014, p. 15; Foscarini, 2010).

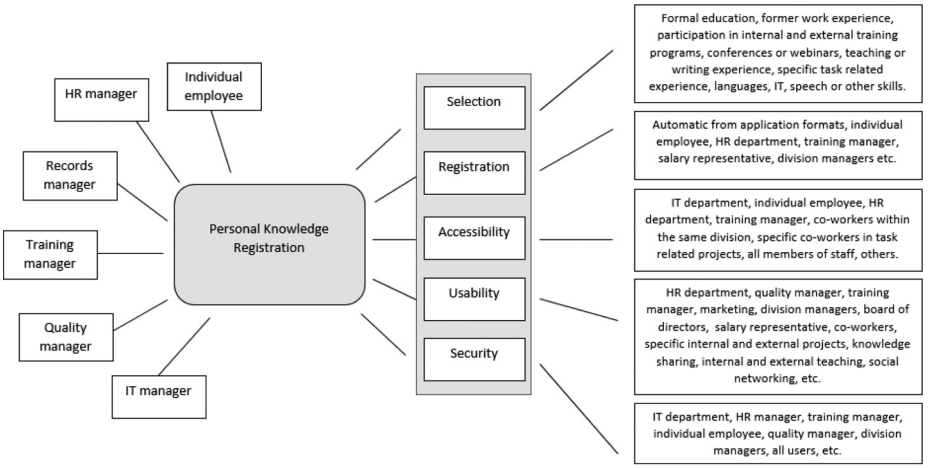
Key stakeholders of information include records professionals, knowledge workers and senior management (Goldsmith *et al.*, 2012). Records professionals "act[s] as *mediators* between the system developers, standards, and the system users" (Foscarini, 2010, p. 390). Knowledge workers "spend most of their time generating, applying or conveying knowledge" and "rely increasingly on RM systems to source corporate knowledge" (Goldsmith *et al.*, 2012, p. 154). These employees claim that the systems are too complex and

unattractive, too constraining and slow, which in turn hinders their general use (Gunnlaugsdottir, 2009; McLeod, 2012b).

Records professionals are adjacent to other professionals in organizations, such as HR, training, information technology (IT) and quality management professionals. Figure 1 shows a conceptual model of professional collaboration. It presents six possible facilitators of PKR and five key actions; selection, registration, access, use and security. Each action is further described on the right side of the model.

Figure 1 establishes PKR in the middle of different facilitators and their responsibilities. On the left-hand side are HR and training managers who are responsible for recruitment, professional development and training. IT professionals, lower left, are responsible for maintaining and securing IT systems, and quality managers for standardizing them. Other key stakeholders, employees, upper left, are responsible for maintaining the viability of the systems, being simultaneously producers and consumers. All facilitators may have a role in each of the five actions, the selection, registration, accessibility, usability and security of information (mid-figure). The expertise of the records professional is, however, of important use for the whole process. The particular role of records professionals is further explained in Figure 2.

Figure 2, which shows records professionals providing strategic guidance at different stages of the process, is a continuation of Figure 1. Each stage is demonstrated on the left side of Figure 2. From the first steps in the developing phase, through implementation and toward administration, the selection, organization and registration of PK benefits from the expertise of records professionals in classification, indexing and content analysis (Franks, 2013; Saffady, 2016). Each action of the records professional is further described on the right side of Figure 2 and interconnected to PKR. In an increasingly digital environment, information is moving around in a variety of short-term databases. The organizational memory needs systematic registration of information for future use (Gunnlaugsdottir, 2003). To avoid "becoming an extinct species", and "risk appearing increasingly irrelevant", records professionals need to prove that their knowledge is appropriate and relevant (Oliver and Foscarini, 2014, p. 4 and p.15).



