# KNOWLEDGE-SHARING PRACTICES BY LEGAL INFORMATION PROFESSIONALS AT HOGAN LOVELLS: LAW FIRM IN SOUTH AFRICA AND ENGLAND

by

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# DECLARATION

Student number: **54971543**

I declare that: "**Knowledge-Sharing Practices by Legal Information Professionals at Hogan Lovells: Law Firm in South Africa and England**" is my own work and all the sources that I have or quoted have been indicated and acknowledged by means of complete references.

**12 December 2017**

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**SIGNATURE** **DATE**

**(Mr. Manamela BE)**

# DEDICATION

I dedicate this dissertation to my supportive parents – my father, Joel Tlou Manamela, and my mother, Lisa Mamafake Manamela. It is thanks to their motivation and guidance that I was able to make it this far.

To Puseletso Boledi Maimela, thank you for your understanding and sacrifice: I would have not achieved this without you.

I also dedicate this work to my siblings, Ntwampe and Kwena Manamela. I hope it will make you proud, as I always aim to set an example and prove to you that anything is possible if you are determined and work hard to achieve it.

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# ABSTRACT

Knowledge-sharing practices are all the actions aimed at improving the internal flow and use of knowledge within a virtual team. The collective knowledge of team members only becomes powerful if it is shared among those who possess common goals. The main purpose of this study was to explore the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals and establish how these practices could be enhanced in order to provide a superior information service to the firm's lawyers. Hogan Lovells is a multinational law firm with offices in South Africa and England, and its virtual team of legal information professionals were experiencing challenges in sharing knowledge. The study adopted a qualitative methodology and a case-study research design. Interview guides were used to collect qualitative data from study Participants. Out of the 23 potential interviewees from the London and Johannesburg team who were purposively selected as the target population for the study, the researcher interviewed 14 on reaching the point of saturation. The Participants interviewed were in possession of suitable information related to the objectives of the study. Qualitative data collected were analysed using content analysis; findings were then made from the completed analysis. From the findings, it emerged that there were several gaps in the knowledge-sharing practices. Several enablers to the knowledge-sharing practices by legal information professionals were identified. The study recommended several ways by which the knowledge-sharing practices at Hogan Lovells' virtual team of legal information professionals may be enhanced, amongst which are: formalising team meetings as a virtual community of practice, stimulating informal peer mentoring, valuing storytelling and regularly conducting After-Action Reviews. In addition to this, the virtual team should use other knowledge-sharing practices, such as brainstorming, subject-matter experts, and face-to-face virtual meetings. The study suggested that additional studies, particularly surveys and quantitative studies, be conducted on other virtual teams of legal information professionals in South Africa in order to explore their knowledge-sharing practices.

**KEY TERMS:** Knowledge, knowledge sharing, knowledge-sharing practices, legal information professionals, information communication technologies (ICT), virtual team, Hogan Lovells.

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# CHAPTER 1: INTRODUCTION AND BACKGROUND

## 1.1 Introduction

Legal information professionals operate within the context of a law firm (American Association of Law Libraries 2016). They provide a range of information-related services to lawyers and the law firm. Their role is to solve the information-related challenges faced by lawyers (Demers 2012:6), and their work consists mainly of assisting lawyers with legal research and enabling them to access legal information. Legal information professionals use their information-seeking skills to find legal information to help lawyers pinpoint legislation, commentary and judgments in order to formulate legal opinions and arguments in the court of law (Demers 2012:1-6). Lawyers cannot afford to miss critical pieces of information or knowledge (Du Plessis 2004:26). However, they are permanently being flooded with new information, such as frequent changes in legislation and new court decisions, among many other changes (Olatokun and Elueze 2012:1). A lawyer searching for certain information or knowledge could follow various paths, such as searching volumes of legal information resources, manually searching e-mails, asking a colleague down the hall, or consulting a legal information professional, that is, an expert in the art of researching and retrieving legal information (Du Plessis 2004:55). In the absence of legal information professionals, a lawyer might have spent a considerable amount of time before being certain that all the relevant information was gathered (Du Plessis 2004:55).

Legal information professionals are sometimes required to work together in teams in order to cater for the large number of lawyers that require information-related service (Greer, Grover and Fowler 2007:12). In doing so, members of a team of legal information professionals unavoidably share knowledge. It is through teamwork that individuals' knowledge is shared and organised within the team (Erhardt 2011:87). Due to team member's reliance on each other for knowledge and assistance, the effective sharing of knowledge amongst legal information professionals working together as a team is a vital process for law firms (Staples and Webster 2008:617). Knowledge is the main driver of the success of legal inforamtion professionals working in teams. Therefore, emphasis must be placed on encouraging team members to share their knowledge in order for it to be utilised by others within the team (Maponya 2005:902).

Knowledge sharing enables team members to benefit from each others' experience and knowledge (Chilton and Bloodgood 2013:111). It is done in order to share useful knowledge effectively with team members who need it to engage in a certain activity or solve a problem (Maponya 2005:904). Therefore, in accordance with Maponya (2005:900), a team of legal information professionals can improve their work practices by sharing knowledge amongst each other in order to become more efficient and effective in their core activities. Knowledge sharing is strategically important to a team of legal information professionals as it enables less knowledgeable individuals to improve their work performance by acquiring the knowledge they need from more knowledgeable individuals. It thus refers to the sharing of previous experience, understanding of a topic, and know-how to assist others to react appropriately or to complete a task (Wang and Ko 2012:423).

The team of legal information professionals in this study are working as a virtual rather than traditional team. They are a virtual team because its members are interdependent and collectively involved in task management, share responsibility for the outcomes of tasks, and are geographically dispersed, with communication channels predominantly facilitated by information and communication technologies (ICTs) rather than entailing face-to-face interaction (Gressgard 2011:102; Zakaria, Amelinckx, and Wilemon 2004:16). Advances in ICTs enable legal information professionals located in two geographically dispersed locations to work together as teams (Leinonen and Bluemink 2008:38). However, as Zakaria et al. (2004:15) note, the formation of a virtual team of legal information professionals requires emphasis on distinctively modern knowledge-sharing practices among geographically dispersed team members. In order to achieve effective knowledge sharing, Ma, Huang, Wu, Dong and Qi (2014:1007) indicate that it is necessary to understand the practices of sharing knowledge in a virtual team of legal information professionals. Accordingly, this study investigates the knowledge-sharing practices amongst legal information professionals working as a virtual team at Hogan Lovells, a multinational law firm.

## 1.2 Contextual setting

Hogan Lovells is a multinational law firm which has an office in South Africa. A multinational or global law firm is a firm that has offices in several countries; some of these firms boast a presence in 20 or more countries, and in each case are fully staffed by lawyers and business support staff (Azzolini 2011:89). The geographic dispersion of multinational law firms' offices has contributed to the rise of global virtual teams, which are a phenomenon of globalisation (Zakaria et al. 2004:15). Hogan Lovells is co-headquartered in London and Washington, D.C. It was formed on the 1 May 2010 in a merger of two law firms, the Washington-based firm Hogan & Hartson and the London-based Lovells. It is a very large law firm, with more than 2,500 lawyers working from more than 40 offices in the United States, Europe, Latin America, the Middle East, Asia and Africa (Chambers and Partners 2018).

In December 2013, Hogan Lovells combined with Routledge Modise, a leading South African law firm based in Johanesburg (Hogan Lovells 2013). Thereafter, a strategic decision was made by the firm to integrate the London- and Johannesburg-based teams of legal information professionals. This led to the formation of Hogan Lovells' virtual team of legal information professionals. The vitual team of legal infomation professionals seeks to ensure that Hogan Lovells' lawyers are the best-informed in the legal market place by facilitating access to the right legal and business information from the most appropriate source, quickly and cost effectively. The teams works in partnership with lawyers, adheres to high standards and enjoys an excellent reputation within the firm. The work of Hogan Lovells' virtual team falls into four broad categories: research, current awareness, resource management (including acquisitions), and training. The team collectively shares knowledge and works together from the Johannesburg and London offices to provide the abovementioned services to Hogan Lovells' lawyers around the world.

All the experienced members of the Hogan Lovells' virtual team of legal information professionals are located at the London office. Their location affects the virtual team's ability to share important knowledge with newly recruited and inexperienced members of the Johannesburg team. The inexperienced members of the virtual team appeared to be overwhelmed by the amount of knowledge they need to acquire and absorb in order to perform the vitual

team's work. In some cases, the inexperienced members of the team are unsure of what they need to do in order to complete the work assigned to them. Therefore, the firm's ability to solve this challenge would improve the process of knowledge sharing amongst members of the virtual team.

## 1.3 Statement of the problem

According to Mayfield (2010:25), the performance of legal information professionals who are members of the same team will increase through the healthy exchange of knowledge about more effective and efficient work methods. However, teams are knowledge generators but often do not have a systematic or strategic approach to developing, capturing, disseminating, sharing or applying knowledge (Riege 2005:22). There are challenges around the efficiency of the knowledge-sharing practices of Hogan Lovells' virtual team, there is a lack of communication between team members and the team's culture does not appear to be conducive to knowledge sharing which have resulted in a lack or insufficient sharing of knowledge amongst the members of the Johannesburg- and London-based team of legal information professionals. These challenges have also made the sharing of knowledge a complicated and inefficient task, which causes extended task completion times and delays. Therefore, the insufficient supply of knowledge has resulted in the need for an enhacement of the virtual team's knowledge-sharing practices. The researcher investigated the virtual team of legal information professional's current knowledge-sharing practices and established how the virtual team's knowledge-sharing practices can be enhanced.

## 1.4 Purpose of the study

The main purpose of this study is to explore the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals and establish how these practices could be enhanced in order to provide a superior information service to Hogan Lovells' lawyers.

### 1.4.1 Objectives of the study

The study was guided by the following objectives:

1. to establish the virtual team of legal information professional's understanding of knowledge-sharing practices;
2. to explore the knowledge-sharing practices used by the virtual team of legal information professionals;
3. to explore the knowledge-sharing technologies used by the virtual team of legal information professionals;
4. to identify the knowledge-sharing challenges experienced by the virtual team of legal information professionals; and
5. to establish how knowledge sharing amongst the virtual team of legal information professionals can be enhanced.

### 1.4.2 Research questions

1. What is the virtual team of legal information professional's understanding of knowledge-sharing practices?
2. Which knowledge-sharing practices are used by the virtual team of legal information professionals?
3. Which knowledge-sharing technologies are used by the virtual team of legal information professionals?
4. Which knowledge-sharing challenges are experienced by the virtual team of legal information professionals?
5. How can knowledge sharing amongst the virtual team of legal information professionals be enhanced?

## 1.5 Significance of the study

This study is significant to Hogan Lovells since it established how efficient their virtual team of legal information professionals are sharing knowledge amongst the Johannesburg- and London-based members of the virtual team. The researcher is a member of the virtual team and therefore wanted to make a meaningful contribution to improving the quality of the virtual team's services to the law firm by enhancing the knowledge-sharing practices applied by the virtual team. Hence, this study also established more efficient ways through which they can share knowledge amongst

members of the virtual team. As such, this study is also significant because it highlights the knowledge-sharing practices currently applied in the virtual team, identified weaknesses in these practices and examined ways in which they could be improved. Moreover, the findings can be used by other multinational law firms to improve the knowledge-sharing practices of their virtual teams. This study also contributes to the body of knowledge on legal information professionals in law firms, a field which little research has been done to the best of the researcher's knowledge, and adds to the body of knowledge in the field of information and knowledge management. Lastly, it paves the way for further investigations into the role of virtual teams of legal information professionals in law firms.

## 1.6 Research methodology

### 1.6.1 Research approach

Three major approaches are used in research studies, namely, qualitative, quantitative and mixed research methods (Creswell 2013:4). This study used a qualitative research approach to answer its research questions. Qualitative research involves exploring and understanding the meaning individuals or groups ascribe to a social or human problem, such as knowledge sharing (Creswell 2013:4).

### 1.6.2 Research design

The researcher used a case-study research design for this study. A qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon or social unit (Hamilton and Corbett-Whittier 2013:7). A case-study research design supported the investigation into the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals as it enabled the researcher to investigate the complexity and uniqueness of knowledge sharing amongst members of the vitual team as it happened in real life.

### 1.6.3 Population and sampling

Sampling is the collection of a small number of people taken from a larger population of people who may also be studied (Maree 2012:69). A population generally consists of all the people that the researcher is interested in studying (Maree 2012:69). For the purposes of this study, the

population was all 23 members of Hogan Lovells' virtual team of legal information professionals. The virtual team was made up of two geographically dispersed sub-teams, which consisted of all 6 team members based in the Johannesburg office and all 17 in the London office.

Sampling requires prior knowledge of the phenomenon to be studied. Hence, the decision of whom to sample for qualitative research studies is based on a focus on specific people or situations, such as the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals, because they offer a specific 'information-rich' perspective (Flick 2014:50). Two main types of sampling strategies are frequently used in research. These are probability sampling and non-probability sampling (Maree 2012:69). In non-probability sampling, the aim of the investigation is usually to create an in-depth description and not to generalise findings (Maree 2012:70). This study adopted the non-probablity sampling strategy. Therefore, the purposive sampling technique, a type of non-probablity sampling, was used. Purposive sampling is about deliberately selecting specific types of people who 'represent' and possess the characteristics required to achieve the study's research objectives (Collins 2015:82).

The sample frame consisted of all 23 members of Hogan Lovells' virtual team of legal information professionals. The researcher is a member of the virtual team and was able to access the virtual team's intranet site to retrieve a list of all the legal information professionals based in the London and Johannesburg office. The researcher sampled the entire population of Hogan Lovells' virtual team of legal information professionals. Out of 23 potential interviewees from the London and Johannesburg team, the researcher interviewed 14 Participants after arriving at a point of saturation. In terms of the location of the Participants, 4 were members of the Johannesburg team and 10 of the London team.

### 1.6.4 Data collection methods and procedures

This study made use of interviews to answer the research questions. Data collected using interviews resulted in a satisfactory level of description. The researcher conducted face-to-face, semi-structured, open-ended interviews using videoconferencing in order to obtain elaborate answers to questions covering the who, what, when, why and how of knowledge sharing among

Hogan Lovells' virtual team.

## 1.7 Scope and limitations of the study

The study was confined to Hogan Lovells' virtual team of legal information professionals, who apply their trade in a law firm. This is so because the point of the investigation was to examine how knowledge was shared amongst members of the virtual team.

## 1.8 Definition of key concepts

Some key concepts used in this study are defined below:

### 1.8.1 Law firm

A law firm can be described as a business entity formed by an association of one or more lawyers who provide legal consulting services to clients (Garner 2014:1018).

### 1.8.2 Knowledge

Knowledge is defined in the *Oxford Dictionary of English* as facts, information and skills acquired by a person through experience or education (Stevenson 2015).

### 1.8.3 Knowledge sharing

Knowledge sharing is an activity through which knowledge is exchanged between and among individuals or within and amongst teams, organisational units or organisations (Paulin and Suneson 2012:83).

### 1.8.4 Knowledge management

KM is a strategy or process of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that improve organisational performance (Kaufmann 2015:3). It entails a range of practices and techniques to create, share and exploit knowledge to achieve organisational goals (Jain and Jeppesen 2013:348).

### 1.8.5 Virtual team

A virtual team – also known as a geographically dispersed team – is a group of individuals who work across time, space and organisational boundaries, with links between them strengthened by ICTs (Nader, Shamsuddin and Zahari 2009:2654).

## 1.9 Organisation of the dissertation

The dissertation has been organised into five main chapters as follows:

**Chapter 1: Introduction**

The **first chapter** will provide an introduction and background to the study. The chapter provides a contextual setting to the study, statement of the problem and the purpose of the study. A brief account of the research methodology adopted is given. Other areas covered include the significance of the study, scope and limitation of the study and definition of key concepts. The chapter then ends with a summary of chapter one.

**Chapter 2: Literature review**

The **second chapter** covers the literature review of the study. This chapter outlines the literature review that supports the study of knowledge-sharing practices by legal information professionals. This includes a review of literature on relevant topics based on the set objectives including: description of a law firm; role of legal information professionals in law firms; description of a virtual team; discussion of why knowledge sharing is important and a basic model of knowledge sharing; description of the knowledge of the legal information professional; description of KM and sub-processes of KM; and discussions of knowledge-sharing practices, technologies barriers and enhancers. The chapter then ends with a summary of chapter two.

**Chapter 3: Research methodology**

The **third chapter** covers the research design and methodology of the study. It explains how the research was conducted and outlines the research approach, design, population and sampling, data collection methods and procedures, trustworthiness, ethical considerations, data analysis and presentation. The chapter then ends with a summary of chapter three.

**Chapter 4: Data analysis and presentation**

The **fourth chapter** covers the data analysis and presentation of the study. This chapter presents and discusses the findings of the study. The findings were obtained using the research methodology discussed in chapter three. The presentation of findings was done in accordance to the research objectives of the study. The chapter then ends with a summary of chapter four.

**Chapter 5: Conclusions and recommendations**

The **fifth chapter** covers the conclusions and recommendations of the study. This chapter is the last chapter of the study and it presents the summary of major findings and conclusions that were reached in the course of pursuing the study's research questions. It also provides recommendations of what the researcher considers to be necessary to enhance the knowledge-sharing practices in order to provide a superior information service to Hogan Lovells' lawyers. This chapter also provides suggestions for further research and then ends with final conslusions of the study.

## 1.10 Summary of chapter one

This chapter provided an overview of the dissertation. It also provided the context within which the study took place, presented the problem for the study, the aims and objectives, definitions of key concepts used, and an overview of the research design and methodology used in the study. Finally, the chapter provided an outline of the other chapters of the dissertation. The next chapter describes the role of legal information professionals in law firms and provides an overview of knowledge-sharing practices, technologies, barriers and enhancers.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

This chapter undertakes a review of literature relevant to the study of knowledge-sharing practices. A literature review is a search and evaluation of the available literature in a given subject or chosen topic area (Royal Literary Fund 2016). The purpose of the literature review was to identify studies that had been conducted on the research topic and also set the background and context for discussing the knowledge-sharing practices of Hogan Lovells' virtual team. The literature review is divided into the following sections, with a view to answering the research questions:

- description of a law firm;
- the role of legal information professionals in law firms;
- description of a virtual team;
- definition of knowledge and the difference between tacit and explicit knowledge;
- description of the knowledge of the legal information professional;
- description of KM and sub-processes of KM;
- description of knowledge sharing and a discussion of why knowledge sharing is important and a basic model of knowledge sharing;
- discussion of knowledge-sharing practices;
- discussion of knowledge-sharing technologies;
- discussion of knowledge-sharing barriers;
- discussion of knowledge-sharing enhancers; and
- a summary of Chapter 2.

The aforementioned topics are directly related to the study of knowledge sharing amongst members of Hogan Lovells' virtual team.

## 2.2 The law firm

Legal information professionals work within the context of a law firm. In order to understand their role at Hogan Lovells, it is crucial to first understand the concept of a law firm. According to Rahman (2012:16), the key role of a law firm is to provide legal services to its clients, while Garner (2014:1018) explains that it is a business entity formed by one or more lawyers to engage in the practice of law. Kay (2002) states that as highly skilled professionals with years of formal university and on-the-job training, lawyers use their knowledge to provide legal services to their clients. Olatokun and Elueze (2012:2) indicate that the business of lawyers is the sale of their knowledge in the form of solutions to their client's legal issues or problems. The main function of a law firm is to provide legal advice to individuals or corporations on what the law allows, including their rights and responsibilities, and if need be, to represent their clients in civil or criminal cases, business transactions and other matters in which legal assistance is required (USLegal 2016).

## 2.3 The role of legal information professionals in law firms

Information professionals who apply their trade in law firms are referred to as legal information professionals. Greer et al. (2007:12) describe them as individuals who design and manage services and resources that ensure the delivery of information to individuals or groups of individuals. In this vein, Demers (2012:5-7) adds that they are found where legal information is seen as an important resource and are needed to assist with questions about where to locate information and how to conduct searches for it. Furthermore, Demers (2012:6) indicates that legal information professionals provide legal information that different lawyers will interpret differently and that will lead to a variety of answers, conclusions and knowledge. In line with this, Kane (2016) explains that the role of legal information professionals is to provide a range of information-related services, such as managing the law firm's library; conducting in-depth legal research; and training lawyers on the use of internet-based legal research databases. In addition, Demers (2012:31) indicates that the key role of legal information professionals is to help their law firms and lawyers keep up to date with the law by providing seamless access to legal information.

## 2.4 Virtual team

In order to understand the knowledge-sharing practices of Hogan Lovells' virtual team, it is crucial to first understand the concept of a virtual team. Nader et al. (2009:2653) describe a 'team' as a small number of people with complementary skills, who are equally commited to a common purpose, goal and responsibility for which they hold themselves mutually accountable. As already noted in the previous sections, a virtual team is a specific type of team in which team members rely on technology-mediated communication (e.g. phone, e-mail, video conferences and instant messaging) rather than face-to-face interaction to communicate (Hill 2008:5). In line with this, Jenkins (2016:36) describes a virtual team as a group of geographically dispersed members brought together by ICTs to accomplish one or more objectives. In addition, Gressgard (2011:107) and Nader et al. (2009:2654) indicate that such teams make extensive use of a variety of ICTs, directed at sharing knowledge, which also enables geographically dispersed team members to coordinate their individual efforts in order to accomplish team tasks. Jenkins (2016:37) adds that, similar to co-located teams, they consist of individuals who are interdependent in their tasks and share responsibility for the outcome of those tasks. Virtual teams are teams of legal information professionals working in different offices and locations together (Nader et al. 2009:2654; Gressgard 2011:102; Jenkins 2016:36). According to Thomas (2014:9), members of a virtual team may be located in the same office, but can easily be located in another country or anywhere in the world. Hence, Hogan Lovells' legal information professionals are a virtual team because members of the team are located in the firm's London and Johannesburg offices. The next section defines the concept of knowledge and the two common types of knowledge.

## 2.5 Knowledge

In order to understand the knowledge-sharing practices of legal information professionals, it is necessary first to understand the concept of knowledge. Liew (2007) defines knowledge as cognition or recognition (know-what), capacity to act (know-how), and understanding (know-why) that resides within the mind or in the brain. Furthermore, Liew (2007), Nonaka and von

Krogh (2009:636) indicate that the purpose of knowledge is to improve our lives, as it allows humans to define, prepare, shape and learn to solve a task or problem. In addition to this, Nonaka and von Krogh (2009:636) define knowledge as the actual skill used to perform an activity. Therefore, someone has knowledge if he or she can perform a task or is able explain a situation in a way that results in the performance of a task (Nonaka and von Krogh 2009:636).

The literature deals with different types of knowledge. However, this research study focused on explicit and tacit knowledge. The next section explains the difference between tacit and explicit knowledge.

### 2.5.1 Explicit knowledge

Ma et al. (2014:1007) describe explicit knowledge as knowledge that can be expressed in words and numbers, and easily communicated and shared in the form of codified procedures. According to Bechina and Bommen (2006:110), it has a tangible dimension that enables it to be easily captured, codified and communicated. Frost (2010) adds that it is sometimes referred to as know-what (not know-how) knowledge, and is usually in the form of instructions or manuals which guide readers on 'what to do', for example a step-by-step guide. According to Brown and Duguid (1998:91), know-how knowledge complements know-what knowledge, as once a team member has discovered 'what to do', he or she will need know-how to put it into practice. Botha, Kourie and Snyman (2008:22) and Bechina and Bommen (2006:110) indicate that explicit knowledge is located in databases (such as KM systems), memos, notes, documents, telephone directories, instruction manual, a report of research findings, and so on.

### 2.5.2 Tacit knowledge

Gaál, Szabó, Obermayer-Kovács and Csepregi (2015:186) describe tacit knowledge as knowledge located in the minds of the individuals. According to Bechina and Bommen (2006:110), it is intangible and not easy to articulate, so it tends to be shared between team members through discussion, stories and personal interactions. Frost (2010) adds that tacit knowledge is in some cases referred to as know-how knowledge. Unlike explicit knowledge, it is not easily stored or documented (codified) in documents such as manuals and guides, since it is mainly based on a team member's experience (Frost 2010). For example, it is not easy to define

or document knowledge on how to ride a bicycle for the first time, even though most people can ride a bicycle. According to Nonaka (1994:16), tacit knowledge is context-dependent and personal in nature and is not easily communicated since it is deeply rooted in action, commitment and involvement. Ma et al. (2014:1006) indicate that it is mainly located in the minds of team members, resulting in KM system's inability to store, manage and retrieve this type of knowledge.

Given that the concept of knowledge and the two types of knowledge have been discussed, it is important to take a closer look at the knowledge of the legal information professional in order to understand what is being shared by means of the knowledge-sharing practices.

## 2.6 The knowledge of the legal information professional

In order to understand the knowledge-sharing practices of Hogan Lovells' virtual team, one must also understand the knowledge possessed by legal information professionals. Demers (2012:7) explains that legal information professionals work with a wide variety of legal information sources. Therefore, it is their responsibility to be familiar with information tools and know how and when to use them. According to Corrall and O'Brien (2011:299), the subject knowledge required to perform the role of a legal information professional includes: general knowledge of the legal system and profession; specialist knowledge of legal resources and research methodologies (at a level sufficient to teach others); and knowledge of the legal information professional's law firm.

Legal information professionals also need knowledge of legal vocabulary, jargon and acronyms in order to search for information effectively (Corrall and O'Brien 2011:299). According to Demers (2012:6), legal information professionals must combine their knowledge and information-seeking skills in order to retrieve legal information to help lawyers locate the laws, commentary and judicial decisions on the basis of which they can build their arguments. In addition, Corrall and O'Brien (2011:308) point out that the top ten areas of a legal information professional's specialist knowledge are: statutes or legislation, case law, legal research methodology, law reports, legal citations, legal terminology, official publications, legal system,

court system and law library administration. The next section examines knowledge managment processes, with specific reference to knowledge sharing.

## 2.7 Knowledge management processes

Shongwe (2016:141), Karkoulian, Halawi and McCarthy (2008:410) and Hong, Suh and Koo (2011:14418) explain that KM is recognised as one of the most important and valuable tools for organisations to stay competitive. It is a special set of approaches and processes that are aimed at identifying positive and negative uses of knowledge and systematically managing the effective usage of knowledge in different organisational operations by leveraging the latter's intellectual or knowledge-based assets in a manner which supports the organisation's overall objective/s or mission and thereby contributes to the wealth or competitive advantage of the organisation.

According to Chatti (2012:831), KM involves the creation, storage, sharing and application of valuable knowledge, expertise and insight within and across teams with similar interests and needs, the goal of which is to increase productivity, enhance the efficiency of team processes, and enhance the competitive advantage of the organisation. Ramadan, Dahiyat, Bontis and Al-dalahmeh (2017:443) indicate that the management of knowledge is an organisation-wide initiative that involves social interactions concerned with the creation, acquisition and sharing of existing knowledge, experiences and skills, both within and between individuals and teams. According to Ayoub, Abdallah and Suifan (2017:597), the quantity and quality of the knowledge of team members can be increased through the effective application of KM processes.

Stevenson (2015) defines a process as a series of actions, practices or steps taken in order to achieve a particular outcome. According to Ayoub et al. (2017:597) and Ramadan et al. (2017:441), KM processes are a set of practices that enable members of virtual teams to create, acquire, store, share, and use knowledge effectively in order to achieve objectives and enhance team performance. Furthermore, Ramadan et al. (2017:438-441) add that these are systemic processes for acquiring, organising and communicating both the tacit and explicit knowledge of team members in such a manner that other team members can benefit from them and become effective and productive in their work. They are a dynamic set of processes related to

coordinating and managing team-wide activities relating to the flows of knowledge in order to improve the effectiveness of generating, creating and sustaining knowledge in the pursuit of major team goals (Ramadan et al. 2017:438-441).

Ramadan et al. (2017:441-8) indicate that KM processes are significantly correlated with each other and that they are distinct and interdependent processes that create, acquire, store, share and apply knowledge. According to Ayoub et al. (2017:597), they guarantee that the right team members acquire the right knowledge at the right time and use it in the right way in order to improve different team processes. In line with this, Fombad (2014:5) observes that these processes create new knowledge, maintain existing knowledge and discard obsolete knowledge in order to enhance a virtual team's ability, speed and effectiveness in delivering its products or services for the benefit of clients. According to Huang and Lai (2014:41) and Andreeva and Kianto (2012:619), KM processes are aimed at managing and leveraging a virtual team's knowledge at an individual or team level in order to enable the virtual team to be more productive.

Several KM processes have been listed in the literature, with different researchers delineating them in different ways. Seleim and Khalil (2011) consider these processes to be knowledge acquisition, knowledge creation, knowledge documentation, knowledge transfer, and knowledge application. Zwain, Lim and Othman (2017) define them as knowledge identification, acquisition, storage, sharing and application. Kiessling, Richey, Meng and Dabic (2009) consider these processes as knowledge identification, collection, organisation, storage, sharing, and evaluation. For Ramadan et al. (2017), the processes are knowledge documentation and storage, creation, transfer, acquisition, and application. Evans, Dalkir and Bidian (2015) view them as involving identifying or creating, storing, sharing, using, learning and improving. Allameh, Zare and Davoodi (2011) consider these processes as knowledge creation, capture, organisation, storage, dissemination and application. For Shongwe (2016), the processes are knowledge transfer, storage, application, creation and acquisition. Based on the KM processes mentioned by these researchers, please note that 'knowledge transfer' and 'knowledge sharing' is generally used interchangeably depending on a researcher's preference.

Dawing on the different classifications, this study classifies knowledge mangment processes into the following five categories – knowledge creation, acquisition, storage, sharing and application. The next sub-sections define the five sub-processes of KM: knowledge creation, acquisition, storage, application and sharing.

### 2.7.1 Knowledge creation

Ma et al. (2014:1007) and Ou, Leung and Davison (2011:146) suggest that knowledge is created by team members through intensive communication. According to Shongwe (2016:146) and Erhardt (2011:89), knowledge creation involves expanding a team member's understanding and creating new knowledge or content from existing knowledge to replace existing stock of knowledge, such as ideas and solutions, through the sharing and conversion of tacit and explicit knowledge. For Shongwe (2016:146) and Probst, Raub and Romhardt (2000:224), knowledge creation is a series of activities or processes that focus on the capturing, acquisition and development of value-adding knowledge, such as new skills, new products, better ideas and more efficient processes. According to Shongwe (2016:146), knowledge is created by receiving education, interacting with other team members, and gaining experience through practice. Therefore, virtual teams generate new knowledge through action and interaction amongst their team members (Ou et al. 2011:146).

### 2.7.2 Knowledge acquisition

Chilton and Bloodgood (2013:111), Kaufmann (2015:3), Shongwe (2016:146) and Ayoub et al. (2017:597) indicate that knowledge acquisition is the activity of extracting or acquiring knowledge from an external source and interpreting, contextualising and developing it by understanding it and turning into a valuable resource that can be used within the virtual team. The main objective of knowledge acquisition is to obtain the latest and best knowledge to improve the virtual team's productivity. It involves locating, accessing, capturing and collecting knowledge from external knowledge sources. Therefore, knowledge creation and acquisition, in other words, is the process of generating and looking for new knowledge internally and/or acquiring it from external sources. According to Shongwe (2016:146) and Fombad (2014:7), knowledge can be acquired in several ways. It can be acquired or sourced from knowledge repositories or through research and development, education and training, by learning from

others, and learning from past experience.

### 2.7.3 Knowledge storage

Kiessling et al. (2009:427) maintain that knowledge storage is the process of storing the organised knowledge in a virtual team's repositories for the purposes of preservation, retrieval and multiple usage through the application of a number of retrieval tools and techniques. Shongwe (2016:146) suggests that knowledge storage refers to documenting knowledge that has been identified and acquired by team members and adding it to a virtual team's existing collection of explicit knowledge, which is captured and stored in a virtual team's knowledge repository. In line with this, Chilton and Bloodgood (2013:111) and Kaufmann (2015:4) add that documenting knowledge involves interpreting, filtering and categorising knowledge before it can be stored. In addition, Crowley (2005:121) and Shongwe (2016:146) assert that in order for knowledge to be retrievable, it must be organised and structured in such a manner that it is accessible and available at any time it is needed, as the main purpose of storing knowledge is to make sure that it can be used in the future. In support of this, Chilton and Bloodgood (2013:111) and Shongwe (2016:146) indicate that knowledge storage is concerned with the structuring and storing of knowledge in order to make it formalised and accessible to other team members within the virtual team, because knowledge that is still tacit and located in the minds of knowledgeable team members can be lost when the latter leave the virtual team. According to Shongwe (2016:146), knowledge can be stored manually, in manuals, the minutes of meetings, reports, policies and the many other physical documents of a virtual team, and electronically, in a virtual team's knowledge repositories.

### 2.7.4 Knowledge application

Knowledge has to be applied in a virtual team's routines and processes in order for a virtual team to become productive and efficient. In support of this, Shongwe (2016:146) and Fombad (2014:8) indicate that knowledge application refers to the actual use of knowledge that has been captured and stored in a virtual team's databases, or the knowledge in team members' minds. According to Chilton and Bloodgood (2013:111), it involves applying available knowledge to create new knowledge or integrating and utilising existing knowledge in a manner that enhances the value of products and services of the virtual team and ultimately leads to an increase in

customer satisfaction. Hence, the source of a virtual team's value in its products and services lies in how well its team members apply the available team knowledge (Shongwe 2016:146). According to Kaufmann (2015:4), this includes adapting how knowledge is used in other virtual sub-teams, revealing relevant knowledge, effectively applying it and creating valuable results for the entire virtual team. In addition, Chilton and Bloodgood (2013:111) note that it involves the processes through which team members identify and utilise the knowledge possessed by other team members without having to go through the process of acquiring or learning their knowledge. According to Shongwe (2016:146) and Ayoub et al. (2017:597), a virtual team's knowledge can be used in a way that results in or supports innovation, production, consulting, decision-making and problem-solving, along with many other tasks requiring the application of knowledge.

### 2.7.5 Knowledge sharing

Wang and Noe (2010:1), Hong et al. (2011:14418), Jeenger and Kant (2013:9) indicate that, of the five sub-processes, knowledge sharing is considered as the cornerstone of KM and is viewed as a critical success factor in its implementation. It is the focus of this study and will be given more attention. Flinchbaugh, Li, Luth and Chadwick (2016:137) and Hong et al. (2011:14418) describe knowledge sharing as the process of making knowledge available to others by exchanging knowledge among team members in order for them to collaborate on virtual team tasks, solve problems or implement ideas. Furthermore, Maponya (2005:904) and Hong et al. (2011:14418) explain that it is about effectively converting and transfering specific knowledge held by a team member to other members of the team in a form that can be understood, absorbed and used by team members who need it to engage in a certain activity or in solving problems. According to Wang and Noe (2010:117), knowledge can be shared via written correspondence or in face-to-face communications with more knowledgeable team members. In support of this, Wang and Ko (2012:424) indicate that the interactions can involve documenting, organising and capturing knowledge for others to use, or informal and/or formal interpersonal communications. Marouf and Khalil (2015:2) observe that knowledge sharing ensures that important information, knowledge and expertise is made available, distributed and exchanged amongst team members, within or across the entire virtual team.

Cleveland and Ellis (2015:29) indicate that knowledge sharing consists of two or more parties, made up of team members who are in possession of knowledge and team members who are seeking it. In a similar vein, Ma et al. (2014:1006) and Khalil and Shea (2012:44) suggest that knowledge sharing presumes a relationship between at least two parties, one that possesses knowledge and the other that requires knowledge; as a result, knowledge is sent by one party, and received and absorbed by another, through a process of effective communication, one which constitutes knowledge sharing. In other words, knowledge sharing encompasses not only the distribution of knowledge but also the process of searching for it from external sources or other team members within the virtual team (Cleveland and Ellis 2015:29). According to Wang and Ko (2012:424), it is essentially about knowledge continuously moving throughout a virtual team through the use of a diverse set of social and technical systems and processes that encourage and facilitate interactions amongst members of the virtual team in order for knowledge to be accumulated, reused and recombined in order to generate potential benefits.

Bakker, Leenders, Gabbay, Kratzer, and Van Engelen (2006:597) and Hong et al (2011:14418) point out that knowledge sharing occurs when team members interact with one another by defining the problem they have encountered, discussing options and sharing knowledge in which the result or byproduct of their interaction is to find a valuable solution to their problem or contribute to improved virtual team processes. In line with this, Cleveland and Ellis (2015:29) and Phung, Hawryszkiewycz and Binsawad (2016:73) indicate that knowledge sharing also involves participation in social interactions that guide or change the way a team member thinks by making him or her aware of other team member's personal insights, by capturing, organising, transferring and reusing the virtual team's experiential knowledge. Hence, Lindsey (2011:53) contends that simply making the knowledge available may not be enough to constitute knowledge sharing, as it may not necessarily make team members more knowledgeable.

Chilton and Bloodgood (2013:111) maintain that knowledge sharing involves sharing tacit and explicit knowledge amongst members of a virtual team. According to Ma et al. (2014:1005-1007), it is basically a set of approaches and processes that facilitate the exchange of different types of knowledge between team members. Knowledge sharing is actuated through the interactions and conversion between tacit and explicit knowledge, where existing knowledge is

converted into new knowledge. According to Khalil and Shea (2012:44), Maponya (2005:904) and Velmurugan, Narayanasamy and Rasiah (2010:145), it also involves distributing and making available the existing knowledge that is already possessed by team members and bringing new knowledge into the virtual team from external sources, so that it can be effectively used by other team members. According to Olatokun and Elueze (2012:2), knowledge sharing between team members is the process by which knowledge held by a team member is converted into a form that can be understood, absorbed and applied by other team members and thereby contribute to learning by both the individual team member and the virtual team as a whole.

Rangamiztousi and Tse Kian (2012:992) assert that knowledge sharing cultivates a positive environment amongst team members within virtual teams and supports processes that deliver the virtual team's goals and missions. In line with this, Zaglago, Chapman and Shah (2016:8) suggest that virtual teams cannot be successful without using knowledge as a strategic resource and facilitating the effective sharing and application of knowledge. According to Assefa, Garfield and Meshesha (2013:1), knowledge sharing is a means to transform an individual team member's knowledge into the virtual team's knowledge in order to create valuable results for the entire virtual team. In support of this, Velmurugan et al. (2010:145) indicate that knowledge sharing can enhance a team member's and virtual team's performance. According to Olatokun and Elueze (2012:3) and Cleveland and Ellis (2015:28), knowledge sharing between experts and inexperienced team members is successful if these team members work together by sharing ideas, information and knowledge in order to achieve the virtual team's aims and objectives, which also contributes to increased productivity and prolonged virtual team success.

Mitchell (2005:632) suggests that knowledge sharing within virtual teams enables team members to share the know-what (explicit) and know-how (tacit) knowledge and practices required to perform their work in order to direct the virtual team towards future development and growth. In this regard, Hong et al. (2011:14418) maintain that in order for knowledge sharing to take place in a virtual team, team members must be willing to make their knowledge available by sharing it with fellow team members who are in need of it. Furthermore, Assefa et al. (2013:1), Marouf and Khalil (2015:2) indicate that as these team members share knowledge, they also create new knowledge, which in turn facilitates individual team member's learning and empowers other

team members with new capabilities for carrying out tasks more efficiently for the virtual team. Hence, Gider, Ocak and Top (2015:42) suggest that creating new and useful knowledge, or obtaining it from external sources, plays an important role for virtual teams in terms of producing new or different services.

According to Marouf and Khalil (2015:2), knowledge sharing allows virtual teams to use their knowledge effectively by learning from past experiences, thereby reducing the time it takes to solve problems that have been faced in the past, developing new ideas and insights, and avoiding the repetition of past mistakes or having to reinvent the wheel. Hence, the value of knowledge sharing is associated with the fact that a virtual team's knowledge is unique and sharing such knowledge can improve the virtual team's performance. Ma et al. (2014:1005) and Marouf and Khalil (2015:2) therefore suggest that it is necessary to have a better understanding of the dynamic process of knowledge sharing and the factors that influence it. The alternative, as Olatokun and Elueze (2012:3) explain, is that a virtual team is bound to lose knowledge if the team member possessing it leaves the team without having stored his or her knowledge or otherwise shared it with the other members.

#### 2.7.5.1 Why should knowledge be shared in teams?

According to Okoroafor (2014:97), the collective knowledge of team members only becomes powerful if it is shared among those who possess common goals. In support of this, Ou et al. (2011:148) indicate that the greater the amount of knowledge shared in a virtual team, the greater the capability to solve problems in a more effective way. Therefore, Olatokun and Elueze (2012:2) suggest that in order to leverage knowledge, team members must share their knowledge and build on the knowledge of others. Furthermore, Hong et al. (2011:14418) and Jeenger and Kant (2013:1) maintain that effective knowledge-sharing practices allow team members to reuse and regenerate knowledge at an individual and virtual team level. Conversely, Hong et al. (2011:14418) suggest that the knowledge possessed by team members is likely to have a limited impact on the team's effectiveness unless every member's knowledge is shared with the other members. According to Olatokun and Elueze (2012:3), it is through the capturing, storing and sharing of knowledge that team members can be developed and the outcomes of their work processes enhanced. This is echoed by Hong et al. (2011:14418), who indicate that knowledge

sharing between team members is a process that contributes to learning by individual team members and the virtual team.

According to Zaglago et al. (2016:3), knowledge is created and shared through interaction between team members from different sub-teams within the virtual team. Although knowledge is 'owned or possessed' at the individual level, it is necessary to integrate individually held knowledge into virtual team knowledge by sharing it with others within the virtual team. In support of this, Phung et al. (2016:73) indicate that it is through interaction that knowledge, skills and experiences are shared among team members in the whole virtual team. Hence, Jeenger and Kant (2013:1) suggest that knowledge sharing not only allows two or more team members that are sharing knowledge to retain that knowledge; it is also amplified and expanded by sharing it with everyone in the virtual team.

Furthermore, Phung et al. (2016:73) regard knowledge sharing as a critical contributor to creativity and innovation among team members in traditional and virtual teams. In line with this, Khalil and Shea (2012:44) maintain that innovation can occur only when explicit and tacit knowledge interact. Rangamiztousi and Tse Kian (2012:992) and Velmurugan et al. (2010:145) point out that virtual teams improve their knowledge and innovative capabilities by utilising team members' talents and experiences by facilitating the capturing, sharing and application of their explicit and tacit knowledge amongst one another. Marouf and Khalil (2015:2) indicate that knowledge sharing is therefore an essential way in which the members of a virtual team can contribute to knowledge sharing amongst one another, which leads to the creation of new knowledge in the form of innovative team results that ultimately increase the virtual team's success.

#### 2.7.5.2 A basic knowledge-sharing model

As mentioned, the main purpose of this study is to explore the knowledge-sharing practices of Hogan Lovells' virtual team. Therefore, it is important to explain how a knowledge-sharing model relates to this study. A model called "basic knowledge-sharing model" is provided in this section. It is based on Nonaka and Takeuchi's (1995) knowledge conversion model in order to create a common understanding of knowledge sharing. Takeuchi and Nonaka's (1995)

knowledge conversion model described the process of how individuals convert tacit to explicit knowledge and vice versa. According to Kharabsheh, Bittel, Elnsour, Bettoni and Bernhard (2016:455), the basic knowledge-sharing model considers individuals and their knowledge and examines how knowledge conversions proceed first: within the individual and then, between two or more individuals. Furthermore, Kharabsheh et al. (2016:455) indicate that the basic knowledge-sharing model takes into account the fact that tacit knowledge makes up the larger part of a human's knowledge even if it cannot be expressed as easily as explicit knowledge. The basic knowledge-sharing model treats explicit knowledge as the shadow of tacit knowledge, and shows that individuals share tacit knowledge through the process of socialization without having the need to make it explicit.

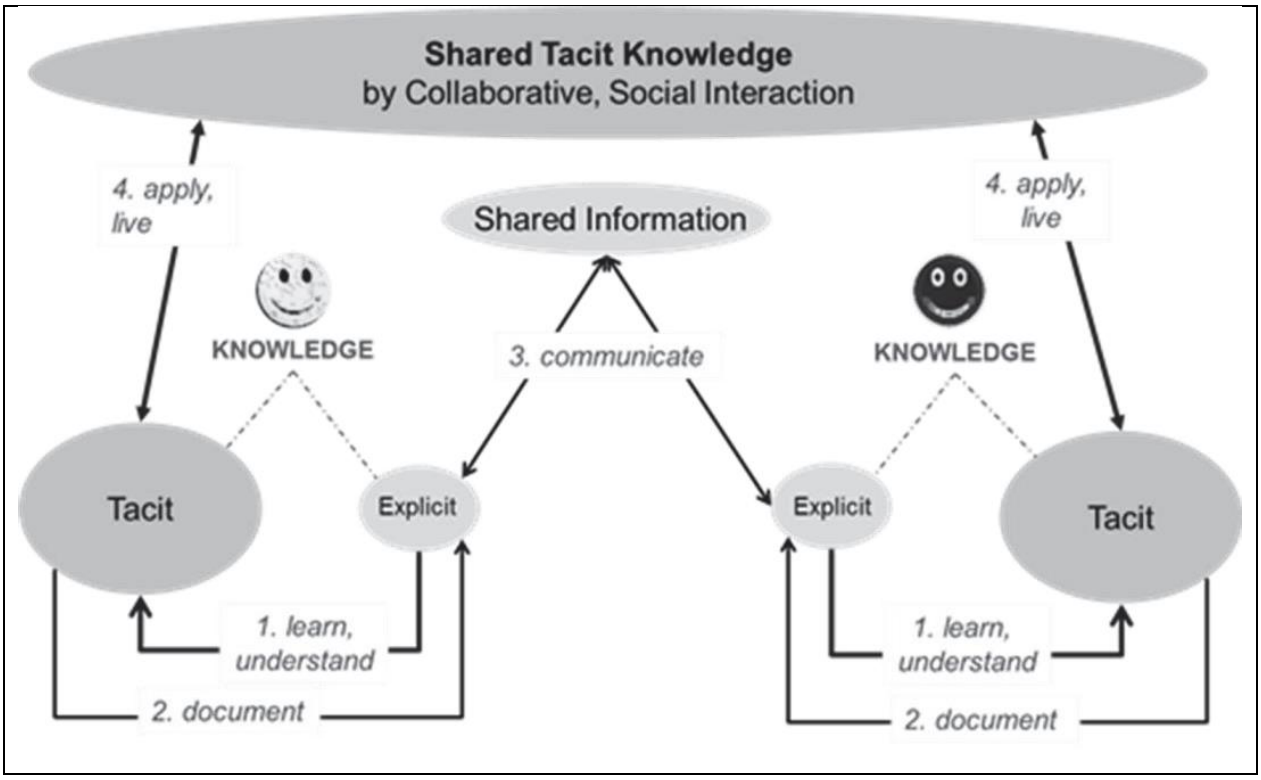


*Figure 1: Basic knowledge-sharing model - IECS*

- **First stage: individual knowledge conversion**
    1. A person converts his explicit into tacit knowledge by learning and understanding (internalisation).
    2. A person converts his tacit into explicit knowledge by, for example, documenting knowledge (externalisation).
- **Second stage: knowledge conversion between individuals**
    3. Individuals share their explicit knowledge by exchanging information

(combination).

4. Individuals share their tacit knowledge by interacting and collaborating, for example by applying it (socialisation).

According to Kharabsheh et al. (2016:455), knowledge sharing starts at an individual level since every individual has tacit and explicit knowledge to share with others. However, it is more challenging to share tacit knowledge since it cannot be easily expressed or articulated. In this regard, it is important to note that tacit knowledge makes up the larger part of a human's knowledge. Hence, individuals share their knowledge in different ways, depending on which dimension of their knowledge is at issue. In line with this study, the knowledge-sharing model underlies how knowledge is shared by legal information professionals using practices described in the next section.

## 2.8 Knowledge-sharing practices

According to Tahlelo (2016:34), knowledge-sharing practices are all the actions that are aimed at improving the internal flow and use of knowledge within a virtual team. In addition, Hsu (2008:1318) indicates that they are all considered practices that encourage and facilitate knowledge sharing amongst team members and equip them with the knowledge they need to do their jobs. These practices are initiated and implemented to diffuse or share knowledge amongst team members within virtual teams. In other words, knowledge-sharing practices are considered deliberate undertakings or mechanisms instituted by a virtual team's management in order to develop its team members. The following sub-sections describe the knowledge-sharing practices identified in the literature.