Source: Haraldsdottir (2016)

Figure 1. Organizational matrix

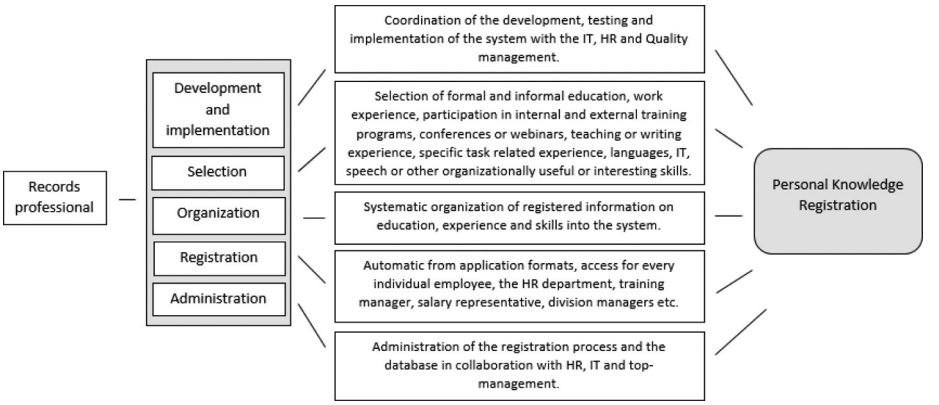


Figure 2.
The role and responsibility of records professionals

Methodology

The aim of this research was to provide an understanding of how different professionals collaborated on PKR, with focus on records professionals. It sought to answer the following research questions:

RQ1. What is the current status of PKR in Icelandic organizations?

RQ2. How do records professionals collaborate with other professionals, particularly HR and training professionals?

RQ3. What is the role and responsibility of records professionals in PKR?

The data collection took place during 2010-2012 and again during 2014-2016. Three organizations, A, B and C were studied during 2010-2012 to decide the scope of the research. At this point, the particular role and number of interviewees in each organization was determined. Then, preparation was made for further data collection in other organizations. In 2013, a thorough literature review took place, as well as an examination of internal documentary material and websites of the participating organizations to gain a more holistic view of the topic. During 2014-2016, data gathering was accomplished consisting of further nine organizations. Three were studied in detail, while six were studied for corroborative purposes. The first three organizations were revisited to verify former information. Data analysis was completed in 2016.

Qualitative methodology was used for conducting this research. It is well suited to obtaining data at the scene (Gorman and Clayton, 2005). Six organizations, named A, B, C, D, E and F, were studied in detail. Additional six organizations were selected as a corroborative interview group, named G, H, I, J, K and L. Open-ended interviews were used and interview guides were set up for different groups (Bogdan and Biklen, 2003; Kvale 1996). A hypothesis was developed during the research and from the analysis of the data (Moustakas, 1994).

This research was a multiple-case study (Silverman, 2013; Creswell, 2007; Merriam, 2009) containing 12 organizations where 32 interviews were conducted (See Tables I and II). The selection of the organizations and the interviewees was purposive in accordance with the needs of the study and the attributes that were considered likely to give informative findings for the research (Morse, 1991; Esterberg, 2002). Grounded theory was used as a method to analyze the interviews (Glaser and Strauss, 2012; Charmaz, 2006). Themes were sought in

In-depth analysis of interviews in six organizations							
	Private organizations			Public organizations			
	A	B	C	D	E	F	Total
Management*	1	1	1	1	1	1	6
HR manager	1	1	1**	1	1	1	6
Education and training manager	1	1	0	1	1	1***	5
Information and records manager	1	1	0	1	1	1	5
Quality manager	0	0	1	1	0	0	2
Employee working on quality control	0	0	0	0	1	0	1
							25
Corroborative analysis of interviews in six organizations							
	Private organizations			Public organizations			
	G	H	I	J	K	L	Total
HR manager	0	0	1	1****	0	0	2
Education and training manager	1	1	0	0	0	0	2
Information and records manager	0	0	0	1	1	1	3
							7
						TOTAL	32

Notes: *Interviewees with one of the following titles: head of department/division, Executive manager and Administrative Official; **An employee responsible for HR and education and training; ***an employee responsible for education and training and quality management; ****joint interview with HR manager and information and records manager

Table I.
The interviews. An overview

the data. They were coded and classified and indications found to merge the classification of the themes (Hennink *et al.*, 2011).