### 2.8.1 Codification and personalisation strategy

According to Atkova and Tuomela-Pyykkönen (2015:112), virtual teams can adopt a codification and personalisation strategy to knowledge sharing. The codification strategy focuses on codifying and storing explicit knowledge in databases so that it can be accessed and used by other members of the virtual team. The personalisation strategy usually involves sharing tacit knowledge through direct contact with the person in possession of this knowledge; commonly, it entails acquiring tacit knowledge that cannot be codified and stored in a database (Atkova and

Tuomela-Pyykkönen 2015:112).

### 2.8.2 Brainstorming

According to Young (2010:11), brainstorming is a simple way of helping team members to generate new and unusual tacit knowledge. According to Evans (2012:177), its purpose as a knowledge-sharing practice is to generate as much tacit knowledge as possible, and then, through discussion, to draw one or a few possible solutions from that tacit knowledge. Hence, brainstorming is considered a social process for sharing tacit knowledge amongst team members.

### 2.8.3 Coaching

According to Napierala, Selig and Berge (2005), coaching involves a team member learning by working alongside an experienced team member who knows when and how to intervene and share tacit knowledge. Napierala et al. (2005) explains that it differs from mentoring in that coaching is focused on a specific task or skill, whereas mentoring is a more general and all-encompassing relationship between mentee and mentor. Coaching, in short, is not mentoring: it aims specifically to develop new skills in a team member. According to Terblanche (2014:146), coaching in the context of teams has not been well researched. In support of this, Moe, Cruzes, Dyba and Engebretsen (2015:33) indicates that there is a need to understand the role of a coach in virtual teams. Furthermore, Moe et al. (2015:34) add that coaching a vitual team is more challenging than coaching a co-located team.

### 2.8.4 Apprenticeship

Chigada and Ngulube (2016:223) explain that apprenticeship programmes are designed for sharing tacit knowledge amongst experienced and inexperienced team members. According to Burke (2017:98), in traditional apprenticeships more experienced team members help inexperienced ones by letting them observe the process of completing a task, then assisting and, finally, working under the supervision of a guide. In this regard, Chigada and Ngulube (2016:223) note that during apprenticeship activities, experienced team members share their tacit knowledge with their inexperienced team members so that tacit knowledge of the team's practices is preserved. In line with this, Mládková (2012:109) indicates that the apprenticeship processes are replicated in coaching and mentoring. According to Burke (2017:99), apprenticeships enable team members to acquire tacit knowledge and gradually take ownership

of their responsibilities within a supportive team environment.

### 2.8.5 Subject-matter experts

According to Chigada and Ngulube (2016:223), subject-matter experts are experienced team members who demonstrate a mastery of a particular topic or job and play a crucial role in the virtual team by providing tacit knowledge in the form of solutions to inexperienced or less knowledgeable team members. Virtual teams are leveraging these team members to share tacit knowledge. According to Strang (2017:291), subject matter experts are always available and willing to share their tacit knowledge. In supoort of this, Poduch (2010:3-8) indicates that they are responsible for sharing what they know with others: they support team members in carrying out their work successfully by sharing their tacit knowledge.

### 2.8.6 Leveraging retirees

Salisbury (2014:1) indicates that team members who have retired possess tacit knowledge in the form of learned lessons and professional experience. This tacit knowledge may be valuable to inexperienced team members approaching similar circumstances. According to Salisbury (2014:1), experienced team members approaching retirement can pass down their tacit knowledge to their inexperienced or less knowledgeable team members. Chigada and Ngulube (2016:223) note that retirees can be used by virtual teams as consultants who provide critical tacit knowledge for special projects or assignments by mentoring less knowledgeable and inexperienced team members. The retirees are hired for a specific period of time in order to provide opportunities for tacit knowledge sharing. In doing so, virtual teams provide opportunities for retirees to share tacit knowledge of the many lessons they have learnt.

### 2.8.7 Job rotation

According to Peariasamy and Mansor (2008:93), job rotation is an opportunity to share tacit knowledge by sending people to other positions in the same or similar field of work within the virtual team. In this regard, Salleh, Chong, Ahmad and Ikhsan (2013:428) explain that the knowledge acquired from a prior position can be shared with other team members within the virtual team. Salleh et al. (2013:435) warn, however, that job rotation programs may not promote an effective knowledge-sharing environment within a virtual team, whereas Lee and Yu

(2011:677) suggest that team members' relationships with each other and willingness to share tacit knowledge with one another can be improved by using job rotation as a knowledge-sharing practice practice within a virtual team.

### 2.8.8 Face to face virtual meetings

Russel and Simone (2005:1) indicate that face-to-face virtual meetings are a highly useful way of sharing tacit knowledge among members of a virtual team. According to Salis and Williams (2010:440), face-to-face interactions are an effective medium for sharing tacit knowledge, one that allows immediate feedback that facilitates understanding and accurate interpretation by team members. Furthermore, Salis and Williams (2010:440) note that tacit knowledge can be effectively shared through face-to-face interactions, as the exchange of this knowledge requires situations that offer practical experience and learning. In line with this, Zaglago et al. (2016:5) suggest that face-to-face virtual meetings should always be encouraged, especially at the beginning of a virtual working relationship, in order for virtual team members to build close relationships with one another that will benefit tacit knowledge sharing in the long run.

### 2.8.9 Virtual communities of practice

Hong et al. (2011:14419) define community of practice (CoP) as a group of team members who have worked together over a period of time and through extensive communication have developed a common sense of purpose and a desire to share work-related tacit knowledge. According to Lee, Hong and Suh (2016:59), a virtual CoP consists of a group of team members who interact via electronic communication and share tacit knowledge through the use of ICTs, which is becoming a natural approach to sharing knowledge. In this regard, Hong et al. (2011:14419) indicate that members of a virtual CoP should be connected on a network, which is a powerful driver for knowledge sharing. Similarly, Hara (2009:15) explain that CoPs are given a variety of names by different organisations, including 'learning networks', 'thematic groups' and 'tech clubs'. According to Su, Wilensky and Redmiles (2011:115), virtual CoPs are seen as the solution to any knowledge-sharing problem faced by virtual teams. In support of this, Hara (2009:11) indicate that virtual CoPs are developed among team members due to the necessity of making it possible for team members who work in the same virtual team to learn from each other.

### 2.8.10 Mentoring

Allen and Eby (2007:8) describe a mentor as a guide, teacher and developer of skills. According to Karkoulian et al. (2008:412), mentoring is a form of tacit knowledge sharing, or training, that entails an association between a skilled or knowledgeable team member and a less-experienced team member in which the mentor provides guidance, support, and feedback to the mentee/learner. In line with this, Bryant (2005:323) suggests that mentoring provides a means for virtual teams to share tacit knowledge. Karkoulian et al. (2008:411) suggest that formal mentoring arises when the virtual team provides the support structures to ensure that its members have clarity of purpose and the support they may need to make a successful mentoring relationship (Karkoulian et al. 2008:411-412). On the other hand, informal mentoring occurs when two or more team members, without the assistance and guidance of the virtual team, establish a developmental alliance (Karkoulian et al. 2008:412). Furthermore, Bryant (2005:322) indicates that mentoring facilitates the sharing of job-related technical knowledge or skills that are critical for successful individual and virtual team performance.

### 2.8.11 Storytelling

Tobin and Snyman (2008:131) argue that the use of stories and storytelling is a powerful practice for supporting efforts by team members and virtual teams to share what they know. Similarly, Koskinen and Pihlanto (2008:107) maintain that by passing stories through communication networks, tacit knowledge may be maintained for long periods of time even as virtual team members come and go. According to Koskinen and Pihlanto (2008:107), knowledge sharing through storytelling is evident when two team members encounter a problem beyond their experience and together go through a storytelling process in which they work through various scenarios and testing procedures until they resolve the problem. During such a process, members told many stories of their individual experiences of problems they had encountered and how they resolved them; it was from those accumulated experiences, and through the sharing of their tacit knowledge, that a solution was found. These continuous processes of communication contribute to the development of team members' collectively shared tacit knowledge. In the same vein, Tobin and Snyman (2008:133-134) have suggested that storytelling is an effective way of sharing tacit knowledge and enabling team members to understand things in a meaningful and

relevant way (Tobin and Snyman 2008:133-134).

### 2.8.12 After Action Review

According to Annetta and Bronack (2011:119), After Action Review (AAR) is a structured review or debriefing process that analyses what happened, why it happened, and how it could have been done better by the individual team members or virtual teams that participated in the completion of a project or event. Villado (2008:4) describes it as an approach to tacit knowledge sharing that turns a recent event into a learning opportunity by formally reviewing how a task or project was completed in order to elicit knowledge of how it could have been completed more efficiently – knowledge that can be used by other team members in similar tasks or projects. In this regard, Anumba, Egbu and Carillo (2005:56) suggest that AARs enable team members to capture lessons learned and ensure that the tacit knowledge is shared and applied to the benefit of future projects, thereby preventing situations in which a solution has to be reinvented each time a similar problem is encountered. According to the Inter-American Development Bank (2012:1), AAR is a process that takes place after a task or project has been completed, and places emphasis on learning after doing or experiences so that team members can identify and share tacit knowledge of what worked and what did not in achieving a specific goal, completing a significant phase of work, resolving an issue, or closing a project.

### 2.8.13 Peer assist

Serrat (2010:300) explains that peer assists are events which bring together team members to share their insights into, and experience and tacit knowledge of, a particular challenge or problem. According to Greenes (2010:42), they are a knowledge-sharing practice that facilitates ‘learning before doing’: before attempting to overcome a new challenge or task, advice and tacit knowledge are requested from team members who are knowledgeable about, and have experience of, the matter at hand. Mead, Hilton and Curtis (2001:6-7) indicate that in peer assists, team members provide tacit knowledge, experience and practical help to each other in order to overcome a challenging situation. According to Greenes (2010:42), peer assists are facilitated work sessions, held face to face or virtually, in which peers from different teams share their experiences and tacit knowledge with a team that has requested help in meeting an upcoming challenge. Furthermore, Greenes (2010:42) notes that in peer assists, tacit knowledge

in the form of good practices, lessons learned and insights is typically shared through stories told by the team members who have relevant experience.

This section has provided information about knowledge-sharing practices that could be used by legal information professionals to share their knowledge. The next section discusses knowledge-sharing technologies that are deployed to facilitate these and other practices within a virtual team.

## 2.9 Technologies for knowledge sharing

Knowledge-sharing technologies are tools that support knowledge-sharing practices. Hence, virtual teams are employing ICT collaboration and communication tools to facilitate the sharing of knowledge amongst geographically dispersed team members and those in the same location (Subashini, Rita and Vivek 2012:544-545). According to Shahid and Alamgir (2011:11), the use of ICTs for knowledge sharing is essential for globally dispersed virtual teams. The following sub-sections describe the knowledge-sharing technologies identified in the literature.

### 2.9.1 Internet

Van der Merwe (2001:8) describes the Internet as an information system composed of a massive network of computers around the world. According to Lesley (2015), the internet is a platform for sharing knowledge as team members are able to find knowledge in the form of answers to their questions. Song (2002:25) indicates that the Internet is used by team members to retrieve knowledge which is then shared with other team members. Thus, virtual teams are using the explicit knowledge available on the Internet to support knowledge sharing amongst their members. In support of this, Harden (2012:3890) indicates that knowledge sharing occurs when members of a virtual team use the Internet as a vehicle for sharing knowledge.

### 2.9.2 Best practices databases

According to O'Leary (1998:35), best practices databases are databases that provide access to and contain knowledge of team processes in the form of the best ways of doing or carrying out tasks by capturing knowledge about the team's processes. Bhirud, Rodrigues and Desai (2005)

note that knowledge of the virtual team's best practices are shared through a dedicated database. Team members add their knowledge of best practices to these databases. As such, the latter are used to locate best practices by all the members in the virtual team. According to Farenhorst, Lago and van Vliet (2007:129), knowledge sharing among team members is supported by using the best practices databases to guide decision-making. Furthermore, Farenhorst et al. (2007:135) indicate that the best practices database contain reusable knowledge that can be used to repeat past decisions or guide decisions on a certain topic.

### 2.9.3 Expertise-locator systems

According to Koenig (2012), an expertise-locator system is a system which identifies and locates those team members within a virtual team who have expertise in a particular area. Janus (2016:35) points out that an expertise (or expert) locator identifies and provides convenient access to information to members of the virtual team about who the experts are on a given subject. It usually features a profile page on each expert which contains the team member's experience and specialty areas. Expertise locators offer a powerful way to connect team members who do not have the knowledge or expertise with knowledgeable colleagues. According to Ehrlich, Lin and Griffiths-Fisher (2007:117), expertise-locator systems can help to evaluate potential experts and facilitate conversations amongst team members. Furthermore, expertise-locator systems provide sufficient knowledge for the team member to choose whether to contact the expert or not.

### 2.9.4 Lessons-learned databases

Lee, Gillespie, Mann and Wearing (2010:478) indicate that lessons-learned databases are databases that contain knowledge gained from previous experience, knowledge of how colleagues have approached similar problems in the past, and information about efficient and effective ways for team members to carry out their work. In support of this, Jugdev (2012:13) maintains that lessons-learned databases are an efficient and effective way of sharing valuable explicit knowledge. They involve sharing knowledge about what went well, what could be improved and how issues can be addressed before a task is carried out again. According to Jugdev (2012:13), effective lessons learned can be embedded into a virtual team's practices. Thus, lessons-learned databases are an effective technology for capturing knowledge in the form

of lessons learned and making it available in a central location to the whole virtual team.

### 2.9.5 Incident report databases

Takahashi, Kadobayashi and Fujiwara (2010) define an incident report database as a database that contains explicit knowledge on incidents that have occurred. According to Boh and Wong (2013:128), a team member responding to an incident will document what happened during the incident in the form of an incident report. Hence, the authors note (2013:128) that knowledge of incidents are often shared with other team members via an incident report database, especially if the team member deems the incident to be reflective of a recurring problem or trend that affects team processes, or if the associated knowledge is seen as useful to other team members. Thereafter, team members often follow up with the knowledge provider to ask for more details about the incident. Furthermore, Boh and Wong (2013:130) indicate that incident reports basically document knowledge held by team members who have knowledge of the relevant incidents.

### 2.9.6 Blog (or web-logs)

Janus (2016:36) maintains that a blog, short for 'web-log', is a regularly updated website or webpage which is good way to share knowledge. According to Iglesias-Pradas, Hernández-García and Fernández-Cardador (2017:221), the content of a blog may contain knowledge in the form of text, images, videos and links to other blogs or websites. Iglesias-Pradas et al. (2017:221) asserts that blogs play an important role in facilitating knowledge sharing amongst members of virtual teams. They provide means to establish and support communication processes among team members in order for them to collaborate and share knowledge. Similarly, Chai, Das and Rao (2011:310) note that team members can use blogs to promote the sharing of knowledge within the virtual team.

### 2.9.7 Groupware

Cheah (2007:245) observes that groupware is software designed to facilitate collective working by a number of different users. Hence, the author notes (2007:245) that they are a popular means for team members to share knowledge using a number of computer applications. Common groupware applications are e-mail, calendars, document management tools, blogging tools and

other computer-based applications. Abdullah and Selamat (2007:220) concur that groupware can be harnessed to promote knowledge sharing amongst virtual teams. They explain (2007: 224) that groupware retrieves knowledge possessed by team members and makes it accessible to other team members through communication and collaboration. Ghani and Abdullah (2008:382) add that groupware technologies can be used by people working together in different locations, such as members of virtual teams.

### 2.9.8 Social media tools

According to Cevik, Aksel, Akoglu, Eroglu, Dogan and Altunci (2016:112), social media tools have become a means of sharing knowledge. In support of this, they (2016:112) believe that social media tools have an important role in sharing knowledge by facilitating interactions amongst team members that result in the communication of knowledge. According to Irani, Sharif, Papadopoulos and Love (2017:1049), social media tools provide a platform to connect team members and enable them to share explicit knowledge. Irani et al. (2017:1049) indicate that virtual teams have been using IT in the form of social media tools to facilitate team-wide knowledge sharing. According to Janus (2016:36), knowledge sharing via social media tools allows members of virtual teams to build stronger relationships with each other and provides them with access to knowledge that can be shared due to their relationships with other team members. Common social media tools are SocialDrift, Buffer, Sprinklr, Salesforce Social Studio.

### 2.9.9 Electronic document management systems

An electronic document management system is a software program that manages the creation, storage and control of documents electronically. According to Trögl and Maier (2011:231), a huge amount of knowledge is shared by transferring electronic documents between team members. Hence, team members take part in document-based knowledge sharing through the use of document management systems. In this regard, Trögl and Maier (2011:234) note that documents are often used as instruments to support knowledge sharing. Similarly, Sumita, Nakayama, Sakai, Manabe and Suzuki (2000:1) explains that explicit knowledge is knowledge that could be shared using a document, such as documents on best practice and on how to perform various team procedures. According to Galandere-Zile and Vinogradova (2005:185), a large networked collection of documents that contain and link team member's knowledge can

facilitate knowledge sharing. Furthermore, Galandere-Zile and Vinogradova (2005:181) indicate that knowledge of a team's routines, processes, practices and norms often become embedded in documents.

### 2.9.10 Intranet

Averweg (2009:179) describes an Intranet as an in-house version of the web browser and a private network designed to serve the internal (explicit) knowledge needs of a single team. It is a local or restricted communications network. Furthermore, Averweg (2009:192) indicates that it is seen as a more efficient way of sharing knowledge within virtual teams. According to Rajalampi (2011:10-13), an Intranet aims to make important knowledge available to all the virtual team's members who may find it useful or need to apply it in order to carry out their responsibilities. A key use of most Intranets is to find documents that 'point' to team members who have knowledge and expertise. This helps team members to work more professionally and efficiently. Inasmuch as it acts as a centre for information, knowledge, collaboration and everyday work, the Intranet should be viewed as a strategic tool that helps the team members to achieve their individual and team objectives (Rajalampi 2011:10-13). In support of this, Averweg (2009:178) indicates that intranets enhance a virtual team's knowledge-sharing practices.

### 2.9.11 E-mail

Tedmori (2008:11-12) describe e-mail – electronic mailing – as a method of exchanging digital messages across the Internet or other computer networks. According to Tedmori (2008:11-12), e-mails are an important collaboration tool and channel for communicating knowledge amongst members of a virtual team. In support of this, Wedgeworth (2008:12) indicates that the process of sending and receiving e-mails back and from the same team members results in the sharing of knowledge among members of the virtual team who were party to the correspondence. Furthermore, Tedmori (2008:12) suggests that the knowledge, information or tips contained in e-mails can be accessed and reused by a team member whenever the need arises. In addition, Wedgeworth (2008:14) explains that team members should want to use the knowledge contained in e-mails again and again. It is for this reason that e-mails that have captured and contain knowledge can be archived and used as a knowledge repository. In support of this, Wedgeworth

(2008:67) indicates that archiving personal e-mails results in a repository of e-mail conversations, which is useful for the purposes of managing and sharing knowledge.

### 2.9.12 Videoconferencing

Bexci and Subramani (2013:22) and Kamakari and Drigas (2010:611) define videoconferencing as a set of communication technologies that allow individuals at two or more locations to communicate by simultaneous two-way video and audio transmission; this can be as simple as a conversation between team members in private offices (point-to-point), or involve several (multipoint) sites in large rooms at multiple locations. According to Alkhaldi, Yusof and Aziz (2013:410) and Panahi, Watson and Partridge (2013:9), videoconferencing technologies resemble face-to-face interaction and enable virtual team members to simultaneously interact and share knowledge from two or more locations via two-way video and audio transmissions. The authors note (2013:411-412) that videoconferencing was created to enhance geographically dispersed virtual teams, in part by helping them to build trusting relationships and share knowledge more effectively.

### 2.9.13 Instant messaging

Correa da Silva and Agusti-Cullell (2008:81-82), Apistola and Gottschalk (2011:242), Nardi et al. (2000:80), and Li, Chau and Lou (2005:103) indicate that an instant messaging system is designed for the primary purpose of enabling real-time text-based communication between two or more team members by facilitating conversations and interactions in which team members take turns as sender and receiver of messages during their dialogue. In line with this, Ou et al. (2011:146) indicate that instant messaging connects members of a virtual team, creating communication patterns that can positively affect knowledge sharing by facilitating team member's searches for solutions or knowledge across the virtual team. According to Hara (2009:121), instant messaging is often used for informal conversations and can stimulate spontaneous knowledge sharing. Furthermore, Nardi et al. (2000:79-81) indicate that it is frequently used to support quick questions and clarifications, coordination and scheduling, organising unplanned social meetings, and keeping in touch with team members about ongoing work tasks. In this regard, Ou et al. (2011:143) and Nardi et al. (2000:79-81) underline that instant messaging tools have the capability to facilitate informal and instant interactions amongst

team members.

### 2.9.14 Wikis

Tahlelo (2016:48), Atwood (2009:50) and Mansour, Abusalah and Askenas (2011:2) define a Wiki as an online platform or webpage that is open and allows team members to quickly add and edit information; it also enables team members to add, modify or delete content in a collaborative environment. According to Atwood (2009:50), Wikis enable team members to contribute knowledge directly into the existing knowledge base of the virtual team by allowing the webpages to include input and viewpoints from a number of different team members and sources. According to Hu, Zhao and Zhao (2007:24), they provide a virtual team with a knowledge-sharing platform that facilitates the co-construction of knowledge by various members of the virtual team. In this regard, Garcia-Perez and Ayres (2010:44) believe that Wikis are particularly relevant as they allow team members not only to post knowledge into a team-wide space but also to collaborate in building a knowledge base by editing knowledge that has been posted by others on the Wiki platform.

### 2.9.15 Knowledge repositories/databases

Ramasami (2011:160) defines a knowledge repository as a computerised system that systematically and continuously captures, organises, categorises and analyses a virtual team's knowledge. According to Ramasami (2011:141-142), a knowledge repository's function is to codify explicit knowledge in a logical manner or in a way that will direct a team member to resources that can guide and inform a team member who is seeking knowledge. The author adds (2011:160) that knowledge repositories enable team members to work together in an effort to store useful explicit forms of knowledge, such as rules and procedures, in the repository in order for it to be retrieved whenever the need arises and to preserve the virtual team's knowledge. According to Kankanhalli, Tan and Wei (2005:114) and Ramasami (2011:160), the knowledge repository emphasises capturing, organising, codifing and storage of knowledge in such a way that facilitates the reuse and access to the codified knowledge.

This section examined knowledge sharing technologies that legal information professionals could potentially use to share their knowledge. The next section discusses knowledge-sharing

barriers that can affect the legal information professional's knowledge-sharing practices.

## 2.10 Virtual barriers of knowledge sharing

Rangamiztousi and Tse Kian (2012:992) note that knowledge-sharing practices are not always successful in virtual teams: there are scenarios or barriers that block knowledge sharing. According to Assefa et al. (2013:1) and Wendling, Oliveira and Macada (2013:240), knowledge-sharing barriers oppose and disrupt the flow of knowledge among team members, posing a challenge to knowledge-sharing initiatives. Therefore, it is important to identify and understand these barriers, as they affect knowledge sharing-practices; they are also of focal interest to this study, which aims to bring to light the knowledge-sharing challenges facing legal information professionals in virtual teams. Barriers to knowledge sharing arise from a combination of individual, organisational and technological factors (Assefa et al. 2013:2). The next sub-sections describe these three factors.

### 2.10.1 Individual barriers to knowledge sharing amongst team members

Individual factors that act as challenges and barriers to knowledge sharing include lack of communication skills, knowledge hoarding, personal relationships, motivation to share knowledge, time constraints, trust, culture, gaps in awareness of knowledge, and tacit versus explicit barriers to knowledge. The following sub-sections describe these individual barriers.