Interviewees were selected by systematically identifying employees with the same or similar position in each organization. Interviewees had the following responsibilities: management in various divisions, including IT; administration of in-house training; professional development of employees and HR strategies; implementation of international standards and quality strategies, and implementing and administering information and records systems. Table I gives an overview for the interviews.

The interviews were divided into two groups. First, an analysis of multiple interviews in organizations A-F, and second, a corroborative analysis in organizations G-L with one single interview in each organization. Both groups were divided evenly between the private and the public sector. The first group of six organizations was considered too narrow to paint a coherent picture for this research which led to a comparison with another group of six organizations. The corroborative group was chosen by using snowball sampling, so named because of the similarity to a snowball, which may begin small, but grows by accumulating additional snow (Neuman, 2006). Numerous interviewees from organizations A-F described limited success in implementing PKR while pointing repeatedly to organizations G-L which they had heard of or considered successful in PKR. As PKR had not been as effectively implemented and developed in organizations A-F as perhaps expected, it was decided to compare organizations A-F to G-L. The G-L group was thus defined by interviewees in organizations A-F and examined to find out whether it (G-L) had in fact been more successful in PKR than organizations A-F.

It was considered important to gain insight into the perspectives of different professionals. An advantage of using multiple interviewees was that information provided by one could be further validated by another (Neuman, 2011; Meyer, 2001). The topic was

Table II.
The organizations.
An overview

In-depth analysis in the first group of six organizations					
A Financial private Nearly 1,000 employees. Almost 800 users of EDRMS and eight employees in the information and records division	B Technology private Over 1,000 in the beginning of the research. After major strategic changes, around 500 employees, 100 users of EDRMS. One records professional	C Industrial/ Consultancy private Totally, 300 employees 180 users of a new home-made RM system. No records professional. One quality manager in charge of records management	D Industrial/energy public Over 250 employees. Most of them are users of EDRMS. Two employees in the information and records division	E Financial public Nearly 200 employees and almost all users of EDRMS. Nine employees working on internal information and records matters and one records professional	F Surveillance public Almost 240 employees, all have access to the EDRMS. One records professional and about 15 part-time assistants
Corroborative interview group. One interview in each organization					
G Technology private About 600 employees. No records professional. Interview with a training manager	H E-commerce private Around 270 employees. No records professional. Interview with a training manager	I Industrial/ Consultancy private About 350 employees. One records professional and an assistant for each division. Interview with the HR manager	J Surveillance public Over 150 employees. One records professional. Joint interview with the HR manager and the records professional	K Industrial/energy public About 460 employees. Two records professionals. Interview with the records professional in charge	L Industrial public Totally, 50 employees after major strategic changes. One records professional. Interview with the records professional

examined from multiple perspectives, using several kinds of data and collecting it from various sources (Janesick, 1994; Kvale, 1996). The use of both purposive and snowball sampling, to select equally private and public organizations, from different business sectors, and by selecting different professional groups of knowledge workers, was intended to add to the reliability and validity of this research (Golafshani, 2003). The hope was to enhance the possibility of a holistic view and to ensure as authentic research as possible.

The participating organizations were selected because they operated in different business sectors (Statistics Iceland, 2016) such as finance, IT, energy, manufacturing, engineering, transport and telecommunication, and were at the forefront of their sectors. An overview of the organizations is presented in Table II.

It was important that the organizations selected were technically capable of implementing a functional database or social media for managing knowledge. It was also preferable that they had experience in implementing databases or social media for knowledge registering purposes, whether they were successful or not. The objective was to get a comprehensive picture of employees' actual usage of information systems for PKR, and to get a glimpse of the pitfalls and the success stories of their PKR use. The aim was to capture the perspectives of different participants and examine how and why their different meanings would shed a light on the topic of the research (Yin, 2014). The number of participants to recruit was guided by the theoretical principle saturation (Charmaz, 2006) and by the diversity in the information gained (Hennink *et al.*, 2011).

Iceland is a country of approximately 340,000 people. The risk of revealing the identity of the participants was considered higher than in larger communities. It was anticipated that sensitive information would be revealed during the interviews as questions were asked about the interviewees' work environment, their superiors and colleagues and their experience of support, work-habits, successes and failures. Thus, it was appropriate to disguise individuals and their places of work in all cases (Gorman and Clayton, 2005).

Findings

This research had three main research questions; on the current status of PKR in Icelandic organizations, on the collaboration of records professionals with other professionals at work and finally, on the role and responsibility of records professionals in PKR. The findings are intended to answer these questions.

Current status of personal knowledge registration

The findings indicate that the current status of knowledge registration in Icelandic organizations is generally inadequate, with only a few exceptions. In most organizations, different professionals had developed their own simple approach to gain the knowledge they needed, for the reason that "there is no magical system" as described by the HR manager in organization F. She maintained that the institution was not that large and employees were familiar with their co-workers and added that they relied more on experience than education, and used their personal network to gather information. Despite previous comments about experience and network, the HR manager added:

> Still, I do not know much about the most recent members of our staff and a database on employees' personal knowledge might help, and also to get different reports in an easier manner. I just use Excel; I have a lot of Excel spreadsheets.

Excel seemed to be a popular tool to gather information on employees' PK. In organization C, a collaborative Excel document containing a list of employees' training participation had been kept on an open drive, accessible to all employees, but it was rarely updated and,

therefore, not considered reliable. In organizations A, B and F, Excel documents were kept on different managers' desktops or their personal drives, and not accessible to others. Five managers out of six from the A-F group mentioned Excel, saying that it was their way to stay on top of things. The exception was a manager in organization D who relied on his personal network after decades within the same company. He claimed that there had been a kind of PKR database in the past, which had been used for example to prevent knowledge gaps. He maintained that PKR was necessary especially during a generation change in organizations. PKR was furthermore, he stated, helpful when hiring employees, so that they got enough mentoring time with more experienced staff. Quality managers in organizations C and D agreed on the importance of PKR as a management tool to gather, read and measure the intellectual property of their organizations. They both said that an overview of necessary education, experience and skills of all employees was important to make the best use of internal knowledge, to put together inter-disciplinary teams and to answer various external inspections and internal issues. A manager in organization F, which did not have a PKR database, maintained, however, that using an Excel spreadsheet was the only possible way to summarize employees' education, work-related experience and skills in one place. He found it necessary to update his document regularly as he would otherwise lose a very necessary overview.

Furthermore, in the public organization J, the HR manager compared PKR matters to a "broken puzzle" as she and different division managers were registering various PK information into different databases. The reason was, according to her, that they had no central system, due to lack of funding. The databases (parts of older quality systems, one for each division) were accessible to those working on similar projects or within the same division. The HR manager repeatedly described her dream PKR scenario as a system where all PK was registered into one place, mostly accessible to all users, although some parts of the system would require limited access, such as information on employees' salary or health. Her dream involved an HRM system with the possibility of registering PKR. A manager in organization E had never even opened the existing database on employees' PK, or could not recall the last time, if ever, he had used it. He relied on memory as he had himself hired all his employees and knew how capable they were. All managers from group A-F, who used Excel for knowledge registration, were asked whether they perceived their registration useful for co-workers, such as in HR and training divisions. They agreed on the documents being useful, the idea of sharing them had simply never occurred to them.

Interviewees from the private organizations G, H and I differed from the first six organizations in group A-F. All had managers of HR and training while only one, organization I, had employed a records manager. In organizations G, H and I, much emphasis was put on gathering information regarding employees' formal and informal education and experience and much effort was put into PKR.

The HR manager in organization I maintained that it had taken "blood, sweat and tears" to register everything into the system:

> I have thought a lot about ROI [return of investment]. It was hard to implement the system, but I am sure that there are both financial and qualitative benefits. The information from our database is standardized and we can quickly respond to our customers and send out proposals – in three languages!

She maintained that employees' knowledge was the most important sales product of the organization, and it had to be clear at all times that the sales team had access to correct and updated information regarding the education, skills and work-related experience.

The training manager in organization H agreed as he stated that using PKR contributed to strategic training in the organization:

> We want our training to be linked to our organizational strategy and we want to manage it in accordance with our objectives. Education and training is not just something grasped out of the blue.