#### 2.10.1.1 Communication skills

Riege (2005:24) and Assefa et al. (2013:6-9) indicate that communication skills include both verbal and codification skills. Team members need to be able both to express their ideas verbally and document them in writing if they are to share their knowledge effectively; conversely, as Riege (2005:24) points out, when they have poor communication skills, team members are unable to share knowledge amongst one another.

#### 2.10.1.2 Knowledge hoarding

Khalil and Shea (2012:45) indicate that team members' unwillingness to share their knowledge is a dominant knowledge-sharing barrier. Knowledge hoarding is a natural human tendency.

According to Wendling et al. (2013:241), team members hoard or struggle to share their knowledge, as sharing it will result in the development of others. However, Assefa et al. (2013:6) indicate that some team members are happy to share their knowledge and see it being used by others. Furthmore, it is difficult to identify the team members that do not want to share their knowledge, because knowledge is an intangible resource. Therefore, it is difficult to know whether team members are hoarding their knowledge or not (Assefa et al. 2013:6). Riege (2005:24) and Mitchell (2005:633) explain that team members hoard their knowledge to protect themselves or maintain trade secrets, a certain status, reputation or power, because sharing knowledge is perceived as weakening a team member's role, power or status within the virtual team. According to Velmurugan et al. (2010:151), it is such factors that cause a team member to be unwilling to participate in virtual teams or to share their knowledge with virtual team members.

#### 2.10.1.3 Personal relationships

According to Wendling et al. (2013:240), the relationship between members of a virtual team, especially that between members of its different sub-teams, has an influence that could present a barrier to knowledge sharing. Rangamiztousi and Tse Kian (2012:992) indicate that team members need to have a relationship based on cooperation in order to share their knowledge with their fellow team members. In this regard, Riege (2005:24) and Assefa et al. (2013:7) note that lack of contact and interaction between team members is a possible barrier to knowledge sharing, in that it results in weak personal relationships that act as an interference in effective knowledge sharing. However, Khalil and Shea (2012:45) suggest that the reputation of the team member seeking the knowledge, including his or her past interactions and the likelihood of future exchanges of knowledge, influences the likelihood of building a relationship for the purposes of knowledge sharing. In line with this, Assefa et al. (2013:7), indicate that unless team members have good personal relationships, they may not be willing to ask other team members for assistance when they lack the knowledge to complete a task and would rather consult or acquire knowledge from alternative sources, such as documents or the Internet. As such, Khalil and Shea (2012:46) point out that it is important to note that emotions and personal relationships may affect the willingness of team members to share knowledge amongst one another: for instance, it is not very likely that two team members with an unfriendly and spiteful relationship will share

knowledge with one another.

#### 2.10.1.4 Motivation to share knowledge

A lack of motivation is a significant barrier to knowledge sharing. Velmurugan et al. (2010:145) observe that it is well-known that motivating team members to take part in knowledge sharing activities is not easy. In support of this, Phung et al. (2016:76) point out that motivation has a strong influence on the knowledge-sharing behaviors of team members. Similarly, Khalil and Shea (2012:45) indicate that team members may not want to share their knowledge with other team members, simply because they are not motivated enough. According to Mitchell (2005:633), one reason for the lack of knowledge sharing is that team members are not interested in sharing their knowledge and as a result, resistance or lack of interest in sharing knowledge deprives other team members of the opportunity to gain knowledge from their colleagues. Therefore, team members have to be motivated to share their knowledge (Mitchell 2005:633). Failing this, a lack of motivation can prevent knowledge sharing even when the virtual team has been provided with all the required conditions (Khalil and Shea 2012:45; Phung et al. 2016:76).

#### 2.10.1.5 Time constraints

Riege (2005:24) notes that a lack of time dedicated to knowledge sharing is a common knowledge-sharing barrier. Thus, the availability of time affects a team member's attitude to sharing or withholding knowledge (Assefa et al. 2013:5). In line with this, Kimble, Li and Blanchflower (2000:6) indicate that even when team members are prepared to share knowledge with each other, the sheer time and effort required to do so can be a serious problem. According to Riege (2005:24), time restrictions are a reason why team members may potentially hoard their knowledge rather than spend time in sharing it. Furthermore, Cleveland and Ellis (2015:35) indicate that team members perceive time as a limited, valuable and scarce resource. Hence, team members who work under time pressure often avoid assisting colleagues in need of specific knowledge, regarding knowledge systems as time-consuming tools of questionable value (Cleveland and Ellis 2015:35). According to Assefa et al. (2013:5), if knowledge sharing is not directly related to solving team members' problems or improving their capabilities, it is considered a waste of time, and team members will not have a positive attitude towards knowledge-sharing initiatives. Therefore, a lack of time for knowledge sharing is a barrier that is

experienced by both contributors and seekers of knowledge within an virtual team (Cleveland and Ellis 2015:35).

In addition, as Velmurugan et al. (2010:147) note, virtual teams working from separate locations may have varying time zones. Zaglago et al. (2016:3) confirm that, when teams work across time zones, the time differences can make make matters difficult. According to Velmurugan et al. (2010:147) and Zaglago et al. (2016:3), virtual teams experience a problem with accommodating all members of a virtual team from different time zones, including the constraints (and advantages) of those time zones.

#### 2.10.1.6 Trust

Cleveland and Ellis (2015:37) indicate that a lack of trust has been found to be a significant barrier to knowledge sharing between team members. Similarly, Phung et al. (2016:76) indicate that most team members are unlikely to share their knowledge if they do not trust the team member with whom they are about to share it. As Riege (2005:25) explains, most team members want to trust that their colleagues will not misuse their knowledge; they also need to trust that the source of the knowledge is accurate and credible. Phung et al. (2016:76) and Khalil and Shea (2012:45) suggest that team members are capable of misusing knowledge or taking unjust credit for it, which will result in a loss or lack of trust between team members. Moreover, Hong et al. (2011:14418) indicate that if a team member does not trust the knowledge they receive, they are clearly unlikely to make full use of it. In this regard, Zhou and Nunes (2016:7) observe that in the absence of trust, formal knowledge-sharing practices may be insufficient to encourage team members to share knowledge with others in the virtual team. Thus, Phung et al. (2016:76) asserts that a lack of trust among team members is the biggest barrier impeding team members from sharing knowledge with each other in a virtual team. In line with this, Velmurugan et al. (2010:152) indicate that members of a virtual team do not have a high level of trust in each other, especially at the early stage of virtual team implementation.

Kimble et al. (2000:6) suggest that the most challenging aspects of working in virtual teams is the issue of trust in the new electronic environment. Zaglago et al. (2016:4) also point out that the lack of trust among virtual team members may result in cooperation and collaboration

difficulties in newly formed teams, difficulties that act as a knowledge-sharing barrier. Team members from different national or cultural backgrounds may face additional challenges in forming trusting relationships. According to Velmurugan et al. (2010:146), team members may not be willing to share what they know if there is a lack of trust among virtual team members.

#### 2.10.1.7 Culture

Culture has been widely recognised as a key factor in successful knowledge-sharing initiatives. Natarajan (2008:9), Phung et al. (2016:77) and Velmurugan et al. (2010:153) define culture as the beliefs expressed in the shared values, benefits and practices that govern the way individuals act and behave in a team; culture included language, traditions, myths, rituals and stories. Riege (2005:24) notes that a virtual team's culture is learned and shared by all of its members, which results in a common mind-set amongst all the members of a virtual team. According to Jeenger and Kant (2013:4), a lack of a friendly environment, commitment or involvement of team members is a major culture-based knowledge-sharing barrier in virtual teams. Furthermore, Jeenger and Kant (2013:4) believe that the fears and attitudes of team members are important factors that have an influence on knowledge sharing. In line with this, Riege (2005:24) indicates that knowledge-sharing problems which stem from the national culture and language spoken by team members have little relevance on teams located in one office. However, they are certainly a factor that cannot be ignored by virtual teams that rely on knowledge-sharing practices between two geographically separated locations (Riege 2005:24). In line with this, Zaglago et al. (2016:4) points out that although the large diversity of cultures and languages spoken in the world do not restrict organisations from establishing virtual teams. However, they do play a vital role in the knowledge-sharing practices of its team members. In support of this, Velmurugan et al. (2010:153) and Zaglago et al. (2016:3) indicate that the diversity of countries and cultural backgrounds that team members come from increases the complexity of global virtual teams.

#### 2.10.1.8 Gaps in awareness of knowledge

According to Riege (2005:25), some team members may be unaware of how valuable the knowledge they possess could be to others in the team. As such, Khalil and Shea (2012:45) suggest that this gap in team member’s awareness of the value and benefit of their knowledge to others may also inhibit them from sharing it. As a result, as Riege (2005:25) notes, neither the

knowledge source nor the potential recipient is too concerned about team members that require or possesses knowledge. Therefore, a team member may think that his or her knowledge is not useful to others, unaware that others could find it useful (Khalil and Shea 2012:45). According to Wendling et al. (2013:241), this is due to the fact that those that have knowledge are not visible and those who need knowledge do not know those who have it. Consequently, as Atkova and Tuomela-Pyykkönen (2015:107) indicate, team members do not know what other members of the virtual team are doing or what they know, which leads to duplication of effort or time wasted in searching for solutions or knowledge that someone on the virtual team already possesses. According to Riege (2005:25), unawareness of one another's knowledge is among the biggest knowledge-sharing barriers in organisations.

#### 2.10.1.9 Tacit vs explicit knowledge barriers

According to Atkova and Tuomela-Pyykkönen (2015:113), knowledge sharing is complicated by the nature of the two types of knowledge and the fact that explicit knowledge tends to be easier to transfer than tacit. In the same vein, Riege (2005:25) indicates that a knowledge sharing barrier is caused by team member's dominance in sharing explicit knowledge over tacit knowledge. For example, some team members believe that if they produce a report (explicit knowledge) to complete a task, other team members should be able to find all of their knowledge about that task in their report (Assefa et al. 2013:7). However, Assefa et al. (2013:7) indicate that the explicit knowledge which is documented in products such as reports, often does not contain the same level of knowledge as tacit knowledge that is located in a team member's mind, which could be shared via direct interaction with, or explanation or demonstration by, the team member who is in possession of this knowledge. In this regard, Velmurugan et al. (2010:147) indicate that virtual teams depend on explicit knowledge sharing, given the inability of ICTs to facilitate genuine face-to-face interaction, which is the main method of sharing tacit knowledge. However, explicit knowledge requires that knowledge be codified or documented, but if there is a lack of explicit knowledge upon which team members can rely, this too has a negative impact on the virtual team's knowledge-sharing practices (Velmurugan et al 2010:147).

### 2.10.2 Organisational barriers to knowledge sharing

Organisational factors that act as challenges and barriers to knowledge sharing include

investment or financial support, team goals and strategy, team structure, communication, culture, and management support. The following sub-sections seek to describe these organisational barriers.

#### 2.10.2.1 Investment or financial support

Financial constraints are a key knowledge-sharing barrier in virtual teams. Jeenger and Kant (2013:3) indicate that the knowledge sharing practices facilitated by ICTs are a necessity for virtual teams because without them efficient knowledge sharing cannot take place in these teams. As such, Riege (2005:26) highlights that it is important for virtual teams to make financial commitments to knowledge-sharing practices. In many cases the latter can be expensive: Jeenger and Kant (2013:2) note that the costs associated with the implementation and maintenance of infrastructure for knowledge-sharing systems are a challenge. Riege (2005:26) thus suggests that adequate resources need to be allocated to support knowledge sharing. However, a lack of funds dedicated to the initial investment, development and running/operational maintenance costs of knowledge sharing systems is a major financial barrier to knowledge sharing (Jeenger and Kant 2013:3). Hence, knowledge sharing practices are bound to fail in the absence of basic infrastructure to facilitate knowledge-sharing capabilities (Riege 2005:26).

#### 2.10.2.2 Team goals and strategy

Jeenger and Kant (2013:2) argue that knowledge-sharing activities which are not aimed at supporting the virtual team's processes are a knowledge-sharing barrier. By implication, knowledge sharing should be based on achieving the objectives of virtual teams in order to provide the organisation with a competitive advantage (Jeenger and Kant 2013:2). The success or failure of a knowledge-sharing strategy is dependent on how well it supports the goals and strategy of the virtual team (Riege 2005:26). Hence, the most successful knowledge-sharing strategies are those that overcome team-wide problems and are linked to the virtual team's objectives (Riege 2005:26).

#### 2.10.2.3 Team structure

Wendling et al. (2013:241) indicate that the way virtual teams organise themselves appears to be a barrier to effective knowledge sharing. According to Jeenger and Kant (2013:2), a virtual

team's structure is a factor that cannot be easily changed in the short and medium term, such as the design or organogram. Furthermore, Wendling et al. (2013:241) point out that virtual teams with structures that consist of team members divided into a number of offices and locations will experience difficulties in sharing knowledge between and among their team members. Atkova and Tuomela-Pyykkönen (2015:107) note that the complexity of such virtual team structures results in numerous barriers and challenges to the effective sharing of knowledge. For example, Velmurugan et al. (2010:145) indicate that the creation of a virtual team setting has the potential to discourage team members from sharing their knowledge due to a fear of collaboratively communicating with new colleagues in the virtual team.

#### 2.10.2.4 Communication

Lindsey (2011:52) describes communication as the process of sharing knowledge between one individual and another. According to this author (2011:51), a knowledge-sharing transaction is a form of communication that involves the sharing of knowledge from one individual/s to another. Jeenger and Kant (2013:2) point out that where knowledge sharing occurs only amongst a few or the same team members in a virtual team, this a knowledge-sharing barrier that is caused by a lack of communication within the virtual team as a whole, perhaps as an outcome of the virtual team's structure. Communication flows within virtual teams should not be restricted to a small group of team members.

#### 2.10.2.5 Culture

Hong et al. (2011:14418) and Khalil and Shea (2012:46) indicate that cultural factors are regarded as naturally inhibiting knowledge sharing and are the most-cited barrier to knowledge sharing. Similarly, Wendling et al. (2013:241) notes that cultural differences between members of a virtual team have been identified as one of the greatest barriers to effective knowledge sharing. According to Riege (2005:27), a virtual team's culture is the way things are done in the team, and determines the degree of interaction used to accomplish work by team members on a vertical and horizontal level of the virtual team structure. In line with this, Velmurugan et al. (2010:147) pointed out that virtual teams also experience the constraints of culture on their knowledge sharing practices. Wendling et al. (2013:241) point out that virtual teams located in different countries have different ways of working, which sometimes hinders interaction and

causes conflict. According to Rangamiztousi and Tse Kian (2012:994), a common reason why knowledge-sharing practices do not succeed is that, instead of implementing them in such a way as to complement the virtual team's existing culture, virtual teams strive to change their culture to complement their knowledge-sharing practices. However, a virtual team's culture cannot be easily changed, as it is rooted in the core values and mission of the team (Atkova and Tuomela-Pyykkönen 2015:108). In addition, Velmurugan et al. (2010:153) indicate that members of a virtual team might not be aware of their cultural differences or willing to learn about each other's cultures. Furthermore, Phung et al. (2016:77) note that an unsupportive virtual team culture does not deliver adequate support for knowledge-sharing practices and will hinder knowledge-sharing.

#### 2.10.2.6 Management support

Riege (2005:27) points out that a lack of managerial direction and leadership can limit knowledge-sharing practices. Hence, management is one of the most critical elements for successful knowledge sharing. According to Jeenger and Kant (2013:2), management must get involved by providing support and taking the necessary steps towards effective knowledge sharing. They are responsible for building a knowledge-sharing culture because knowledge sharing is voluntary (Wendling et al 2013:241). Therefore, the challenge to managers is to create an environment in which team members both want to share what they know and make use of what others know, instead of hoarding knowledge (Riege 2005:28). However, Jeenger and Kant (2013:2) indicate that knowledge-sharing barriers arise because managers do not realise the real benefits of knowledge sharing and do not have confidence in knowledge-sharing systems. In line with this, Riege (2005:26) indicates that a successful management style in the physical workplace does not necessarily translate into effective management in virtual teams. It is management's responsibility to stimulate knowledge sharing amongst team members in a transparent fashion in order to obtain support for it. However, managers find it difficult to ensure that virtual team members participate in knowledge sharing (Velmurugan et al 2010:147). According to Riege (2005:26), their attempt to inspire knowledge sharing amongst team members often fails because the communication of knowledge sharing goals and objectives is either too vague or too detailed, in neither case providing a clear picture and guidelines to inspire team members to participate in knowledge sharing. Thus, virtual teams may fail to have sufficient management support due to misinterpretation of goals and objectives communicated

by their managers (Velmurugan et al. 2010:147).

### 2.10.3 Technological barriers to knowledge sharing

Velmurugan et al. (2010:145) indicate that knowledge sharing is increasingly occurring online or virtually because of ICTs. However, technological factors can also act as challenges and barriers to knowledge sharing. According to Riege (2005:24), many knowledge-sharing practices depend on ICT infrastructure. However, Velmurugan et al. (2010:153) point out that ICTs can also be one of the biggest barriers in restricting the use and sharing of knowledge through virtual teams. According to Wendling et al. (2013:250), ICTs play a major role in knowledge sharing among the members of virtual teams, but they do not completely replace face-to-face communication amongst team members. Another major problem is that some of the ICTs are difficult to use (Velmurugan et al 2010:154). In addition, as Marouf and Khalil (2015:4) indicate, ICTs that are inadequate in meeting team members' expectations can also impede knowledge sharing due to a mismatch between team members' expectations of what ICTs can do for them and what ICTs can actually deliver. For example, knowledge-sharing technologies that match team member's expectations should support the work-related processes of team members by facilitating the sharing of knowledge (Riege 2005:30). Although existing and new ICTs are capable of supporting effective knowledge-sharing practices, as virtual teams evolve, certain processes change and, as a result, some processes no longer meet the needs of team members (Riege 2005:30). Therefore, ICTs can become a barrier to knowledge sharing unless assessments and efforts are regularly made to ensure that team members' knowledge-sharing needs are met. The mismatch does not arise from technical problems associated with ICTs, but because ICT-facilitated knowledge-sharing practices no longer solve team members' problems or support their work processes (Riege 2005:30).

This section has examined the potential knowledge-sharing challenges that can impair the ability of legal information professionals to share their knowledge succesfully. The next section discusses knowledge-sharing enablers or enhancers that could promote the legal information professional's knowledge-sharing practices.

## 2.11 Virtual enablers of knowledge sharing

Knowledge-sharing enablers are used to promote and enhance knowledge-sharing practices. Therefore, it is important understand these enablers as they play a key role in promoting and enhancing knowledge sharing practices and also contribute to the study's aim to establish how knowledge sharing amongst the virtual team can be enhanced. According to Bechina and Bommen (2006:109), virtual teams are headed in the right direction if they are aware of the crucial issue of creating an environment that fosters knowledge-sharing practices. According to Phung et al. (2016:77), understanding the presence of different knowledge-sharing barriers and finding ways to remove them can help virtual teams facilitate the effective sharing of knowledge. The next sub-sections describe seven knowledge-sharing enablers: trust, enhancing communication, technology, reward systems, team structure, management support, and culture.

### 2.11.1 Trust

According to Atkova and Tuomela-Pyykkönen (2015:108), a climate of togetherness and trust amongst team members is necessary for accomplishing proactive knowledge sharing within a virtual team. Likewise, Phung et al. (2016:77) indicate that a precondition for knowledge sharing within a virtual team is an attitude of trust amongst team members. Jeenger and Kant (2013:9) similarly note that team members require the existence of trust in order to respond openly and share their knowledge. Furthermore, knowledge sharing in virtual teams is effective when team members are trusted and empowered (Jeenger and Kant 2013:9). However, Zaglago et al. (2016:4) observe that in virtual teams, trust can be difficult to win and easy to lose. Thus, the primary and essential factor for a virtual team's success is having relationships of trust among team members, which encourage them to be more willing to share knowledge (Phung et al. 2016:77). Nonetheless, it might not be possible for team members in different countries to meet or relate, making geography a significant barrier to building trust between virtual team members who have never met in person. As such, members of a virtual team need to meet in person in order to build that trust: meeting face-to-face makes it easier for them to interact virtually, since in that way they can form a real connection and relationship with each other (Velmurugan et al 2010:152).

### 2.11.2 Enhancing communication

Effective communication in virtual teams is required in order to develop high-performance work strategies and processes amongst team members (Zaglago et al. 2016:6). Enhancing communication could strengthen the way in which team members share knowledge. Rivera, Ortiz and Flores (2009:260) has suggested that virtual teams need to promote a state of affairs in which team members do not encounter any formal knowledge-sharing barriers, such as rules that lead them to avoid communicating with others in the virtual team and thus prevent or discourage them from sharing their knowledge. Furthermore, ICTs that facilitate virtual team communication should ensure that all the team members are willing to be involved in the discussions (Velmurugan et al. 2010:147-148).

### 2.11.3 Technology

Assefa et al. (2013:8) indicate that ICTs can create value for a virtual team if the necessary skills, infrastructure, systems and procedures are built in to support the knowledge-sharing practices of a virtual team. Velmurugan et al. (2010:154) recommends that virtual teams develop ICT-facilitated knowledge-sharing processes, which can be instrumental in accomplishing goals and objectives. Further to this, Hong et al. (2011:14419) indicates that ICTs enable virtual teams to distribute and share valuable knowledge that resides in team members' capabilities by empowering members with the necessary tools to participate in knowledge sharing. Hence, ICTs have been identified as a major knowledge-sharing enabler, given their ability to enhance processes related to knowledge sharing (Phung et al. 2016:77). In this regard, Jeenger and Kant (2013:3) point out that advancements in ICTs have also increased the ease of knowledge sharing and provided better methods for sharing knowledge amongst team members. According to Velmurugan et al. (2010:153), it is essential that virtual teams use advanced ICTs in sharing knowledge for the purpose of becoming more effective. Hence, ICTs are considered an effective tool for knowledge sharing only when they add value beyond what can be achieved by means of existing knowledge-sharing tools (Assefa et al. 2013:9). Conversely, the effective integration of existing and new virtual team ICT tools will enable seamless sharing of knowledge across the virtual team (Jeenger and Kant 2013:3).

### 2.11.4 Reward systems

Phung et al. (2016:77) state that team members need to be motivated by rewards in order to share knowledge; if not, knowledge-sharing activities could be unsuccessful due to a lack of transparent rewards and recognition systems. According to Rangamiztousi and Tse Kian (2012:994), rewarding team members for knowledge sharing is a common solution for encouraging their participation in knowledge-sharing activities. Bechina and Bommen (2006:110) thus point out that virtual teams should set up incentives to motivate team members to share their knowledge. The presence of transparent rewards and incentives systems are contributors in support of knowledge-sharing activities within any virtual team (Phung et al. 2016:77). Khalil and Shea (2012:46) indicate that the rewards or incentives can be both financial (extrinsic) and non-financial (intrinsic). According to Atkova and Tuomela-Pyykkönen (2015:112), team member's motivation or willingness to participate in knowledge sharing can be influenced through special rewards and incentive systems acting as extrinsic or intrinsic motivators. Rewards providing extrinsic motivation may be financial, such as a salary increase, an amount of money for each contribution, or a performance bonus. Rewards providing intrinsic motivation may be non-financial, such as gift certificates, a points systems, or satisfaction of a desire to build a career, to make a discovery or to make an impact (Atkova and Tuomela-Pyykkönen 2015:106).

### 2.11.5 Team structure

Lilleoere and Hansen (2011:56) maintain that the networks amongst virtual team members are among the key vehicles for sharing knowledge. However, the distance between team members in virtual teams makes it difficult for them to share tacit knowledge, meaning that settings which simulate physical proximity are required (Lilleoere and Hansen 2011:56). It is important to integrate knowledge sharing into the existing values and the overall style of a virtual team in order to reach high levels of interaction on a vertical (amongst peers) and horizontal (amongst junior and senior members) level of the team's structure, rather than changing the virtual team's culture to suit the knowledge-sharing practices (Riege 2005:27).

### 2.11.6 Management support

Phung et al. (2016:77) identify management support as a motivator or enabler of knowledge

sharing. According to Jeenger and Kant (2013:9), Phung et al. (2016:77) and Hsu (2008:1316), knowledge sharing requires support from management, as it is concerned with team members and management having the ability to influence team member's willingness to share knowledge with others. Hence, management is primarily responsible for supporting and sustaining a knowledge-sharing environment in a virtual team (Jeenger and Kant 2013:9). Atkova and Tuomela-Pyykkönen (2015:112) recommend that management must act as examples and peers, walk-the-talk and show respect. Conversely, a lack of implementation, leadership or support from management in terms of clearly communicating the benefits and values of knowledge-sharing practices may hinder effective knowledge sharing in a virtual team (Phung et al. 2016:77). According to Jeenger and Kant (2013:9), barriers that significantly affect knowledge sharing in virtual teams must be identified so that management can address them. Awareness of the potential knowledge sharing barriers allows management to respond proactively to knowledge-sharing challenges and develop solutions tailored for a specific virtual team (Atkova and Tuomela-Pyykkönen 2015:113). As such, management must provide the resources, allocate the time for sharing knowledge and create a climate supportive of it. Hence, it is imperative for management to support and value knowledge-sharing initiatives in order to build and provide a positive knowledge sharing culture in a virtual team (Phung et al. 2016:77; Atkova and Tuomela-Pyykkönen 2015:112).

### 2.11.7 Culture

Jeenger and Kant (2013:4) indicate that culture encourages collaboration and motivates team members to participate in knowledge sharing. Similarly, Atkova and Tuomela-Pyykkönen (2015:112) and Hong et al. (2011:14419) highlight that it is important to align knowledge-sharing practices with a virtual team's existing culture by ensuring that the practices solve practical problems and support the virtual team's core values whilst implementing knowledge sharing in a way that complements the virtual team's style and builds on the existing knowledge-sharing networks that team members use. In this regard, Khalil and Shea (2012:46) recommend that a virtual team culture should support the sufficient capturing, evaluation, feedback, communication and tolerance of past mistakes, as this will increase participation in knowledge sharing by team members. According to Atkova and Tuomela-Pyykkönen (2015:108), team members in a virtual team with a positive knowledge-sharing culture expect each other to

willingly participate in knowledge sharing as it is a natural action for people to share ideas, insights and knowledge because they see it as the right thing to do and not as something they are forced to do. Therefore, it is important to instill a positive knowledge sharing culture in a virtual team (Velmurugan et al 2010:145).

## 2.12 Summary of Chapter 2

This chapter provided the results of a search and evaluation of the available literature on knowledge sharing. The literature review identified studies that had been conducted on knowledge sharing and also set the background and context for discussing the knowledge-sharing practices of Hogan Lovells' virtual team. The literature reviewed revealed that knowledge sharing is a complex issue for virtual teams. The successful sharing of knowledge within a virtual team depends on a number of interrelated factors. These include knowledge-sharing practices, technologies, challenges and enablers. Understanding these factors and how they relate to one another is important for achieving effective knowledge sharing in any virtual team. The next chapter outlines how this study was conducted in order to achieve the set objectives.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

Research methodology is the strategy or design which directs the choice and use of methods for achieving desired research outcomes (Byrne 2016). This chapter discusses the various research methods and approaches adopted in this study to meet its purpose and objectives. It is organised into the following sections: the research approach and design; the target population and sampling; data collection methods and procedures; trustworthiness; ethical considerations; and the data analysis and presentation of the data collected. The production of valid knowledge depends on the research method and approaches used. Hence, it is important for research studies to disclose how the study was conducted (Ramohlale 2014:66).

## 3.2 Research approach

There are three main research approaches, namely, qualitative, quantitative and mixed methods research (Creswell 2013:4). Quantitative research is characterised by the gathering of data with the aim of testing a hypothesis. The data generated are numerical, or, if not numerical, can be transformed into useable statistics (Byrne 2016). Qualitative research is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. Qualitative research is also used to uncover trends in thought and opinions and to dive deeper into a problem by studying an individual or a group, usually using unstructured or semi-structured techniques (Byrne 2016). Elements of both qualitative and quantitative approaches can be incorporated in a study, leading us to the third approach, known as the mixed-method research approach. It involves the collection and analysis of both qualitative and quantitative data in order to test or further understand sections of the issue being studied (James and Slater 2014:61).

This study employed a qualitative research approach to obtain insights from the Participants through the use of interviews. The adoption of a qualitative approach was deemed appropriate for this study in order to collect data in a natural setting and interpret and understand the research results. The researcher aimed to establish the Participant's perceptions and feelings about knowledge sharing; to this end, he had to rely on the Participants sharing as much as they could

in order to gain a better understanding of knowledge sharing. The Participants were Hogan Lovells' legal information professionals, each of them with unique values, perceptions and experiences. Due to the qualitative approach, the researcher collected data in Participants' natural settings through face-to-face interviews.

## 3.3 Research design

This study adopted a case-study research design. A case study is defined as an in-depth examination of a single social unit (individual, group or beyond) or phenomenon (Coghlan and Brydon-Miller 2014:87). It is the most common strategy for understanding contextual information in qualitative research (Flick 2014:27). The researcher examined the knowledge-sharing practices of legal information professionals within their social and cultural context. The case study design enabled the researcher to interpret data collected from the unique context of Hogan Lovells' legal information professionals in order to provide an account of their knowledge-sharing practices (Flick 2014:27). The researcher chose this case study as it facilitates a comprehensive and critical study of knowledge sharing at Hogan Lovells by providing a great amount of detail relating to its practice within the virtual team.

## 3.4 Population and sampling

Sampling is the collection of a small number of people taken from a larger population under study (Maree 2012:69). A population generally consists of all the people that the researcher is interested in studying (Maree 2012:69). For the purposes of this study, the population is all 23 members of Hogan Lovells' virtual team. The team is made up of two geographically dispersed teams, which consisted of 6 team members based in the Johannesburg office and 17 in the London office. The selection of a sample is crucial in ensuring that research questions are adequately answered (Collins 2015:81).

In this study, purposive sampling, a type of non-probability sampling, was employed. Purposive sampling is about deliberately selecting specific types of people who 'represent' and possess the characteristics required to achieve the study's research objectives (Collins 2015:82). The choice

was based on the judgement and ideas of the researcher, who pursued a certain kind of 'representative' sample (Vehovar, Toepoel and Steinmetz 2016:331). The use of purposive sampling enabled the researcher to identify the interviewees or Participants who were in possession of suitable information that met the objectives of the study, this by assessing their characteristics, ingenuity and appropriateness in relation to the study's objectives. Emphasis was placed on getting as much information and data as possible from legal information professionals who participated in knowledge sharing within the virtual team.

The researcher is a member of the virtual team based in Johannesburg and was able to access its intranet site to retrieve a list of all the legal information professionals based in the London and Johannesburg office. This list represented the sample frame, which is simply a list of all the individuals who can participate in the study (McNabb 2014:83). The sample frame consisted of all 23 members of Hogan Lovells' virtual team. These team members were then asked by the researcher to participate in the study.

## 3.5 Data collection methods and procedures

This study adopted a qualitative research approach by using interviews as a data collection tool in order to generate detailed results for the case study. Interviewing is a qualitative technique that involves a small number of Participants who are purposively selected (Collins 2015:82). The researcher aimed to collect interview data that is aligned with his study's research purpose (Flick 2014:299). Out of 23 potential interviewees from the London and Johannesburg team, the researcher interviewed only 14 Participants because he arrived at a point of saturation. According to Msoffe (2015:87), saturation of data occurs when conducting additional interviews would provide no new data but only confirm previously collected data. Msoffe (2015:87) indicates that researchers reach saturation point when adequate data have been collected from Participants and they have a sense of having fully covered the topic of study. Therefore, the researcher conducted 14 interviews with four Johannesburg- and ten London-based team members, focusing on their perception of their knowledge sharing practices; this helped the researcher to understand the process of knowledge sharing as well as understand the research problem and answer the research questions.

An interview guide was designed to help retrieve information from Participants in a consistent manner. The guide was based on the study's research questions and was meant to help the researcher cover areas and collect data that answers the research questions. The interviews were held using videoconferencing on a one-to-one basis with Participants and were semi-structured so as to encourage the interviewee to elaborate on the topic of interest as he or she saw fit; at the same time the semi-structured format guided the interviewer and helped him not to lose track of the interview. The researcher took two months (May and June 2017) to collect data. The prospective Participants were called and appointments scheduled on dates of their convenience. Appointments were secured by the researcher before the interviews to enable the interviewees to prepare adequately for the interviews. Prior preparation by interviewees was deemed necessary by the researcher as a way to obtain well-thought-out responses. Interview sessions were a minimum of an hour in duration and were recorded with a voice recorder. The researcher conducted data collection until data saturation was attained. The researcher was satisfied that the data collected covered all aspects of the factors influencing the knowledge-sharing practices of legal information professionals at Hogan Lovells.

## 3.6 Trustworthiness

Clow and James (2014:315) explain that trustworthiness relates to the honesty and dependability of the researcher and research findings. According to Coghlan and Brydon-Miller (2014:691), findings that can be thoroughly and carefully justified are deemed trustworthy by the research community. The researcher used an interview guide that put the same questions to each interviewee in order to ensure that the collection of data in the study was trustworthy. In other words, the study used a consistent means of collecting data from Participants. Once developed, the interview guide was pre-tested on a sample of the target population to evaluate the interview guide's feasibility. The pre-test also enabled the researcher to check whether Participants understood and would be able to answer the interview questions, and to gauge their reactions to them. In addition, Participants were invited to offer suggestions for improving the questions in the interview guide. With 23 legal information professionals having to be interviewed, the interview guide was pre-tested on four of them based in the Johannesburg office. These

individuals represented the actual population of Participants that would be involved in the actual study. Participants in the pre-test were also interviewed by the researcher as part of the main study. After the pre-test, no interview questions were modified.

The interview guides were administered personally by the researcher. The interview questions were deemed trustworthy as they were based on the study's objectives. The researcher also made sure that each interview question contributed to achieving the study's objectives. The researcher ensured the accuracy and trustworthiness of data collection by recording all the interviews using a voice recorder and transcribing interviews. As a result, the entire data collection phase of this study was recorded. The researcher also retained the interview recordings, along with the transcripts, in order to be more transparent and make it possible to review the original data collected rather than rely only on the transcripts or the study's findings. According to Paulus, Lester and Dempster (2014:104), the original source of data could be made available for checking, thus strengthening the trustworthiness of the study.

The researcher also ensured that data was collected from appropriate Participants by ensuring that legal information professionals who gave their opinion on the subject of knowledge sharing were the same individuals who participated in the virtual team's knowledge sharing activities. In addition, interviews were conducted in such a way that Participants found it easy to tell the truth as they percieved it. Thus, the interactions enabled the researcher to gain a deeper understanding of knowledge sharing and portray a proper account of legal information professionals' knowledge-sharing practices. Furthermore, it is possible to obtain similar findings if another researcher were to undertake a similar study under equivalent conditions and replicate the data collection methodology used in this study.

## 3.7 Ethical considerations

The study adhered to the University of South Africa (UNISA)'s ethical clearance requirements. These are that students declare the contents of their dissertation/thesis as their 'own work and that all the sources that they have used or quoted have been indicated and acknowledged by means of complete references' in the submission of the dissertation for examination. In addition

to this, the following ethical issues were considered in this study: confidentiality, anonymity, informed consent and sensitivity. In order to maintain confidentiality in the research, the names and contact details of the Participants have been kept anonymous and confidential. The researcher has ensured that the confidentiality of Participants in the study is duly protected during the process of data collection, analysis and publishing of the dissertation and when disseminating the outcomes of the study. The researcher had to ensure the protection of the legal information professionals and the organisation. In terms of consent, the researcher obtained informed consent from the Head of the Knowledge and Research Department of Hogan Lovells in order to ensure that members of the firm's virtual team could participate in the research study. Participation was voluntary and the Participants were assured that the information they provide will remain confidential and be used only for the purpose of the study. In order to obtain informed consent from the potential Participants, the researcher complied with ethical practices by explaining to Participants before they participated in the interviews what the research was investigating, why it was being investigated, and what their role in the research was. The researcher ensured that the potential Participants were aware of the nature and purpose of the research to be undertaken. The researcher had a duty and responsibility to furnish information on the nature and purpose of the research to be undertaken. Upon completion of this study, all the Participants who played a role in this study were informed of the outcome of the study.

## 3.8 Data analysis and presentation

After data are collected, they are analysed and interpreted. The researcher was accountable for how the research was conducted and the processes of data analysis and presentation of findings. In collecting data from the interviews, the researcher used a voice recorder to record the interview sessions, which ensured the complete capture of discussions. Transcription of recorded interview sessions was only done for sections which were identified to be crucial for the study. The researcher reduced data by eliminating repetitive statements and data irrelevant to the study. Although the researcher was transcribing parts of the interviews, he was aware of the importance of providing a fair analysis of what is in the data, instead of simply matching data with concepts from the literature review (Flick 2014:306). Furthermore, transcription of interviews was done by the researcher, instead of a professional transcriptionists, as listening to the interviews again

provided a productive opportunity to reflect on the interview process, recall details that might have been missed and potentially revise the interview guide for the next interview. In addition, listening to the interviews allowed the researcher to reflect on his strengths and weaknesses as he was inexperienced at conducting interviews (Coghlan and Brydon-Miller 2014:466). This study used Microsoft Word® in the transcription of the interview sessions.

The data from the interview sessions, as contained in the transcriptions, was analysed manually by way of content analysis. Flick (2014:171) defines content analysis as a method of systematically interpreting the meaning of qualitative data; in this case, it refers to attaching meaning to the textual data contained in interview transcripts. Content analysis assisted the researcher in focusing on attaching meaning to specific data from the interview transcripts, which were then turned into information that was required to answer the study's research questions. The researcher scrutinised the 14 interview transcripts to identify and extract relevant information. The responses of legal information professionals constituted this information, which was categorised into themes in order to draw conclusions regarding their knowledge sharing. The data collected from interviews were dense and rich, but not all of it was included in the study. Therefore, the researcher focused on some of the data and disregarded other parts of it. The idea on this process was to aggregate data into a small number of themes of five to seven themes (Creswell 2013:195). After the content analysis was complete, the use of Microsoft Word® made it easier to group similar themes together by simply copying and pasting related themes, after which the researcher analysed the data. The level of computer data analysis applied was limited to Microsoft Word. The researcher represented data using themes supported by direct quotations from interview transcripts (Flick 2014:306).

## 3.9 Summary of Chapter 3

This chapter described the research methodology used in this study. This included the research approach and design; population and sampling; data collection methods and procedures; trustworthiness; ethical considerations; and data analysis and representation. The next chapter presents the study's findings.

# CHAPTER 4: DATA ANALYSIS AND PRESENTATION

## 4.1 Introduction

The objective of this chapter is to present, analyse and interpret the results obtained during the process of data collection. The study is based on the need to explore the knowledge-sharing practices of Hogan Lovells' virtual team and determine how these could be enhanced to provide a superior information service to the firm's lawyers. To this end, the study also focuses on identifying the knowledge-sharing technologies, challenges and barriers, as well as enablers and enhancers, that influence the virtual team's knowledge-sharing practices. The research resulted in the collection of qualitative data. The questions posed for data collection were in line with the study's objectives and were guided by an interview guide. The interview guide consists of five questions (see Appendix A).

Data from the Participants are summarised into themes and discussed in relation to the objectives of the study, as indicated below:

1. to establish the virtual team of legal information professional's understanding of knowledge-sharing practices;
2. to explore the knowledge-sharing practices used by the virtual team of legal information professionals;
3. to explore the knowledge-sharing technologies used by the virtual team of legal information professionals;
4. to identify the knowledge-sharing challenges experienced by the virtual team of legal information professionals; and
5. to establish how knowledge sharing amongst the virtual team of legal information professionals can be enhanced.

The first part of the interviews was to establish the characteristics of the Participants, including their positions, gender, experience in years, educational qualifications, and ages. It was necessary to collect the Participants' demographic details as these are important in understanding the factors that influence the virtual team's knowledge-sharing practices.

- In terms of positions, there were two Trainee Researchers, two Assistant Researchers, five Researchers, two Senior Researchers and three Managers.
- In terms of gender, there were nine women and five men.
- With regards to experience, four Participants had less than four years' experience; five Participants had between five and nine years'; three Participants had between ten and fourteen years'; one Participant had between fifteen and twenty years'; and one had more than twenty years'.
- In terms of educational qualifications, seven of the partipcants had Master's degrees, three had Honours degrees, one had a postgraduate diploma, and three had Bachelor's degrees.

## 4.2 Virtual team of legal information professional's understanding of knowledge-sharing practices

The first objective of this study was to establish the virtual team of legal information professional's understanding of knowledge-sharing practices. In order to explore their understanding, the following question was asked: What do you understand by 'knowledge-sharing practices'? The responses below indicate a good understanding of 'knowledge sharing' but not 'knowledge-sharing practices':

> *'It is the way human capital is shared and refers to how we communicate what we know and how we know it.'* [Participant 1]
>
> *'It is the exchange of information through knowledge systems and various mediums that we have, via conversations with one another, through e-mails, phone calls and current information systems that we have already. For me, it is the exchange of information.'* [Participant 4]
>
> *'... Sharing information that is internal to the team ... and making sure that it is available and accessible to everyone in the team.'* [Participant 5]
>
> *'... Sharing information and experience between team members to enhance processes and ultimately the service that we provide to our customers.'* [Participant 6]
>
> *'... Any content that makes it from person A to person B is knowledge sharing ...'*

[Participant 10]

*'... Knowledge sharing can encompass a wide range of things, so it is not just things that are written or spoken between people, one-to-one, it can also be between lots of people in the team ... for example, it could be formal or informal ...'* [Participant 11]

The Participants described knowledge sharing in accordance with the views of Maponya (2005:904) and Hong et al. (2011:14418) that knowledge sharing entails transfering specific knowledge held by an individual to other members of the team in a form in which they can understand, absorb and use it. In contrast, the responses below indicate a good understanding of knowledge sharing practices:

*'What I understand by knowledge sharing practices is sort of like practices or systems put in place to sort of transfer knowledge from one place to the other or from one person to another.'* [Participant 2]

*'A practice is something that an organisation sort of does, it's a way of how to do things, it's the methods and procedures they use, so knowledge sharing practices would be how an organisation shares their knowledge and manages their knowledge.'* [Participant 3]

*'Methods of sharing internal team information and knowledge and know-how within the team in order to meet our business needs and those of our clients.'* [Participant 7]

*'The way you can facilitate the sharing of knowledge and information between people and team ... you have that information that needs to be shared with people, so it's how you do that through different forms or mediums.'* [Participant 8]

*'I understand knowledge sharing practices to be any practices whereby information, knowledge or know-how is exchanged, communicated or shared between different people in the team or across teams in order to enhance the service that those teams provide for the firm.'* [Participant 9]

*'... Formal or scheduled events for sharing knowledge ... so I would say that it is a broad range of different practices.'* [Participant 12]

*'It is means of ensuring that knowledge held by one person is available or accessible to other people within the team ...'* [Participant 13]

*'Practices that we use in our daily work which enable us to share information ... They are tools and techniques we use to share information between the teams and they allow us to carry out our jobs more effectively.'* [Participant 14]

The Participants had different but similar understandings of the concept of knowledge-sharing

practices. Knowledge-sharing practices are the predetermined ‘practices’ or ‘ways’ of ensuring that knowledge sharing takes place; they refer to more than the mere activity of sharing knowledge from one person to the other. This notion is supported by Hsu (2008:1318), who indicates that knowledge-sharing practices facilitate knowledge sharing, and Tahlelo (2016:34), who indicates that they are actions that are aimed at improving the internal flow of knowledge within a virtual team.

## 4.3 Knowledge-sharing practices used by the virtual team of legal information professionals

The second objective of this study was to explore the knowledge-sharing practices used by the virtual team of legal information professionals. In this regard, the following questions were asked: What are the different ways in which knowledge is shared amongst virtual team members, and how do the different team members facilitate knowledge sharing in the virtual team? In addition, Participants were also asked probing questions which were in line with uncovering which knowledge sharing practices they used. The responses in this section identify which practices Participants use for knowledge sharing. They include team meetings, mentoring, storytelling and After-Action Reviews.

### 4.3.1 Team meetings

The following responses indicate the use of team meetings for sharing knowledge. Most Participants mentioned that they come together to share knowledge in team meetings. Their responses are presented below:

> *‘Mainly through our meetings.’* [Participant 3]

> *‘We have weekly meetings … We have those meetings once a week. We have one with our local Johannesburg team and have one with the London and Johannesburg team.’* [Participant 4]

> *‘We have a meeting every week … We also have the monthly Johannesburg and London team meetings … We do try to come together as a team, as well, once a week. The Johannesburg team have a meeting as well and with London every other week, with some of the managers.’* [Participant 5]

*'We have monthly team meetings between both teams.'* [Participant 7]

*'We have fortnightly meetings or monthly meetings.'* [Participant 8]

*'... Through team meetings.'* [Participant 9]

*'We do have a monthly team meeting.'* [Participant 10]

*'... The team meetings in terms of coming together physically to share knowledge ...'* [Participant 11]

*'... Team meetings which could be in one location or shared between locations.'* [Participant 13]

*'Certainly once a week it's our weekly team meetings.'* [Participant 14]

It appears from the above responses that members of the Johannesburg and London team meet regularly to share knowledge on how they do their jobs more effectively or more efficiently. These meetings are facilitated by videoconferencing technology and appear to be a necessity as members of the Johannesburg team are inexperienced and have a lot to learn from members of the London team. Due to the lack of contact and in-person interaction between members of the virtual team, these meetings present a good opportunity for team members from both sub-teams to see one another and share tacit knowledge in a virtual setting. The following responses from Participants suggest that they were learning from one another and provide clarity about the knowledge that can be shared during the team meetings:

*'We all come together to share what experiences we have and difficulties we have.'* [Participant 3]

*'We spoke of problems ... There is a wide scope of topics which we will speak about.'* [Participant 4]

*'The whole team comes together to share information ... so we'll get together to discuss anything and work through any problems.'* [Participant 5]

*'We share experiences from examples of enquiries that we have had or client due diligence work that we were working together on.'* [Participant 7]

*'We can discuss certain issues ...'* [Participant 8]

*'We talk about enquiries that we have received from lawyers and discuss the different*

*ways that we've addressed those enquiries … and share information with one another'* [Participant 9]

*'We go through a set amount of subject headings and everyone on both sides of the team are invited to contribute to which ever section applies to their work …'* [Participant 10]

*'…We discuss a particular type of research to share knowledge.'* [Participant 13]

*'We discuss different areas of enquiry work, whether it's business or legal or other work, like our client due diligence work.'* [Participant 14]

The virtual team's meetings facilitate the sharing of knowledge amongst members of the Johannesburg and London team in a virtual setting. Participant 10 explained how the meetings are conducted, saying they have a set number of subject headings and members of both sides of the team are invited to contribute under whichever heading applies to their work. The use of subject headings, or topics of discussions, appears to be a method of drawing out specific knowledge from team members and giving the meetings a structure, one that allows team members to prepare for and share certain points of knowledge in the meetings. In this regard, most Participants mentioned that they share knowledge on a wide range of topics, including experiences they have had; problems, issues or difficulties they have encountered; and research enquiries they have received from lawyers and ways of addressing these enquiries.

It is important to note that although it appears that the team meetings may constitute a community of practice, none of the Participants explicitly mentioned their use of communities of practice as a knowledge-sharing practice. It appears that the virtual team's community of practice is not formally recognised and is simply referred to, and understood, as a team meeting. In support of this finding, Participant 7 said, 'I've never heard it being described as a community of practice on a practical level, but we do', implying that he or she has not heard their team meetings being described as a 'community of practice' but that the meetings nevertheless function as communities of practice.

It is also important to note that due to members of the virtual team being in two geographically seperated locations with different time zones, these team meetings are facilitated by videoconferencing, as indicated by Participants 5, 8, 11 and 12 mentioning 'videoconference' and 'videoconferencing'. In the literature review, it was noted that members of a community of

practice might not reside in the same geographical location or share the same time zone (Hong et al. 2011:14419).