He had used Excel in "the old days" and had developed a simple spreadsheet for "training registration for dummies". He was currently having technical problems regarding employees' access to the system he was using, and said that he was getting annoyed with its service as the system needed certain adjustments. He stated that the point of implementing PKR, or "even an app", was to offer open access to the registered information, to all employees. It was not intended for just to a small group of elite employees because "we all work in interdisciplinary teams and rely on the knowledge of each other".

The training manager in organization G described the great value of PKR for his organization. He said that, in the technological environment that the organization was working in, the need to certify qualifications was inextricably linked to lowering operational costs for the organization. He said it was of the utmost importance to have an overview of the intellectual capital embedded in the employees. Having a functional PKR made it possible to foresee who and when individual employees needed to participate in continuing educational programs to fulfil internal and external demands. It was also necessary, he stated, to meet demands for being validated for proposals in international projects. The in-house PKR system was open to all employees and widely used to search for certain skills among employees. They also used an international database, for certain certificates, which was open for administrative access, while individual employees could only examine their own profiles. The interviewee in organization G maintained that when some of the older employees argued that certificates and registration thereof was unnecessary and were unwilling to participate, he would answer: "Would you ever go to a dentist that had never taken an examination but claimed to be really good at his job?"

To summarize, despite a positive experience of PKR in organizations G, H and I, other participating organizations were struggling to capture the PK embedded in their employees. In-house training was incoherently registered in five out of six organizations in the A-F group. In organization E, the HR manager had registered the latest degrees or diplomas into an Excel spreadsheet. She said that she would prefer to be able to "google for knowledge" but relied currently on sending e-mails to all employees when searching for particular skills among them. Participation in internal courses was not registered at the HR division in organization E, and members of staff were required to enter their own information on continuing education, work-related skills or participation in conferences into a database on the intranet. Their access was restricted to their own personal profile. This affected their interest negatively as they saw little purpose in using the database. Two private organizations, A and B, had some overview of their employees' participation in internal courses, but little to none on external courses. Manual registrations, based on internal participation lists, were sometimes missing in organization B due to other ad-hoc projects in the HR division. The reasons for inadequate registration of PK are complex, as there are a few indications which may explain the current status.

In three organizations, D, E and F, registration of PK, other than formal degree, was dependent on the employees' contribution to the database as there was no central registration service. Furthermore, each employee had solely access to his/her own personal profile, and therefore saw little purpose in entering any information. The gain of registering personal knowledge was invisible to interviewees in D, E and F as they could neither see

their colleagues' profiles nor make use of their own profile as for example for a CV. Neither HR nor the training and quality representative in organization F had any registration of employees' participation in in-house training. Both expressed hope to introduce PKR, but shared their concerns that the employees might find the registration process too intrusive. The training and quality representative in organization F said that her organization used an internal phone book on the intranet to find the right co-worker when needed, by looking up by divisions or specific projects. Still, the phone book did not have a search engine, which was unfortunate, especially as staff members would be replaced in the near future, due to generation changes.

In organizations B, C and F, registration of PK, gained from external courses, was dependent on how professionals from HR and/or training managed to gather receipts from the accounting department, or on the employees themselves delivering the receipts. Gathering of receipts or certificates was incoherent and untrustworthy. In organizations A, D and E, employees could write their own information regarding external courses into an existing database. But again, the purpose of registration was unclear to employees, access was restricted to their own personal profile and the usefulness of the database and their own registrations, therefore, limited.

None of the organizations in the A-F group allowed all members of staff to examine the whole database. Four out of six organizations, A, B, C and D, maintained that opening the database for full use was their future goal. Organizations G, H and I had already reached that goal although the interviewees agreed on the possibility and necessity to improve their systems further. Interviewees in organizations E and F expressed worries that open access might discriminate between those with lower education and those with higher education. They said it might cause problems in some divisions, for example where the manager was less educated than most employees, despite being recognized as the most experienced person in the division. The quality representative in organization E was the only interviewee, who was opposed to PKR. She expressed worries that educational information was both private and delicate and should not be laid out in the open for other members of staff to read. Interestingly, the training manager in organization E was the only one who pointed out that the registration of PK was a part of their HR and training strategy.