### 4.3.2 Mentoring

All the Participants mentioned that they used mentoring to share their knowledge, as the following responses indicate:

> *'I am the mentee and I have a mentor.'* [Participant 1]
>
> *'We have four mentors, which are all in London.'* [Participant 2]
>
> *'Mentor meetings are sort of set every second or third week …'* [Participant 3]
>
> *'I have a mentor that helps me with my work.'* [Participant 4]
>
> *'Specific people were assigned mentoring roles.'* [Participant 5]
>
> *'We also have an inter-office mentoring system … and that's formal mentoring'* [Participant 6]
>
> *'So each of the team members in Johannesburg has been assigned a one-to-one mentor in the London team, and also there's a pool of mentors in the London team.'* [Participant 7]
>
> *'I mentor for our team in Johannesburg.'* [Participant 8]
>
> *'I did perform some mentoring for a member of the Johannesburg office.'* [Participant 9]
>
> *'We have a team of five mentors in the London team … for anyone in the Johannesburg team … '* [Participant 10]
>
> *'The mentee can ask the mentor any questions that they want to.'* [Participant 11]
>
> *'We always have a mentor or more than one mentor on duty.'* [Participant 12]
>
> *'We had a pool of mentors'* [Participant 13]
>
> *'Mentoring is something we use quite extensively in the team.'* [Participant 14]

It appears from the above responses that mentoring is recognised and used as a formal practice for sharing knowledge in a virtual setting amongst members of the Johannesburg and London team. It also appears that all the fairly new and inexperienced members of the Johannesburg team

have a more experienced member of the London team to whom they can contact for advice and guidance. This is line with, for instance, Karkoulian et al.'s (2008:412) description of mentoring as a form of knowledge sharing consisting of an association between a skilled or knowledgeable team member and a less experienced one in which the mentor provides guidance, support and feedback to the mentee.

Furthermore, it appears that all the mentors are located in the London office. In support of this, it is noted that Participant 2, who is a member of the Johannesburg team, mentioned that 'we have four mentors, which are all in London'. This seems to be due to the fact that the experienced team members are based in the London office and inexperienced members, in the Johannesburg office. In addition, Participant 5 said that 'specific people were assigned mentoring roles', while Participant 7 mentioned that each member of the Johannesburg team has specific team member in London who is responsible for mentoring him or her. This arrangement accords with research by Bryant (2005:323), who indicates that the goal of mentoring is to help new team members become effective in their jobs and become contributing team members.

It also appears that the virtual team makes use of a formal mentoring system that was established by management to help members of the Johannesburg team improve their research skills. Evidence in support of this is that Participant 2 mentioned that 'it is something that was organised by our managers to help us improve our research skills'. In addition, Participant 4 indicated that mentors help team members with their work and assist in developing their abilities in their role. Participant 5 mentioned that 'there is always someone available to have a discussion with [in the Johannesburg office] if something isn't clear'; Participant 6 noted that Johannesburg team members have specific relationships, one-to-one, with a colleague in the London office who is always available to provide support in a specific work area. Participant 7 mentioned that each of the team members in Johannesburg 'has been assigned a one-to-one mentor in the London team', which enables those 'in South Africa to bring their problems to them and ask for advise and to address any issues that they may have encountered' in a virtual setting. Furthermore, Participant 10 said that they 'have a team of five mentors in the London team'. It also appears that they have meetings or sessions with their mentors every second or third week, during which mentees, using virtual technologies for communication, are able to speak to more

experienced mentors and receive assistance in going forward.

### 4.3.3 Storytelling

The following responses indicate that storytelling is used as a means of sharing knowledge, with most of the Participants mentioning that it is used in team meetings and in mentoring:

> *'We do a bit of storytelling in our team meetings.'* [Participant 2]
>
> *'We will have to speak about things that we have experienced … and tell a story about how we went about our research.'* [Participant 4]
>
> *'My mentee in Johannesburg might tell me some stories …'* [Participant 5]
>
> *'… We share stories in our team meetings, so the team members are encouraged to share stories of recent experiences.'* [Participant 6]
>
> *'We certainly do that in our team meetings.'* [Participant 9]
>
> *'During a mentoring scenario … we would definitely do that in a mentoring context.'* [Participant 10]
>
> *'It fits into team meeting's situation … also the training as well, where we meet the mentee in a one-to-one session …'* [Participant 11]
>
> *'… Also the monthly videoconferences … that is probably the nearest to storytelling because … people do embelish the story with a few extra facts or antedotes.'* [Participant 12]
>
> *'… Our team meetings …'* [Participant 13]
>
> *'When we are in the team meetings … we will certainly try to use storytelling …'* [Participant 14]

It appears from the above responses that storytelling is often used in virtual team meetings when team members are sharing their experiences and knowledge with fellow members in the London and Johannesburg office. It appears that storytelling is also used during the practice of mentoring when the mentee and mentor are sharing experiences or knowledge regarding their work in a virtual setting. In this regard, Koskinen and Pihlanto (2008:107) indicate that knowledge sharing through storytelling is evident when two team members encounter a problem beyond their experience and together undergo a lengthy storytelling process in which they work through

various scenarios and testing procedures until they resolve the problem. It appears that members of the virtual team who attend team meetings or take part in mentor-mentee relationships use storytelling to share knowledge when they interact with one another in seeking to resolve problems or issues relating to their work.

Most of the Participants were amused by the fact that storytelling is a recognised knowledge-sharing practice. Participant 7 indicated that it is not a major practice of knowledge sharing. However, on the basis of other Participants' responses, it appears to be a practice that members of the virtual team use frequently. In line with this, Participant 8 indicated that the virtual team does not formally recognise or intentionally apply the practice of storytelling, as they do not refer to it as storytelling. However, Participant 8 also indicated that some of their actions resemble or are similar to storytelling, but mentioned that they do not call it storytelling. Most Participants mentioned that they tell a story in instances when they

> *' discuss enquiries that we have done, you sort of tell the story of how you did the enquiry and all the challenges you had … and how you accomplished the task;'* [Participant 2]
>
> *'speak about things that we have experienced … how we went about our research;'* [Participant 4]
>
> *'share stories of recent experiences and recent instances of the product or solutions for our customers;'* [Participant 6]
>
> *'when you say, "Back then I got a CDD that looked exactly like this" and "This is what I did" and "This is what the compliance officer kind of came back on" … we then say, "You will get used to this" and "This is what I want you to do" or "This is what I experienced"';* [Participant 10]
>
> *'"I had this situation" and "This is what happened" and "This is what I learned";* [Participant 11]
>
> *'where people are talking about interesting enquiries they have done';* [Participant 12]
>
> *'talk through enquiries that they have done or why they have found it difficult … if they encounter a live problem or if they are trying to do research or anything they would be able to reach out and explain the problem';* [Participant 13]
>
> *'talk through enquiries that we had or work that we have done in the past.'* [Participant 14]

It appears that most Participants share stories by telling team members what they have experienced. As evidence of this, Participants indicated that they told stories of how they completed an enquiry, the challenges they faced, and how they accomplished the task; they also shared stories of recent experiences as well as instances of products or solutions they provided for their customers. In addition, Participant 12 mentioned that 'people do embelish their story with a few extra facts or antedotes' to make it more entertaining. For example, Participant 14 noted that team members use storytelling to 'make the experiences as interesting as possible for the people listening'.

### 4.3.4 After-Action Review

Responses indicate limited use of After-Action Reviews, in that most Participants did not mention them as part of the current practices of sharing knowledge. Three Participants mentioned that an After-Action Review was carried out on one occasion in the past. The following responses reflect on these themes:

> *'We did discuss and look back at what went well and what didn't work so well, with the aim of making changes and doing things slightly differently the second time around.'* [Participant 6]
>
> *'We sat down afterwards and had a review of their whole training session and their whole induction and what went well, what worked and what didn't work ... to basically make it more relevant.'* [Participant 8]
>
> *'We asked them to reflect on "if we were doing the training for them again, what would we do differently?" and "what would they have liked to see?" and ... we asked the team for input and insight into their training and "was there anything that we could do differently the next time around?"'* [Participant 13]

It appears that the virtual team does not use After-Action Reviews as a current or ongoing practice of sharing knowledge. As evidence of this, Participant 6, 8 and 13 indicated that an After-Action Review was used on one occasion when recruiting the then latest members of Johannesburg team. It appears that team members discussed matters and 'looked back at what went well and what didn't work so well, with the aim of making changes and doing things slightly differently'. It seems that team members from both locations undertook a review of the Johannesburg team members' training session and induction and, in so doing, discussed 'what

went well, what worked and what didn't work', in order to reflect on whether they would change the Johannesburg team members' training if they were doing it again. They would ask, 'What would we do differently, and what would they have liked to see?', with a view of improving future inductions and training 'to basically make it more relevant'. In addition, the initial members of the Johannesburg team were asked for 'input and insight into their training' and if there were 'anything that they could do differently the next time around'.

Moreover, Participants 6 and 12 mentioned that they 'wouldn't actually carry out a formal After-Action Review' and that they 'do it more informally' on a particular task than they should for certain service areas or administration tasks. Furthermore, Participants 6 and 12 mentioned that they 'don't think we label it an After-Action Review' and that they 'are not that good at doing After-Action Reviews'. To explain and justify the virtual team's non-practice of After-Action Reviews, Participant 5 said that 'there's definitely a lot of feedback going on all the time and reviewing; it's more of an ongoing process rather than something that happens in the end [of a task or project]'.

However, the Participants' responses do reveal traces, albeit on a small scale, of the practice of After-Action Reviews, in that the latter occurs after every task, instead of at the end of a project, and forms part of the mentoring between members of the Johannesburg and London office. As evidence of this finding, Participant 2 mentioned that they would 'get feedback [from a mentor] on how you could have done it better', while Participant 4 said team members receive feedback from mentors such as 'I think you should have done this'. It appears that the mentors provide insight and perspectives on how mentees should go about completing similar research or work in the future; mentors will also have a formal review with mentees on how the mentee completed a task, discuss what he or she should do in future, and raise concerns or recommendations about improvements that can be made.

## 4.4 Knowledge-sharing technologies used by the virtual team of legal information professionals

The third objective of this study was to investigate which knowledge-sharing technologies are

used by the virtual team of legal information professionals. In this regard, the following questions were asked: Which types of technology do you use for sharing knowledge with team members located in the London and Johannesburg office, and how are the different technologies used for knowledge sharing? Participants were asked additional questions to probe for answers in this regard. The findings were that the following technologies were used for knowledge sharing: intranet, e-mail, videoconferencing, instant messaging, Wikis, knowledge repositories and the telephone.

### 4.4.1 Intranet

The following responses indicate the use of an intranet for sharing knowledge. Most Participants mentioned that they use the intranet to share knowledge. The following responses reflect on how Participants use the intranet for knowledge sharing:

> *'I generally use the intranet for organisational documents or to find someone in the team or clients.'* [Participant 3]
>
> *'We have a special page for our team and this page has information on whatever we need as a team.'* [Participant 4]
>
> *'We have an intranet site that is specifically for the London and Johannesburg team and that's really useful because that has all sorts of documentation on it.'* [Participant 5]
>
> *'We have an internal team site that is used for knowledge sharing between both teams and between colleagues in both locations and across both locations.'* [Participant 6]
>
> *'... We have a London/Johannesburg team site which is secured to just the two teams and we share knowledge in a number of ways.'* [Participant 7]
>
> *'... Using the intranet as a research tool to find in-house documentation produced by the firm which is also open to both teams as well.'* [Participant 10]
>
> *'... We would communicate on the intranet with each other.'* [Participant 12]
>
> *'We also have specific intranet pages where certain types of knowledge is grouped together to be shared.'* [Participant 13]
>
> *'It is one of our main ways of sharing knowledge between the teams and it is a place that we can upload documents ... so that members of the team aren't having to completely reinvent the wheel when they start doing an enquiry.'* [Participant 14]

Participants 6, 12 and 14 indicated that the intranet is used by members of the Johannesburg and London teams to communicate with each other and that it is considered one of their main technologies for facilitating the sharing of knowledge. Most Participants indicated that the virtual team has an internal team site, or a special page on the intranet, specifically for members of the London and Johannesburg team, to which access is granted and content is secured exclusively for members of the two teams. From Participant 4's response, it also appears that the virtual team's internal team site or special page has information on whatever the members from Johannesburg and London need as a team in order to assist them with decision-making and carrying out their responsibilities.

In addition to the above, Participants 10 and 13 indicated that the virtual team's internal team site houses a range of documentation, can be used as a research tool to find in-house documentation produced by the virtual team, and has specific intranet pages where a variety of knowledge is organised in order for it to be shared; all of this is available exclusively, only, to both the Johannesburg and London teams. In this regard, the following responses from Participants provide clarity on the knowledge that members of the virtual team share using the intranet. In keeping with Participant 14's indication that the virtual team uses the intranet mainly for explicit or text-based knowledge sharing, most Participants mentioned that they use the intranet to store 'organisational documents'; 'in-house documentation'; 'information on basic know-how, like how to set-up the phone or contact another lawyer in another jurisdiction'; 'information for the resources' that they could use; 'ideas and information and team meeting minutes'; 'procedures'; 'training materials and basic anonucements'; 'research rota'; 'client due diligence resources'; 'PowerPoint slides from training sessions'; they said the intranet is also used to host '[other] technologies such as a Wiki or knowledge repositories'. Furthermore, Participant's use of the intranet is in line with Rajalampi's (2011:12) view that an intranet should aim to make important content or knowledge available to all of the virtual team's members.

### 4.4.2 E-mail

The following responses indicate the use of e-mails for sharing knowledge. Most Participants mentioned that they use e-mails to share knowledge. The following responses reflect on how Participants use e-mails for knowledge sharing:

*'I copy my mentor in all e-mails, so that my mentor can see what is going on and should I be absent or should I not be able to get to work.'* [Participant 1]

*'E-mails is most effective with feedback.'* [Participant 2]

*'All our research is sent via e-mails.'* [Participant 3]

*'... Most of our work is done via e-mail within the firm, so we use e-mail to communicate with each other, formally and informally, and to complete our research we use e-mail ... It's our feedback from our mentors.'* [Participant 4]

*'... I will get sent an e-mail to check, by my mentee ...'* [Participant 5]

*'Team members will give each other feedback via e-mail.'* [Participant 6]

*'We use our sent e-mails as a searchable archive of previous enquiries ... and we use e-mails to send information to other team members, and a product [or explicit knowledge] of mentoring is sent via e-mail, so they go back and forth with advice'* [Participant 7]

*'... The [knowledge sharing] practices or the mentoring ... some of that is done by e-mail.'* [Participant 8]

*'... If we are assisting each other with research.'* [Participant 9]

*'E-mail we use a lot to sort of check on work.'* [Participant 10]

*'We would use e-mails for sort of feedback, as a method to give people feedback on their work.'* [Participant 11]

*'E-mails are still very much the backbone of sharing knowledge within the team ... feedback is usually given in an e-mail.'* [Participant 12]

*'...We do, if you include interactions with and between mentors and the mentee'* [Participant 13]

It appears that e-mails are a major technology for sharing knowledge amongst members of the virtual team. This is highlighted by Participants 3 and 4 who indicated that 'most of our work is done via e-mail within the firm' and that most of their research work or the results of their research is sent via e-mail. Therefore, it appears that e-mails may be used on a daily basis due to team members being located in two geographical locations. It also appears from most Participant's responses that members of the Johannesburg and London team use e-mails to provide feedback to one another regarding their work, especially communication or interactions

during the practice of mentoring, whereby mentors in London provide their mentees in Johannesburg with feedback on their work. This finding is supported by Participant 4's indication that e-mails are mainly used to get 'feedback from our mentors'. As Tedmori (2008:12) notes, e-mail facilitates the creation, sharing and flow of knowledge amongst team members within a virtual team.

Participant's understanding of whether the messages being communicated in e-mails constitute knowledge was important in their perception of whether e-mails are a knowledge-sharing technology or just a communication technology. In line with this, Participant 12 mentioned that 'e-mails are still very much the backbone of sharing knowledge within the team'; contrary to this, Participant 14 was of the opinion that 'we do use e-mails but not as much for sharing knowledge as for more communicating directly with each other'. Although Tedmori (2008:11-12) lends support to the latter's opinion, in that team members use e-mails to communicate with other team members, the author has also indicated that e-mails are an important channel for conveying knowledge. Furthermore, Wedgeworth (2008:7-8) explains how e-mails are used for knowledge sharing by maintaining that team members who interact with one another are both the producers and consumers of knowledge and build on each other's knowledge through discussions via e-mail. It appears that the virtual team's use of e-mails for mentoring has influenced their perception of e-mail, leading them to see it as a knowledge-sharing rather than purely communication technology.

The virtual team's use of e-mails for facilitating mentoring seems to demonstrates how a knowledge-sharing techonology can enhance a virtual team's knowledge-sharing practices. The following responses from Participants provide clarity on the knowledge that members of the virtual team share using the e-mails. Participant 4 mentioned that their research work 'is all placed formally in an e-mail and sent off, then it gets checked [by a mentor], then it gets sent back to us'. Participants 5, 8 and 10, who are members of the London team, mentioned that in the practice of mentoring they 'get sent an e-mail to check, by [their] mentee', so they 'go through and see what the research is about'; they also'get an e-mail that needs some amendments or other work, then [they] can browse through it and e-mail back', and they 'reply to that e-mail with an explanation if there is a slight change' or they 'can also e-mail back and say 'can you put a

sentence in here or put that elsewhere''; there are also cases when a mentee or fellow team member ‘needed a longer explanation’. However, in some cases it may ‘just be research tips’.

Furthermore, it appears that members of the vitual team use e-mails for mentoring purposes in such a way that mentors located in London give advice and guidance on research work to members of the Johannesburg office, doing so via e-mail. This is apparent from Participant 7’s remarks that e-mails ‘go back and forth with advice’ between the mentees in Johannesburg and mentors in London and that the final version of the e-mail reflects the ‘product of mentoring’, which contains a solution or knowledge that was applied. This finding relates to research by Wedgeworth (2008:14), who indicates that it is in such cases that e-mails are considered a good and valuable source of knowledge.

Wedgeworth (2008:7-8) also indicates that e-mail interactions among team members performing common practices or tasks results in knowledge being stored in the e-mail in the form of messages or explicit knowledge. This is illustrated by Participant 7’s statement that the virtual team has a ‘system of saving [its] e-mails onto an enquiry system’, which is later identified as a knowledge repository. In this regard, it was noted in the literature that team members may wish to use the knowledge contained in the e-mails again and again. It is for this reason that e-mails that have been captured and contain knowledge may be archived and used as a knowledge repository (Wedgeworth 2008:14). Likewise, Participant 7 indicated that the virtual team uses its sent e-mails ‘as a searchable archive’, one in which members search for explicit knowledge stored in their e-mails in Microsoft Outlook or in the virtual team’s collection of e-mails in the knowledge repository. Tedmori (2008:12) notes in this regard that the knowledge or tips contained in e-mails can be accessed and reused by a team member whenever the need arises, and that stored e-mails are considered a valuable source of knowledge.

### 4.4.3 Videoconferencing

The following responses indicate the use of videoconferencing for sharing knowledge. Most Participants mentioned that they use videoconferencing to share knowledge. The following responses suggest how they do so:

*'We have our meetings through Skype.'* [Participant 2]

*'We have a monthly meeting with the whole team, London and Johannesburg.'* [Participant 5]

*'We use [videoconferencing], mainly for team meetings, so where the two virtual [sub-]teams come together and share stories, experiences, news and knowledge'* [Participant 6]

*'Yes, our monthly joint meetings are done over videoconference'* [Participant 7]

*'It is mostly for our meetings, so those meetings where everybody gets together to share the information or we tell a story from an enquiry, so that is how we use VCs … we in London or Johannesburg are sharing knowledge with each other. It is a good way to get a group of people in two different locations in one place.'* [Participant 8]

*'The videoconferencing is extensively for our meetings with each other and we use that, a great deal, for our meetings.'* [Participant 9]

*'… On a larger scale in the team meetings that we have via VC … we will book a room with video equipment and we will sit in a virtual circle with both teams and we go through the agenda and everyone shares and everyone can see the other side … On a smaller scale, [we use videoconferencing] on personal computers via Lync.'* [Participant 10]

*'So we use a type of group videoconferencing to have team meetings which we use for knowledge sharing and we also use the one-on-one VC on our desktop.'* [Participant 11]

*'We use videoconferencing once a month for the Johannesburg and London team meetings.'* [Participant 12]

*'We use videoconferences for team meetings, we use them for one-to-one meetings.'* [Participant 13]

*'They make our team meetings really work … It means that you don't need to be in the same room. The team can be in a completely different continent and it can still work and [team members are able to] share knowledge as if they are in the same room, so I guess it is a very useful technology.'* [Participant 14]

It appears that videoconference technology is used to facilitate their combined or joint team meetings, thereby enabling knowledge sharing despite the fact that members are dispersed across two different locations. In line with this, Participant 5 indicated that videoconferencing is used when 'we have a monthly meeting with the whole team, London and Johannesburg'; Participant 2 indicated that they have the 'meetings through Skype', which is a videoconferencing

application. Participant 6 highlighted the link specifically between videoconferencing and knowledge sharing, noting that the technology allows 'virtual teams [to] come together and share stories, experiences, news and knowledge'; this was also emphasised by Participants 7 and 8, who mentioned that 'videoconferencing is extensively for our meetings with each other'. This is in line with Alkhaldi et al.'s (2013:411) observation that videoconferencing was created to enhance knowledge sharing in virtual teams whose members are geographically dispersed.

It appears that videoconference technology is a facilitator that enables the virtual team's community of practice to take place in the form of meetings, whereby all the team members can come together to share knowledge. This is in line with Egbu and Botterill (2002:129) and Kamakari and Drigas' (2010:611) indication that videoconferencing infrastructure can help geographically dispersed team members to share knowledge across vast distances. In support of this, Participant 10 described the way the virtual team uses videoconferencing rooms: they 'will book a room with video equipment, and [they] will sit in a virtual circle with both teams, and [they] go through the agenda, and everyone shares, and everyone can see the other side…'. It appears that videoconference is essential in ensuring that team members not only have a meeting but can also see each other and share tacit knowledge in-person, considering that most of the other knowledge-sharing technologies facilitate the sharing of explicit knowledge.

Furthermore, Participant 10 also indicates that the virtual team have desktop videoconferencing functionality which is 'on personal computers via [Microsoft] Lync', their instant messaging system. In addition, Participants 11 and 13 mentioned the use of desktop videoconferencing, indicating that they 'also use the one-on-one VC on our desktop' and that they 'use them for one-to-one meetings'. It seems that the desktop videoconferencing functionality is used only when two or a few members of the team want to have a face-to-face virtual meeting or discussion that does not involve them moving away from their desktop. In addition, desktop videoconferencing appears to be an essential tool that facilitates the exchange of tacit knowledge. The need for desktop videoconferencing is visible when considering that virtual team members cannot always organise a videoconference team meeting for five-minute-long or short discussions.

### 4.4.4 Instant messaging

Most Participants mentioned that they use instant messaging to share knowledge. Participants mentioned that they use instant messaging for any quick 'answer', 'advice', 'questions', 'chat', 'enquiries', 'queries' or 'if someone needs assistance immediately', 'informal answer or advice' or to 'quickly mention something'. Virtual team members use it to inform, or share knowledge with, one another in an immediate fashion without spending too much time on communication. This is in line with Ou et al. (2011:143) and Nardi et al.'s (2000:79-81) indication that instant messaging tools are capable of facilitating informal and instant interaction among team members. In addition, Participants 8 and 13 also mentioned that the virtual team's '[Instant Messaging] IM system called [Micorsoft] Lync' allows them 'to make video calls' and share their display of what they are viewing on their desktops. Therefore, it enables them to have, in effect, 'a one-to-one conversation' thanks to its video features and, if need be, show each other what they are looking at on their monitors by sharing the view of their desktops.

The virtual team's members use instant messaging for informal and instant interactions amongst one another. Participants 6 and 10 gave the following examples: 'Have you got the password for this?'; 'Do you know if there is a technical problem with this website?'; 'Do you want a cup of coffee?'; 'I'm ready to meet in half an hour'; 'Is it okay to meet for half an hour later today?'; 'Are you there?'; and 'Can you quickly give me a ring?'. These examples in turn support Hara's (2008:121) indication that instant messaging is used for informal conversations and could stimulate spontaneous knowledge sharing. In addition, it bears out Nardi et al.'s (2000:79-81) claim that instant messaging is often used to support quick questions and clarifications, coordination and scheduling, organising unplanned social meetings, and keeping in touch with colleagues about ongoing work tasks.