Records professionals' collaboration with other professionals

The second research question on how records professionals collaborate with other professionals, particularly HR and training professionals, was intended to examine their position at work. First of all, the records professionals interviewed expressed the importance of good communication and of being able to cooperate with different co-workers. The interviewee in organization B, for example, emphasized on the importance of belonging to an inter-disciplinary team to have a say in decision-making regarding different databases and management of EDRMS. The interviewee in organization D agreed and said that records professionals had to be able to work with anyone as it was important to "try to find a way in, which is not always easy, but to keep on going no matter what". When asked about their cooperation with specific professionals, such as HR, training or a quality manager, actual cooperation was little to none.

Records professionals in organizations A, C, E and F had no collaboration with HR or the training manager. They did not collaborate in the development, gathering or classification of PKR nor the registration process at all. At the same time, they claimed to be generally expected to assist HR or the training manager to find appropriate material for diverse internal courses or, as in organization E, putting occasional advertisements on the intranet. They described the same lack of collaboration when asked about quality matters. The

quality manager in organization C, who was also responsible for records management at his workplace, said that quality matters and the HR professionals did not cooperate unless it was about working on quality control in HR, such as hiring processes or similar.

Additionally, records professionals in the public organizations J, K and L confirmed earlier expressed experience from the A-F group. The interviewee in organization K claimed that she had prepared herself for the interview by visiting the HR manager to get information on PKR. She did not collaborate with HR on PKR. She said that information about formal education and internal courses was indeed registered into a database in the HR division, but information about external courses was randomly found in the accounting department and manually registered into the system. She could also report that the PKR database was in little use. Employees could only see their own profile but could contact HR if they needed to search for certain skills. According to her information, search requests were rare. In her opinion, employees were probably neither aware of the possibility of registration nor the search options and were, therefore, not using the system.

The records professional in organization L did not collaborate with HR on PKR. She said that there was no proactive work going on in her organization on PKR, neither regarding gathering nor registration of information on education, or even on managing employees' participation or costs in continuing education. According to her, all personal files were kept on paper with other HR-related material. Members of staff only had access to their own personal files by asking for them at the office. There was no procedure for registering information from CVs into a database or the intranet, and information regarding external courses was only found in accounting.

The records professional in the public organization J had a similar story to tell, although there was one main difference. She cooperated successfully with the quality manager at her workplace. She was involved in creating their quality handbook and worked on quality work-procedures alongside the quality manager. She claimed, however, not to have any real collaboration with the HR manager. PKR was not on her table, but participation lists from in-house courses were sometimes saved into the EDRMS.

The role and responsibility of records professionals in PKR

As regards the third research question on the role and responsibility of records professionals in the PKR process, the findings indicate that records professionals were even more marginalized than anticipated. The five records professionals in group A-F (organization C did not have a records professional) said that they were responsible for records management, including EDRMS, different databases and libraries. The records professional in organization D said, for example, that her job was "managing records and databases, reports, various technical data and library", and the one in organization F "was hired to implement a new RM system and intranet [. . .] take care of quality matters [. . .] later library and museum [. . .] and the quality matters went elsewhere". Still, none of them had a particular role in PKR and only one, the organization E professional, had some responsibility regarding the intranet. This professional said:

> Yes, I am supposed to be responsible for the intranet but we recently got a new version and there is no knowledge in our division, we know nothing about the new system.

None of them had a specific role in the implementation or management of a website, social media or wiki pages. None of them were responsible for quality matters except the records professional in organization J. Some interviewees, as in organizations B, E and D, were not aware of a current system intended for PKR at their organization. The interviewed records professionals in J, K and L had no role in implementing an intranet or PKR. The records

professional in organization I, where PKR was perceived successful, was not involved in their registration process.

The quality manager responsible for records management in organization C was of the opinion that there should be a system for PKR. Despite having a considerable network, he expressed worries about its limitations and the lack of having a trustworthy overview of employees' PK. In organization A, the interviewee stated that "there is a system and employees are supposed to register themselves what they consider important, but since there is no follow-up, nobody really puts an effort into it". The interviewee in organization E stated that a group of records professionals, working for public organizations and municipalities, had discussed PKR, its current status and how records professionals might participate in the process, but none had found an appropriate reaction, nor taken the subject further with colleagues. The records professionals interviewed agreed that it was not their role to interfere with personnel information. They were in no position to instruct HR on how to strategically gather or register information on personal knowledge. PKR was currently "not on their table", and the systems for registering PKR at their organizations were totally detached from EDRMS.

Discussions and summary

The findings of this research suggest that a "reliable grasp", as presented by Davenport and Prusak (1998), is not enough to effectively access and utilize the personal knowledge of employees. The training manager in organization B and HR manager in organization A stated that a PKR system for internal knowledge had to contain a "Google factor" to work properly. For example, an HR manager in organization C noted that "our goal is for everyone to be able to enter 'German' into the system and easily discover who speaks, writes and understands German, and how well they do it". Training managers in organizations D and B maintained that the purpose of PKR was "not only to find an employee who can teach an in-house course, but also to learn what knowledge is still needed". The quality manager in organization C stated that, because his workplace was spread over several locations, people in one division were not aware of the specific skills of employees in another division. In his opinion, a social network or a "reliable grasp" was insufficient, as social networks reached only so far.

Icelandic organizations were struggling to capture their PK. Despite having different types of databases for formal education and participation in internal courses in organizations A-F, using an Excel spreadsheet was the most common method for managers to get their overview of employees' education, experience and skills. The present research shows that the limited information gathered for PKR is in most participating organizations kept in separate databases within the HR division or in Excel spreadsheets. This corresponds to what Oliver and Foscarini (2014) stated on information being registered and organized into multiple business systems – HR, finance and other management systems, and records professionals were no longer the only key stakeholders in managing information. For personal security reasons, lack of funding and inadequate technological development, the limited PKRs in organizations A-F, as well as K and L, were accessible only for employees to view their individual profiles and the HR or training manager in charge, which hindered their use. On the other hand, there is an increasing recognition of individual roles in knowledge management processes, and a greater interest in the people perspective of knowledge (Stenmark, 2001). This leads to the ability to allocate and effectively utilize organizational knowledge by the employees who create and share this knowledge (Henttonen *et al.*, 2016). Organizations I, H and G seemed to have reached this recognition and were collaboratively working toward a functional PKR.

One of the objectives of this paper was to raise awareness of records professionals as specialists in information management, including PK. Despite their educational background and experience of systematic control of the creation, receipt, maintenance, use, and disposition of records and insight into the creation, management and storage of knowledge, they were excluded from the PKR process. Interviewed records professionals seemed to work primarily with organizational EDRMS and issues related to libraries. They had a limited role with organizational intranets. None of them had any involvement in the implementation or administration of Web 2.0 solution or PKR at their workplace. Their narrow collaboration with other professionals was notable in the interviews. Perhaps, the traditional perception of the records manager as a gatekeeper or as an archivist is true, and they have been left alone to deal with and defend their turf (Oliver and Foscarini, 2014). Another reason may be that records management systems have not been implemented as interactive social platforms for registering and sharing employees' PK (Foscarini, 2010; Franks, 2013; Bailey and Vidyarthi, 2010). The third reason may lie in the statements of interviewed records professionals who stated that PKR matters were "not on their table" which makes one wonder whether they were simply not interested in the matter or whether the blame could be found in their co-workers' limited awareness of their educational background and skills in information management. Records professionals need to work more collaboratively with other professions and bring their own particular expertise to the mix (Oliver and Foscarini, 2014). Perhaps, they need to be more open to alternative registration systems and see opportunities instead of problems in HRM systems or Web 2.0 services. Hopefully, records professionals will speak up, collaborate on PKR matters and demand their seat at the table.