Participants 10, 13 and 14 provided their opinion of when instant messaging should be used, indicating that it is used for 'anything that is really crisp, that quickly appears on someone else's screen and they can quickly write a sentence back'; for 'something that doesn't need a whole e-mail conversation'; and for 'more of a conversation and a chat that you will not remember'. It is 'a very good way of quickly speaking to members of the virtual team without taking up their inbox or setting out or starting out a conversation or having to set-up a videoconference'. It

appears that the virtual team's members would rather use instant messaging for something that is instant, not formal, and does not require a record of that communication to be kept. Thanks to instant messaging, the virtual team's members do not always have to send an e-mail when they need communicate. Therefore, this may lead to a reduction in the number of e-mails that members send to one another, as there is an alternative tool of sharing knowledge. As an illustration of this, Participant 9 said instant messaging can also be used for communicating and sharing knowledge with 'colleagues that sit just behind me'.

It appears that some Participants felt that instant messaging is not a knowledge-sharing technology owing to its informal nature of communication and inability to save or store messages which can potentially be explicit knowledge. Participants 5 and 11 mentioned that they 'wouldn't say that it is used for knowledge sharing at a high level' and that it is 'not so much for knowledge sharing because it's not permanent messages'. However, in making a case for instant messaging as a knowledge-sharing technology, Ou et al. (2011:146) indicate that its informal and casual characteristics makes it easy for team members to share knowledge amongst one another. Contrary to the opinions of Participants 5 and 11, these authors maintain that instant messaging can connect team members by creating communication patterns that positively affect knowledge sharing in virtual teams by facilitating team members' searches for solutions or knowledge from teammates. Therefore, although instant messaging is an informal way of sharing knowledge, it is a valuable channel for sharing knowledge as it enables virtual team members to share solutions amongst one another.

### 4.4.5 Wikis

Responses point to the use of Wikis for sharing knowledge. Most Participants said they use Wikis to share knowledge, as the following interview testimonies demonstrate:

> *'With Wikis, it is for [CDD] work of course, it is like a guideline of where do I start, or where do I go and where do I end, so the Wikis are very useful. It has knowledge on what to do and how to do it, so its like a step-by-step guide.'* [Participant 1]

> *'In our Wikis there are topics for almost everything … Wikis are more like a place where researchers in Johannesburg and London store knowledge, so it's knowledge about everything that the team does … then we put it up on the Wikis and then you can go there and extract whatever information that you need or work that someone has done before or*

*would direct you to the right place.'* [Participant 2]

*'We share the information that we have learnt through a Wiki that can be accessible by all of our team members.'* [Participant 4]

*'We do use Wikis and they have been a very successful way of sharing knowledge.'* [Participant 6]

*'We have dozens of Wikis in the London team and there is quite a few that the Johannesburg team has got and a shared collection of client due-diligence Wikis. We use Wikis a great deal as a central repository of knowledge on different areas of what we do.'* [Participant 7]

*'We use it to store the information.'* [Participant 8]

*'The Wikis are great because anyone in the [virtual] team can go in and update them, amend them, correct them, they are an easy open source and place where we can share our knowledge.'* [Participant 9]

*'You are invited to go to that Wiki and edit it yourself and put more information in there that will in turn help someone else … as long as you have something valuable to share, you're invited to go in and add to the Wikis. It is basically a growing organic body that we all have access to, so everyone puts something in and everyone takes something out again, which is very valuable in the [virtual] team as well.'* [Participant 10]

*'We have our SharePoint Wikis which are open to anyone either in the Johannesburg or London team to add to … with the ability to add or alter and share knowledge.'* [Participant 11]

*'They cover a wide range of topics ... and we rely on those heavily for sharing information.'* [Participant 13]

*'Wikis are very important for the virtual team as a knowledge-sharing technology. It allows us to capture knowledge on a wide range of subjects and for that knowledge to be stored at a place that is easily accessible … anybody in the virtual team can add to that knowledge and we can use it over and over.'* [Participant 14]

It appears that the virtual team uses Wikis to store knowledge that has the potential to change; by doing so, all the virtual team's members have access to the knowledge and can contribute new knowledge and ensure that existing knowledge is kept up-to-date by anyone in the virtual team. In support of this finding, Participants 1, 4, 8 and 14 mentioned that they 'share the information that [they] have learnt through a Wiki' and that the Wikis have 'knowledge on what to do and how to do it, so its like a step-by-step guide'; they can also 'store the information' which

‘cover[s] a wide range of topics’, and are able ‘to capture knowledge on a wide range of subjects’.

It appears that Wikis are valuable knowledge-sharing technology that ensures that the virtual team’s members have a central location to store their knowledge. Therefore, Wikis enable team members, regardless of their location, to access the same knowledge. This is highly beneficial to knowledge sharing amongst the virtual team’s members who find themselves in either of the two locations. In support of this, Participants 2, 4 and 11 mentioned that Wikis are ‘accessible by all of our team members’ and that they are ‘open to anyone either in the Johannesburg or London team’, as well as ‘a place where researchers in Johannesburg and London store knowledge’. In addition, they mentioned that the Wikis are ‘a central repository of knowledge on different areas of what we do’ and that it is a ‘place where [they] can share [their] knowledge’.

The virtual team also appears to make use of Wikis for the co-construction of knowledge by several team members. One of the most important features of Wikis is that they not only give the virtual team’s members access to knowledge but enable them to amend the knowledge it hosts in order to keep it updated and support good decision-making. In line with this, Participants 9, 10 and 14 mentioned that ‘anyone in the [virtual] team can go in an update, amend [and] correct’ their Wikis and that all the virtual team’s members are ‘invited to go to Wikis and edit it [themselves] and put more information in there that will in turn help someone else’; moreover, ‘everyone puts something in and everyone takes something out again’. These Participants also mentioned that the entire virtual team has the ‘ability to add or alter and share knowledge’ using the Wikis, which are ‘an easy open source’ and a ‘place that is easily accessible’. Furthermore, Participants 6, 13 and 14 were of the opinion that Wikis ‘have been [a] very successful way of sharing knowledge’, ‘are very important for the virtual team as a knowledge sharing technology’, and that members ‘rely on those [Wikis] heavily for sharing information’.

### 4.4.6 Knowledge repository or database

The responses indicate the use of knowledge repositories for sharing knowledge. Most Participants mentioned that they use databases to share knowledge. The following reflect on these themes:

*'The database has knowledge on "these are the steps to take and this is how you do it", and has guidance on what is available and what is not available.'* [Participant 1]

*'It is a knowledge database that everyone has access to and can edit, so if you come across something new, you can just add it ... everything that you basically need to conduct client due diligence on a company in a certain jurisdiction is on the R & L [Research & Libraries] database.'* [Participant 2]

*'I'd go there for ... information on how to go about researching in a specific country.'* [Participant 3]

*'We have a [Microsoft] Access database that has all our information on company searches or how to do international company searches and what type of information is available, passwords that might be needed [and] links to the [companies]registries.'* [Participant 5]

*'The Touch Paper database, which is a database which ... contains our previous research [e-mails] and client due-diligence research [e-mails] but it has information that is useful to us and in Johannesburg ... We also have a Microsoft [Access] database on information on company registries and company search agents and company-search-related information which is links to [companies] registries and passwords and account information and what is available and that database is acccessible from both the London and Johannesburg team. Everybody is able to get into that database and update it so that it is [as] up-to-date as possible.'* [Participant 7]

*'The R & L database gives you instructions on how to go to each individual [companies] registry and I guess it is a knowledge and information repository, we just don't call it that.'* [Participant 8]

*'The companies database ... we have details of foreign [company's] jurisdictions in terms of whether there is a company registry for that jurisdiction and whether that company registry has online information, for example, the extracts [from the companies registry]. It has details of our team's login and passwords and it also includes tips and information about what kind of details can be obtained from those different [company's] jurisdictions.'* [Participant 9]

*'We have the R & L/CDD database where we collect information about how to approach different [company's] jurisdictions in terms of types of company information that is available ... everyone always frequently uses that database because there is such a wealth of information in there that we need, so it is just best to store it somewhere locally where everyone has access to it and again; everyone is invited to contribute to it as well ... The second database, [the] Johannesburg [team] has indirect access to, which is our enquiries database with all the enquiries that we have ever worked on.'* [Participant 10]

*'I would say that we have two main databases ... Touchpaper may not count because we*

*only have access to it in London. But then, people in Johannesburg can always ask us to have a look at Touchpaper, which is basically a repository for all the previous [research] enquiries that we have done.'* [Participant 11]

*'I can think of two examples. One of them being the [Microsoft] Access database for client due-diligence work with all the information about the various [company's] jurisdictions and best practices for getting hold of [a company's] documents.'* [Participant 12]

*'We have a [Microsoft] Access database which we use to share knowledge about company searches done in hundreds of jurisdictions around the world. That is something that anybody in the [virtual] team can add to ... I think those are the two main repositories.'* [Participant 13]

*'The enquiries database [is for] any piece of work that the [virtual] team carries out for an enquirer is captured on that database ... We can certainly look back and see if we have done anything like it in the past and maybe what was done at the time ... The company search database [has information] on hundreds of [company's] jurisdictions around the world. It is a database which allows us to keep all that knowledge in one place and [is] arranged by jurisdiction, so if somebody needs to do a company search in a certain jursidiction and they have never done one before because they have never had to do the type of work, they can easily go to the database report and have a look to see what the official registry is and if the [virtual] team has access details and if there is any information about cost and time frame for getting information.'* [Participant 14]

It appears that the virtual team has two knowledge repositories. The first, a Microsoft Access database called the 'R & L database' or 'CDD database', which has explicit knowledge on what virtual team members 'need to [do in order to] conduct company due diligence on a company in a certain jurisdiction', as indicated by Participant 2, which entails 'company searches or how to do international company searches and what type of information is available, passwords that might be needed, links direct to the [companies] registries', as indicated by Participant 5. Furthermore, Participant 8 mentioned that the knowledge repository contains knowledge 'on how to go to each individual [companies] registry'.

The second, a database called the 'Touchpaper database', also stores explicit knowledge in the form of previous research e-mails and client due-diligence research e-mails that the virtual team's members can refer to in order to acquire knowledge of how they can conduct their work or apply previously documented knowledge to a similar research problem. This is in line with Ramasami's (2011:141-142) indication that a knowledge repository's function is to codify

explicit knowledge in a logical manner or in a way that will direct a team member to helpful sources (such as people, organisational units or groups, websites, policies and other avenues of finding knowledge) which may guide and inform a team member who is seeking knowledge. In addition, Ramasami (2011:141-142) note that effective knowledge repositories act as the link between team members and core knowledge, operating as a single point of contact or primary source of explicit knowledge that is needed to help team members to find relevant knowledge from many different virtual team sources.

### 4.4.7 Telephone

The following responses indicate the use of a telephone for sharing knowledge. Most Participants mentioned that they use a telephone to share knowledge. The following responses reflect on how they do so:

> *'That is where I get an instant answer, I call you and you are gonna pick up now.'* [Participant 1]
>
> *'It's usually quick conversations … it's quicker to just call someone and talk them through it.'* [Participant 3]
>
> *'If it is just a quick call then you'll use the phone system.'* [Participant 4]
>
> *'If you have a good explanation to give, I'd pick up the phone, especially if you don't want to write something down.'* [Participant 5]
>
> *'We do use the telephone a lot to have conversations with our colleagues in London and also in Johannesburg.'* [Participant 7]
>
> *'We use it a bit for mentoring for colleagues out there … when a two-minute phone call would be quicker to have a chat about something.'* [Participant 8]
>
> *'With the telephone conversation, the way you ask something or the way you speak is much more clear … it saves time … If you just picked up the phone and had a 30-second or two-minute chat, you'll be done.'* [Participant 9]
>
> '*To talk to the Johannesburg team and get used to their voices and … exchange some sort of friendly canoversations as well … [and] in a more sort of mentoring role.'* [Participant 10]

It appears that members of the virtual team use a telephone to have conversations with

colleagues in London and also in Johannesburg by making telephone calls in order to get an instant answer or a good explanation from their colleagues instead of having to write a message in an e-mail or instant message. In support of this, Participant 9 indicated that the telephone is ‘more instantaneous than instant messaging’. It appears that a telephone is also used in the practice of mentoring when team members in the Johannesburg and London office communicate with one another in order to share knowledge. However, although most Participants mentioned that they use the telephone, some of them were of the opinion that they do not use it very often. In support of this, Participant 14 mentioned that ‘the telephone is not used as much these days as we actually used it’. It appears that the virtual team’s members do not use the telephone that often because their instant messaging system enables them to make a voice call, which is similar to that made via telephone. Therefore, the telephone does not get used often. In support of this, Participants 6 and 10 mentioned that the telephone is ‘not [used] very often and that is because we have instant messaging and Skype and being able to do almost a telephone call … so the telephone is kind of dropped off’; moreover, 'it is probably the tool that we least use in terms of frequency’.

In addition, Participant 10 observed that ‘all the other technologies seem to be so much more useful for what we are doing, so the telephone [only] very occasionally comes into the mix’. It appears that knowledge-sharing technologies such as instant messaging provide the same functionalities as the telephone; they also offer more functionality than the telephone, such as video-calling and desktop sharing, which results in the telephone being neglected. In support of this, Participants 11 and 12 mentioned that they would ‘much prefer to use desktop videoconferencing , [because] it’s better to see people face to face’; they added that ‘being able to use Lync does mean that we can see each other as well, which is nice and it makes it a better knowledge-sharing experience and it helps if you can see the person you are talking to as well’. Therefore, it appears that it is not that the telephone is not a useful knowledge-sharing technology – it is just that better technologies are available. As Participant 14 said, ‘instant messaging has taken over more from the telephone’.

## 4.5 Knowledge-sharing challenges experienced by the virtual team of legal information professionals

The fourth objective of this study was to identify the knowledge-sharing challenges experienced by the virtual team of legal information professionals. The following questions were asked: What kind of knowledge are you reluctant to share with your fellow team members, and do you experience any problems with regard to sharing knowledge with other team members in the London and Johannesburg office? If yes, what are they? In addition to these questions, the Participants were also asked probing questions to help discover the knowledge-sharing challenges they experienced. The findings are that the following challenges were experienced: individual, organisational and technological knowledge-sharing challenges. The following responses were obtained from some of the Participants with regard to the different types of knowledge-sharing challenges:

### 4.5.1 Individual barriers

The literature review identified a number of factors that influence knowledge sharing at the individual level. These include a lack of communication skills; knowledge hoarding; interpersonal relationships; motivation to share knowledge; time constraints; trust; culture; gaps in awareness of knowledge; and tacit versus explicit knowledge barriers. The following responses instantiate various of these challenges.

#### 4.5.1.1 Communication skills

The following responses indicate the challenges relating to communication skills when sharing knowledge:

> *'I do sometimes experience problems and this is usually in the form of miscommunication with them [London team members]. Like I said, we communicate via e-mail, so we could miss something. We are not communicating face-to-face, so they could miss something or misinterpret the information I send them.'* [Participant 4]

> *'The only thing that doesn't work as well as it should is the big team meetings, and that's about numbers … I think when the numbers get big, yes. In videoconferences with twelve or ten people in London and five or six in Johannesburg, it's terrible and it just doesn't work.'* [Participant 6]

> *'I think there are different style. The team in Johannesburg have a different writing style than the team in London, and from both sides of that there is sometimes a difference in expectation, but I wouldn't say it is a major problem … There are culture differences between the two teams, because sometimes the language used isn't always completely clear from one end to the other, but where it is completely clear on one end but the message isn't always completely translated.'* [Participant 7]

> *'It's just that we are really busy or maybe someone doesn't understand something fully and is reluctant to ask.'* [Participant 8]

> *'[Communication skills] can be a problem. We all have our own different ways of communicating and different ways of expressing ourselves, and sometimes, for one reason or another, one person's way of expressing something might not be clear to another person.'* [Participant 9]

Participant 4, a member of the Johannesburg team, indicated that the miscommunication experienced with communicating with London team members may be caused by their communicating via e-mail, which means they sometimes miss something because they are not communicating face-to-face. In support of this, Atkova and Tuomela-Pyykkönen (2015:105) indicated that a lack of face-to-face interaction creates the risk of team members misinterpreting the messages sent to one another, since without the social features of face-to-face communication, team members are unable to observe their colleagues' reactions to their requests for knowledge and may interpret the message in a way that was not intended by the sender. However, it appears that even using face-to-face communication to share knowledge is not always effective. In support of this, Participant 6 indicated that miscommunication occurs when the virtual team holds team meetings using videoconference technology and a large number of team members attend it; when there are ten or 12 people in London and 5 or 6 in Johannesburg, this causes a breakdown in communication – 'it just doesn't work'. It may be that there are barriers relating to the videoconferencing technology that is being used by the virtual team. It could be that it is being used in a way that does not facilitate effective communication among team members.

Participant 8 is of the opinion that team members may be 'reluctant to ask' in instances where they do not understand the message that was sent to them and that this may be influenced by team members being 'really busy'. It appears that team members may be hesitant to communicate with their colleagues. In this regard, Participant 7 indicated that miscommunication

between members of the Johannesburg and London team is caused by the difference in their cultural backgrounds, which is evident in the team member's different writing style or ability to document or codify explicit knowledge. In illustration of this, Participant 7 mentioned that 'the language used isn't always completely clear from one end to the other'.

It seems, then, that team members may be using different or poor communication skills, which results in the recipients' inability to understand the message and knowledge that was sent to them. It appears that poor communication skills result in the inability of team members to share knowledge with others within their virtual team. For example, Participant 9 said that 'we all have our own different ways of communicating and different ways of expressing ourselves, and sometimes, for one reason or another, one person's way of expressing something might not be clear to another person'. It appears that team members may not be considerate of the recepient's ability to understand the message and knowledge that they are constructing and sending using the virtual team's knowledge sharing technologies. Furthermore, it may be that team members are using words or phrases that are vernacular to London or Johannesburg, leading to miscommunication or misunderstanding of the meaning that team members attach to a message sent by team members from the other location.

#### 4.5.1.2 Knowledge hoarding

The following responses indicate the challenges to knowledge sharing that arise from knowledge hoarding, a problem to which certain Participants referred:

> *'[Would share all their knowledge] unless it is sensitive knowledge … I don't always share knowledge of problems I have encountered before, unless if I feel like it will be useful to the team, but if I feel like it's something that someone has gone through already, I wouldn't necessarily share it, but if I feel like its something big or effective or not much has been done about it, then I'd share.'* [Participant 2]

> *'One of the things that people sometimes say is "it seemed like a really boring thing to me", "I forgot to mention that because it just seemed boring" [or] "I just didn't think it would be of interest to anybody". I'm not quite sure if that is sometimes a bit of an excuse because they would rather not say it. I don't think it is an excuse, I just think some people find it unsettling and other people do not find it comfortable doing that.'* [Participant 9]

> *'I am sometimes reluctant to share knowledge if I know that it creates more work for me. For example, I'd share something in the team meeting and everyone would say, "Oh,*

*that's really interesting," but they would also say, "Would you put that in a Wiki, could you please put that in the companies database?" And so, if I know that I am stressed already, I might try to share that next week, when I have more time to actually put these things on the knowledge database. So the problem is that it is never enough to share, it always has to go somewhere, so that someone can benefit from it more permanently, so that is where I would sometimes hold back and say I don't have time to do anything with that information. I have to delay it by a week before I share it.'* [Participant 10]

*'It's not to say that people [are] not wanting to share, but mainly [that they are] not finding the time to update materials.'* [Participant 11]

*'There are members of the team who don't willingly share their knowledge, which is a shame because there are some members of the team in London who have very specialist knowledge which is very valuable and has to be coaxed out of them, whether it may be helping a London-based colleague with a piece of research, or whether it be talking about an interesting enquiry in the team meeting. So whilst most people are quite good at sharing their knowledge, there are a couple of people who are not so good at sharing … There are people who are a little reluctant to share knowledge. Possibly that is personality-driven, because they like to keep it to themselves.'* [Participant 12]

*'Some people are less confident in their own knowledge. I'd often hear a lot of people saying, "Oh, I didn't think that was worth sharing," "I assumed that everybody else knew that," and that can be an issue. Others … usually have to be prompted but I sense that it is not that they are trying to hold on to information and they don't want to share – I sense that they think it is not valuable or people already know it … The more reserved members of the team, in a big videoconference, are more reluctant to speak up and share their information.'* [Participant 13]

*'If it's knowledge that I'm not sure about and if you are not sure if the information that you have is going to be useful, then you don't want to take up their time telling everybody everything that you have done, or similarly if you perhaps are unsure that the information you are sharing is not accurate, you maybe want to spend a bit more time to investigate it. Then you want any knowledge to be shared, to be accurate for people.'* [Participant 14]

It may be pointing out the obvious, but Participant 2 indicated that team members would not share any 'sensitive knowledge' with the rest of the virtual team. In addition, Participants 9 and 13 indicated that the virtual team's members always have reasons to justify why they are hoarding or not sharing their knowledge. For example, team members will say that 'it seemed like a really boring thing to me', 'I forgot to mention that because it just seemed boring', 'I just didn't think it would be of interest to anybody', 'I didn't think that was worth sharing', and 'I assumed that everybody else knew that' – all of which is a challenge to knowledge sharing.

Participant 9 is of the opinion that these are not excuses and that it is just that team members find it unsettling and uncomfortable to share their knowledge. It appears there is no way of telling if team members are simply hoarding their knowledge or if they find it uncomforting or unsettling to share it with the rest of the virtual team. As Assefa et al. (2013:6) note, it is difficult to spot the team members who do not want to share their knowledge, given that knowledge is an intangible resource. In short, it is difficult to know whether team members are hoarding their knowledge or not.

In addition, Participant 10 indicated that he or she would not share his or her knowledge during team meetings because colleagues would usually ask for it to be added it to a Wiki or knowledge repository, which is a problem because he or she, in most cases, does not have the time to codify or share the knowledge. It appears that team members may be hoarding their knowledge because they do not have time to share their knowledge. In support of this, Participant 11 mentioned that 'it's not to say that people [are] not wanting to share, but mainly [that they are] not finding the time to update materials'. Limited time seems to a major consideration in why the virtual team's members do not want to share their knowledge and choose instead to hoard it. As a result, Participant 12 and 13 said that team members' knowledge has to be cajoled or 'coaxed out of them', or it 'usually [has] to be prompted' or encouraged out of them, in order for it to be shared with the rest of the virtual team.

Furthermore, Participant 12 is of the opinion that team members' reluctance to share, or decision to hoard, their knowledge can be 'personality-driven', inasmuch as they would like to keep it to themselves. Accordingly, Participant 13 noted that the 'more reserved members of the team are more reluctant to speak up and share their [knowledge] in a big videoconference'. It appears that team members' personalities have an influence on whether or not they share their knowledge, as it may be that they are temperamentally too shy or lacking in confidence in the correctness of their knowledge to do so. As evidence of this, Participants 2 and 14 indicated that they would not share 'knowledge that [they] are not sure about and if [they] are not sure if the information that [they] have is going to be useful' or accurate; consequently, they said they would only share knowledge if they 'feel like it … will be useful to the team'. It appears that they simply do not want to share knowledge that is not valuable, is misleading or will not make a contribution to

other team member's knowledge. However, it appears that team members risk not sharing useful knowledge because they may misjudge whether or not their knowledge is known by other team members or whether it is worth sharing with them.