Records professionals need to be equipped with a toolkit containing their particular expertise, as well as social, technical and collaborative skills to survive in the hybrid working environment of the twenty-first century (Franks, 2011; Oliver and Foscarini, 2014). Records professionals must accordingly be able to deal with technological changes, including social media, and understand and follow complex requirements of quality, service and legal matters (Gunnlaugsdottir, 2012; Kallberg, 2013; McLeod, 2012a). The catch is that the regulative environment of records management is too complex and too constraining for the general employee, which in turn hinders collective use of records management systems (McLeod, 2012a, 2012b; Foscarini, 2012). The purpose of record management (RM) is primarily to manage information as evidence for business activity and for accountability reasons (ISO 15489-1, 2016). Thus, it could be argued that information on the PK of employees should be considered a matter solely for the HR division. PK of employees has neither been categorized as evidence in the same way as records have in the RM literature nor as something that the organization needs to be accountable for. In fact, "records management concepts and operations are less important for management of implicit knowledge" (Saffady, 2016, p. 34).

Still, the findings of this research seem to suggest changing needs as information about education, skills and experience needed to be evidence based. Organizations A, C, D, E and G, H, I and J collected certificates from employees as a proof of necessary qualifications. The same applied to organization B in specific divisions. Information on the participation of employees in internal training programs was registered up to a point for them to gain official units that were valued within the upper secondary school system. PKR created value for organizations, such as to fulfil legal demands as in organization J, or to be validated for proposals in international projects as in organization G. These registrations were seen as evidence, for the benefit of employees, and clients and to answer monitoring institutions. Interviewees in organizations A, C, D, G and I stated that clients, especially overseas clients,

expected Icelandic organizations to demonstrate that they were suitably qualified to undertake international assignments. In this way, PKR provided documentary evidence of PK in these organizations.

It is important to create collaborative systems (Bradley and McDonald, 2011; Morrice, 2013) where PKR can take place, whether by means of EDRMS, HRM systems, intranet or social media. Records professionals should widen their turf and administer the PKR process, participate in the implementation and "work collaboratively towards the mutually beneficial objective of managing information in a way that encourages participation from all stakeholders without being constrained by function" (Foscarini, 2012).

Conclusions

This research was about how PKR was being practiced in Icelandic organizations. Its main focus was on the collaboration of records professionals with HR and training professionals and on the role and responsibilities of records professionals in PKR. The views of management and quality managers on collaborative PKR were partly covered as well. Twelve organizations were studied using semi-structured interviews with 32 professionals.

The findings revealed the views and experiences of the professionals and their positive perception toward PKR as a much needed strategic and economically significant aspect of value creation in organizations. The key outcome is the limited participation of records professionals in the PKR process. These key findings are of concern as they raise questions on the educational background of records professionals, their technological skills, the respect of others of their specialization and perhaps their own interests, self-worth or stamina.

It is, therefore, of considerable interest to continue the research. Firstly, by examining participant observations in organizations A-F where professionals were observed while using PKR. Secondly, by using discourse analysis on collected internal documentary material such as education and training strategies from these organizations. It is also of interest to examine organizations that have won *The Knowledge Company of the Year* award at an annual celebration held by The Icelandic Association of Economists, which has been celebrated since the year 2000. Are these organizations better equipped at PKR than those presented in this paper? If so, who is in charge of the PKR?

This research bridges an important gap as it provides a multi-professional, empirical example of how and why collaborative efforts in PKR were not as successful as perhaps anticipated. It adds new knowledge on collaboration as it looks into how records professionals collaborate with other professionals in Icelandic organization. This research was intended to raise awareness of records professionals as specialists in information management, including PK. It painted a picture of records managers as key members in the professional collaboration of PKR (Figures 1 and 2) which has not been done before. Records professionals need to fight for their existence. They must convince their colleagues of their skills, and justify how their role could advance with twenty-first century organizations. Their opportunity may lie in collaborating more with other professionals concerning documents and records that do not necessarily belong to EDRMS. Their education, training and skills are useful in much wider sense. Hopefully, this research will help records professionals to speak up about their interests and capabilities, get them to collaborate on PKR matters and claim their seat at the table.

This research is not without limitations as it was conducted in 12 organizations in Iceland. However, the organizations and the 32 interviewees were purposively selected which advances the truthfulness and value of the findings. Thus, the research provides an important contribution to the rapidly growing academic field of information and records management.

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