#### 4.5.1.3 Motivation to share knowledge

The following responses indicate the challenges relating to motivation to share knowledge. Some Participants mentioned that they experienced challenges relating to motivation to share knowledge, as the responses below demonstrate:

> *'If someone comes with that issue [of not knowing what to do], maybe I would [share my knowledge], but generally, no ... Because we all experience different problems, it only comes up when someone else is experiencing the same problem or if you are frustrated; then we'll only share the problem, but otherwise, no.'* [Participant 3]

> *'Most of the time we do [share knowledge on problems that we experience], but not all the time, because obviously the roles in the team [are different] and we do certain work which will be of no interest to the other person because its different work from what they do.'* [Participant 4]

> *'I think [that with] the team members in Johannesburg, knowledge sharing doesn't come so naturally, so we have to work harder to get it out of them, but I don't think it's because they are reluctant, I just think they think that we are a bit weird.'* [Participant 5]

> *'Sometimes team members are reluctant to share knowledge, but that's because of insecurities from less experienced team members.'* [Participant 6]

> *'I don't think there is reluctance in other people. I just think that they are less outgoing about these things ... Probably time and workload would be an issue with reluctance.'* [Participant 7]

> *'I think some people are reluctant, but it depends on how the knowledge can be shared, so some people might be reluctant to take a talk in a team meeting or something like that, which means a particular piece of information hasn't been shared.'* [Participant 8]

> *'Some people share things willingly just because they do it as a matter of course ... Other people usually share knowledge as and when they need it, and I think that drives how willing people are to share knowledge.'* [Participant 13]

Participant 3 indicated that he or she would not share his or her knowledge unless someone in the team is in need of or requests it. As Mitchell (2005:633) notes, resistance to, or lack of interest in, sharing knowledge deprives others of the opportunity to gain knowledge; thus, team members

have to be motivated to share their knowledge. Furthermore, Participants 3 and 4 indicate that due to the different roles that members play in the virtual team, it is likely that the knowledge they seek to share will not always be relevant to other team members; as a result, they might choose not to share it.

In addition, Participant 5 indicated that team members in Johannesburg do not naturally share their knowledge; it appears as though they are reluctant to do so, because they perceive the London team members to be strange or 'weird'. Team members' mutual perceptions of one another can hence influence their working relationship and in turn affect their readiness to share knowledge among themselves. In this regard, Khalil and Shea (2012:46) are of the opinion that emotions and personal relationships may affect the willingness of team members to share knowledge with each other. As previously mentioned, it is thus less than likely that two team members with an unfriendly and spiteful relationship will share knowledge with one another; the implication is that members of a virtual team have to work hard to motivate their fellow colleagues to share their knowledge. In support of this, Participant 6 indicated that less experienced team members, in this case the Johannesburg team members, are reluctant to share their knowledge due to their insecurities or lack of confidence, which may be as a result of a lack of motivation to share their knowledge.

Furthermore, Participant 8 indicated that some 'people might be reluctant to take a talk in a team meeting' and this is based on the context of team meetings not being an ideal or preferred place for team members to share their knowledge. It could be that some team members are reluctant to share knowledge in team meetings because no one motivates them to share it; for example, other team members might not be raising issues or problems to which they feel they can contribute relevant knowledge. As a result, they will not share their knowledge and instead assume that everyone else in the team is already in possession of the knowledge needed to resolve the problem. In illustration of this, Participant 13 said that 'people usually share knowledge as and when they need it, and I think that drives how willing people are to sharing knowledge'. It may be, as noted by Phung et al. (2016:76), that some team members do not see the value or point of a give-and-take relationship of sharing their knowledge with their colleagues. Therefore, if the need to share knowledge does not present itself, team members are less likely to be motivated to

share their knowledge. In support of this, Riege (2005:24) indicates that team members seem to share their knowledge voluntarily only if they see the value and importance that the process will add to their work, if they are motivated to share and acquire knowledge, or if they have a positive relationship with a certain colleague.

#### 4.5.1.4 Time constraints

Most Participants mentioned that they experienced challenges relating to time constraints when sharing knowledge. They indicated that although they have knowledge they need to share, they do not always have the time to share it. In line with this, Participant 11 mentioned that the virtual team doesn't 'allocate a block of time for updating Wikis or whatever'. Similarly, Participants 2 and 4 indicated that they do not get time allocated specifically for knowledge sharing, except when they have team meetings. However, they 'can share [their] knowledge at any time'; for example, as soon as they complete a task which involved interesting knowledge, they can share it with fellow team members. In line with this, Participant 5 indicated that although there is no specific time for sharing knowledge, it happens as people may find the time in between tasks to share their knowledge. As Participant 7 mentioned, sharing knowledge 'is just something that we have to try to fit in around all our other work'.

In addition to the above, Participants 7 and 8 indicated that a lack of time dedicated to knowledge sharing resulted in them hoarding their knowledge. In support of this, Participant 7 mentioned that there are 'updates that I would like to do, things I need to write down; there are some procedures I need to write for the projects I was involved in, which means I haven't shared my knowledge because I haven't had time to do them yet'. In line with this, Participant 8 mentioned that there are 'Wikis [that] need to be updated but no one really has the time to actually do it'. Furthermore, Participant 14 indicated that team meetings are useful for sharing knowledge, but there is not a lot of time to give a detailed account of their knowledge. This suggests that team members may be reluctant to share their knowledge because they will not be able to give a detailed account of what they know, due to time constraints that are experienced during team meetings. In line with this, Participant 3 mentioned that 'there is not enough time' to share knowledge, which is due to their workload not allowing them to have the time to share their knowledge. In line with this, Participant 7 indicated that their work is more important and

that knowledge sharing is not a priority. In support of this, Participant 11 offered as an example that 'there are lots of competing priorities and perhaps updating a Wiki doesn't come at the very top'. In line with this, Participant 8 is of the opinion that a lack of time for knowledge sharing may also result in team members 'being reluctant to share' their knowledge; for example, 'someone might have a bit of information [or knowledge] but they are too busy to store it on the Wiki or knowledge repository'.

Participants 2, 3 and 13 indicated as well that working with the London team means that they are subject to the difference in time zones between the two locations. This impacts on the time at which members of the London team provide them with feedback or respond, leading to delays due to the fact that 'at some point in the year [the time difference] is two hours' and because their work is 'validated or assessed' by members of the London team. Therefore, members of the London team 'start two hours earlier and finish two hours later'. It appears that members of the Johannesburg team find themselves having to wait for guidance, advice or validation that what they are doing is correct before they can proceed with completing their work. The difference in time zones causes frustrating delays in responses or feedback and leads to extended work completion times. In this regard, Participant 11 is of the opinion that 'the time difference between the London and Johannesburg team sort of inhibits some sort of knowledge sharing'. This challenge appears to be evident when team members have to wait for knowledge which they need from mentors or colleagues in the London team in order to proceed with their work.

#### 4.5.1.5 Culture

The following responses indicate the challenges relating to culture when sharing knowledge. Two Participants mentioned that they experienced challenges relating to culture. The following responses reflect on this:

> *'There are certain things that I would share with my immediate or local Johannesburg team that I would not share with my London team … It is definitely a cultural factor … I think culture is definitely a huge factor because you are able to communicate and be open.'* [Participant 3]

> *'it's culturally quite different in South Africa than in the UK, so I guess there is some kind of issues that we have had to try and overcome in different ways.'* [Participant 5]

It appears that the difference in the national culture of South Africa and the United Kingdom (England) have an influence on the virtual team's knowledge sharing. In support of this, Participants 3 and 5 indicated that 'it's culturally quite different in South Africa than in the UK' and that this results in team members' reluctance or preference to share certain knowledge with team members in the other location or within their local team only, which can also impact their willingness to communicate knowledge amongst each other. In support of this, Zaglago et al. (2016:4) indicate that this often leads to team members only sharing common knowledge due to the fear that their specialised knowledge may be unfairly scrutinised by other team members.

#### 4.5.1.6 Gaps in awareness of knowledge

Most Participants mentioned that they experienced challenges relating to a gap in awareness of knowledge. It appears that members of the Johannesburg team are more likely to experience a gap in awareness of knowledge due to their lack of experience and knowledge. In support of this, Participant 7 indicated that members of the Johannesburg team are likely to experience a gap in awareness of knowledge because they are new and less experienced and that is likely to result in them not knowing 'what the best sources [of knowledge] are and to know who to ask', 'because with research sources it is quite difficult to know which are the best sources'. In line with this, Participant 10 said the problem is caused by 'the challenge of the [virtual sub-]teams' being 'in different locations', with team members in Johannesburg all being inexperienced and missing out on in-person contact and communication with experienced members of the London team. In illustration of this, Participant 10 indicated that "in London, I can easily wonder at [another team member's] desk and if I'm asking a question, somebody might overhear it and be, like, "Oh, I know the answer to that"", whereas members of the Johannesburg team miss out on such opportunities to share knowledge because most of them may not have the knowledge that another member of the Johannesburg team is in need of. In addition, Participant 3 indicated that members of the Johannesburg team do not know the full complement of resources that are available to them to use for the library service and that they were made aware of this by a more experienced member of the London team.

Riege (2005:25) notes that the lack of awareness of each other's knowledge is one of the biggest knowledge-sharing barriers in virtual teams. In this vein, Participant 3 indicated that members of

the Johannesburg team were never informed of the availability of the resources they could use in carrying out the library service. As Atkova and Tuomela-Pyykkönen (2015:107) observe, when team members do not know what their colleagues are doing or what they know, this leads to duplication of effort and time wasted in searching for solutions or knowledge that another member of the virtual team already possesses. Therefore, it appears that members of the Johannesburg team did not have any knowledge of the existence of the resources. In line with this, Participant 9 provided clarity on the cause of this challenge by indicating that what the virtual team does 'is so broad that there are so many different sources'. In an attempt to explain why a gap of awareness exists, Khalil and Shea (2012:44) indicate that if the team member sharing the knowledge is not able to estimate the state and size of the receiver's knowledge base, he or she runs the risk of sharing common knowledge or knowledge that already exists in the receiver's knowledge base, which is likely to mean the knowledge sharing is not productive or valuable.

In this regard, Participant 4, a member of the Johannesburg team, said there is a lot of knowledge available; however, team members 'can't find what [they] are looking for specifically'. It may be that team members have a lot of knowledge available to them, but they do not know where to find that knowledge. Similarly, Participant 7 mentioned that 'there can be an element of information overload because there is so many different places to look'. It appears that team members' abundance of knowledge sources was not making it easy for them to find the knowledge they require, because they had a gap in awareness of which sources contain the knowledge they require. In support of this, Participant 7 also indicated that when searching for knowledge, 'you don't always know what the necessary is' when selecting sources to search for knowledge.

In addition, it appears that team members are not informed of any new Wikis or amendments that are made to existing Wikis. As Participant 14 recalled, 'I asked a colleague how to tackle a particular task and they pointed out to me that since the last time we had spoken about this task, there is now an entry on one of the Wikis, and so it just didn't occur to me that it would be on the Wiki'. Therefore, there appears to be a gap in the awareness of knowledge, in terms of knowing what knowledge exists or is available in the virtual team's collection of Wikis. By contrast,

Participant 5 was of the opinion that 'the main thing is knowing that they are there'. It appears that Participant 5 believes that knowing that the knowledge they require exists is sufficient for them to start their search for that knowledge. However, Participants 5 and 10 also indicated that in some instances a fellow team member would give them direction by informing them that 'you should have checked that Wiki', or they realise that 'oh, I could have done that better if I had asked someone'. Khalil and Shea (2012:44) indicate that even in the case that a team member has found or is directed to a relevant colleague, he or she may want to engage in knowledge sharing but may not be able to effectively receive and use the knowledge because of an inability to identify the value of the new knowledge and apply it.

### 4.5.2 Organisational barriers

Findings from the literature point to organisational factors that influence knowledge sharing. These factors include investment of financial support, team goals and strategy, team structure, communication, culture and management support. The responses below highlight various such organisational barriers.

#### 4.5.2.1 Investment or financial support

The following responses indicate the challenges relating to investment or financial support. Two Participants mentioned that there are challenges relating to investment in or financial support of knowledge sharing:

> *'I think it works well when we can send team members to spend time with each other, but that's expensive and we can't do that and it's not practical, but we'd love to get the whole team together one day, but I can't see that happening.'* [Participant 6]

> *'We have cost issues in terms of being able to send people out to Johannesburg or vice versa.'* [Participant 13]

Velmurugan et al. (2010:152) note that meeting face-to-face makes it easier for team members to interact virtually, as a real connection and relationship can be formed. However, Participants 6 and 13 indicated that it is costly or expensive to send team members from one office to the other in order for them 'to spend time with each other'. There appears to be a lack of investment or financial support dedicated to sending team members from one office to the other in order for team members to meet one another. In line with this, Wendling et al. (2013:250) indicate that

although ICTs play a major role in knowledge sharing in virtual teams, they do not completely replace face-to-face communication amongst team members. Similarly, Velmurugan et al. (2010:152) maintain that in-person meetings are the most important way for team members to get to know each other and build trust before they take part in a virtual team.

#### 4.5.2.2 Team structure

One Participant mentioned that some of the challenges to knowledge sharing relate to the virtual team's structure. Participant 6 said, 'I think the main problem is bringing the two teams together in order to encourage them to feel like they are one team, because within their two teams, they are actually one team, and it is difficult to make that happen on a videoconference'. It appears that the seperation of members of the virtual team as a result of their location in the London and Johannesburg office causes difficulties in terms of sharing knowledge amongst themselves. In this regard, Wendling et al. (2013:240) have indicated that the relationship between colleagues in a virtual team, especially between members of different groups within a team, may be a barrier to knowledge sharing. As such, Atkova and Tuomela-Pyykkönen (2015:108) recommend that a climate of togetherness and trust is necessary for proactive knowledge sharing in a virtual team.

#### 4.5.2.3 Communication

Two Participants mentioned that there are challenges relating to communication when sharing knowledge. According to Participant 11, it appears that the virtual team's challenges relating to communication is caused by members of the virtual team 'not being physically next to each other', which restricts team members from the two teams from being able to have 'a quick chat with the person that [they] sit next to'. In this regard, Riege (2005:27) indicates that knowledge sharing is more likely to occur in virtual teams if communication is not restricted amongst certain team members by the physical work environment and layout of the virtual team. In addition to this, Participant 1 mentioned that a 'bit of communication breakdown' is caused by or 'depends on the type of technology that [they] use'. It appears that the virtual team's knowledge-sharing technologies may not be effectively facilitating communication and, as a result, create challenges for knowledge sharing. Furthermore, it appears that the Johannesburg team's constant physical communication with one another and ineffective technologies is a challenge to knowledge sharing as communication is limited to their physical work environment.

#### 4.5.2.4 Culture

Two Participants mentioned that there are challenges relating to culture when sharing knowledge. In line with this, Velmurugan et al. (2010:153) indicate that virtual teams often comprise of team members from different backgrounds and cultures and that members may not always be aware of the differences between each others' cultures or willing to learn about other team member's cultures. These differences can make it hard to manage the relationships among team members. It appears that the cultural differences between members of the virtual team are undermining their ability to share knowledge amongst one another. In support of this, Participant 3 mentioned that 'everything has to be of a certain standard and you must have done extensive research before you can even think about sharing something'. It appears that members of the Johannesburg team are reluctant to share certain knowledge with their colleagues in the London team due to their cultural differences. In support of this, Participant 3 also mentioned that they 'are reluctant to talk to someone [in the London team] about something'. In this regard, Wendling et al. (2013:240) are of the opinion that the relationship between colleagues in an organisation, especially between members of different teams, has an influence on, and may be a barrier to, knowledge sharing. In illustration of this, Participant 3 mentioned that 'I'd be more comfortable with sharing with someone in the local team than I would in the London team', which suggests that the cultural difference is having a negative impact on team member's relationship with one another, which in turn creates a challenge for knowledge sharing amongst team members.

Participant 5 mentioned that 'in Johannesburg, because it's a new team, people need great encouragement to share their knowledge than perhaps we do in London; because it's a new team as well, the guys in Johannesburg hadn't previously worked together before. Creating the right culture in Johannesburg, the same culture as it is in the London team, has been really important.' It appears that, because the Johannesburg team is a newly formed sub-team, it has not yet adopted the London team's knowledge sharing culture; moreover, it is very difficult to teach the newly formed team when the existing London team members are 'thousands of miles apart' from them. In this regard, Atkova and Tuomela-Pyykkönen (2015:108) indicate that a virtual team's culture cannot be easily changed as it is rooted in the core values and mission of the virtual team.

Furthermore, it is also difficult to create a new knowledge-sharing culture from scratch, especially in virtual teams in which members have no previous experience of working together.

### 4.5.3 Technology barriers

Findings from the literature show that technological factors also influence knowledge sharing. The following responses highlight the technological knowledge-sharing challenges that are associated with the the different ICTs used by the virtual team.

#### 4.5.3.1 Intranet

Most particpants mentioned that they experienced challenges when using the intranet to share knowledge. A common problem with using the intranet is that the information available on it is not updated frequently and, as a result, becomes outdated. Participants 2 and 7 also noted that there are 'a lot of occasional technical problems with the Intranet' and that 'there is a problem with searching the intranet site'. It appears that the intranet's search functionality is not effective, as it does not retrieve the required knowledge, and as a result, team members have to browse or navigate through the intranet to find the knowledge they require. In addition, Participant 4 mentioned that occasionally 'the intranet is slow', which may be frustrating for virtual team members navigating through it to locate much-needed knowledge. Participant 4 also mentioned that they 'sometimes can't access certain pages on the intranet', which appears to be a major barrier to knowledge sharing as team members will not be able to access and benefit from the knowledge that is located on the inaccessible webpages. In line with this, Participant 6 appears to shed some light on why the virtual team may be experiencing problems relating to disfunctional search functions and inaccessible pages on the intranet, indicating that the virtual team is 'dependent on another team to help [them] develop [the intranet]'. It may be that these problems are not experienced first-hand by the developers of the intranet and therefore do not get resolved or addressed. However, this is based on the assumption that members of the virtual team have not informed the developers of the intranet about these knowledge-sharing challenges. Furthermore, Participant 12 indicated that members experience a 'challenge of using the intranet', one related to 'understanding of how the intranet works'. It seems that team members do not have expert level knowledge on how to use the intranet. In this vein, Participant 11 said that when using the intranet, 'there is a small barrier [that he or she experiences], that [he or she

feels that other team members] just run with it [when] they don't know how to edit things [on the intranet]'; this appears to be caused by a lack of knowledge on how to use the intranet.

In addition to the above, Participant 8 indicated that the intranet was developed before the Johannesburg team was assembled and that it was done so largely to suit the needs of the London team. This appears to be a major barrier to the sharing of knowledge between the two teams, in that members of the Johannesburg team do use the intranet as often as those in the London team, given that the content is less relevant to them and less likely to help them carry out work. In this regard, Participant 13 said that it is a challenge to get members of the virtual team to contribute to the intranet and to ensure they 'remember and utilise the range of information that is loaded [on it]'. It appears that after knowledge or documents are uploaded to the intranet, virtual team members 'forget that there are there in their day-to-day life' and, as a result, do not make use of the knowledge and documents available to them on the intranet.

#### 4.5.3.2 E-mail

Most particpants mentioned that they experienced the following challenges when using e-mail to share knowledge, as the following responses demonstrate:

> *'The person doesn't read their e-mails as soon as you've sent them, so there is a delay in their response.'* [Participant 1]
>
> *'With e-mails, there is sometimes a time delay … it's too many e-mails and the time that it gets to someone to respond to the e-mail …'* [Participant 3]
>
> *'It's hard to interpret what somebody is saying or what they are saying through an e-mail.'* [Participant 4]
>
> *'The only people that can access [the e-mail] is you and the recipient.'* [Participant 5]
>
> *'… As a way of sharing knowledge [in e-mails] outside of those two people it is not very efficient.'* [Participant 6]
>
> *'You can have really good knowledge that is just in an e-mail somewhere and it hasn't been shared with the wider team.'* [Participant 7]
>
> *'Rather than it being in one place, where the whole team can all view it, let's say a Wiki, it's shared amongst 25 people, ten of whom might delete the e-mail straight away.'* [Participant 8]

> *'An e-mail might get overlooked or lost or it might end up in your spam folder by accident … e-mail might sound awful and therefore, you don't get the right idea of what the person wants.'* [Participant 10]

> *'They are just one-to-one knowledge sharing and they are not necessarily something that everyone can access.'* [Participant 11]

> *'I think the main challenge with e-mails is the volume of e-mails we receive … You forget where you put that e-mail and then sometimes it is difficult retrieving that e-mail and getting it back again … E-mails don't accommodate somebody's tone of voice … can be badly misunderstood if somebody doesn't write it in just the right way.'* [Participant 12]

> *'Heavily used in the team … there are just so many of them … there is a danger [that] you miss important ones.'* [Participant 14]

Participants 1 and 3 indicated that the problem with e-mails is that they occassionaly result in a delayed response from fellow team members. In addition, Participant 3 and 12 appear to suggest that this may be caused by having too many e-mails sent to an individual and the individual not being able to go through the e-mails and respond in an instant manner. In support of this, Participant 10 indicated that 'an e-mail might get overlooked or lost or it might end up in your spam folder by accident', which may be causing fellow team members to take a long time before responding to their colleagues. In addition, Participant 12 mentioned that 'you forget where you put that e-mail and then sometimes it is difficult retrieving that e-mail and getting it back again.'. Furthermore, Participant 4, 10 and 12 indicated that 'e-mails don't accommodate somebody's tone of voice' and that it's hard to interpret the message in an e-mail and as a result, e-mails can be 'badly misunderstood'; what is more, '[the] e-mail might sound awful and therefore you don't get the right idea of what the person wants'. In this regard, Velmurugan et al. (2010:152) indicates that the messages conveyed in e-mails are known to be miscommunicated and misinterpreted by the recipient because they are difficult to understand. Therefore, virtual team members may have to use e-mails with caution, as knowledge sharing cannot take place if team members are not interpreting the messages in an e-mail appropriately. These messages turn into knowledge once individuals are inspired to act in a certain way after reading them. Hence, a misinterpreted message cannot inspire the required or appropriate action, which means knowledge sharing cannot take place.

In addition to the above, Participant 11 indicated that e-mails function as a 'one-to-one knowledge sharing [technology]' and not 'everyone can access' the knowledge contained in an e-mail. In addition, Participant 5 indicated that there is a challenge in terms of sharing the knowledge contained in an e-mail because in most cases the knowledge can only be accessed by the sender and the recepient. In support of this, Participants 6 and 7 also indicated that e-mails are not the most efficient 'way of sharing knowledge outside of those two people' because the knowledge in them 'hasn't been shared with the wider team'. Participant 8 added furthermore that e-mails are not stored in one location where 'the whole team can all view it'.

#### 4.5.3.3 Videoconferences

Most Participants mentioned that they experienced challenges when using videoconferences to share knowledge. The following responses reflect these challenges:

> *'You can't hear fully what the person is saying.'* [Participant 1]
>
> *'Sometimes the mics are not working … you have to scream a little bit in the meeting rooms … we can't see everybody in London because they are such a big group.'* [Participant 2]
>
> *'Sometimes there is bad audio and you can't hear things.'* [Participant 3]
>
> *'[There are] instances where the volume won't work … our camera won't work or we are unable to login …'* [Participant 4]
>
> *'Sometimes there are some sound issues with video conferences.'* [Participant 5]
>
> *'It is not particularly natural conversation … there is a hesitation and you miss body language … when you have big videoconferences of more than … let's say you have five people in one room and ten in another, again it is not the most natural way to communicate …'* [Participant 6]
>
> *'Sometimes the sound just doesn't work properly … I find it difficult to know when the other person is about to speak, especially when there is lots of people in the same videoconference.'* [Participant 7]
>
> *'[Challenges with videoconference] rooms being booked.'* [Participant 8]
>
> *'You have to make a lot of arrangements … [and the] remote is not working, sometimes in meetings the visual is not great.'* [Participant 9]

*'Sometimes we are struggling to hear one another … the microphone might not be working strong enough for everyone to hear everyone … I think the audio is probably the most annoying part of videoconferencing … If the screen isn't working and [then] there isn't a videoconference … making sure that everyone gets heard, and also if you have a presentation or PowerPoint or something included, then the technical challenges that that brings with it from both sides to actually see the presentation.'* [Participant 10]

*'… People hearing … and sometimes there is time lapse which means people talk over one another and it gets a bit confusing …'* [Participant 11]

*'They are quite contrived experiences … it can be a little stilted and sometimes a bit of a missed opportunity in the nicest possible way.'* [Participant 12]

*'… People can feel a little bit inhibited because you end up talking over the top of somebody else … there's pressure in arranging a videoconference because it takes time and … someone to organise it'* [Participant 13]

*'Sometimes room bookings fail … there is a little bit of awkwardness sometimes from using this technology.'* [Participant 14]

Participants 1, 3, 4, 5, 7, 10 and 11 indicated that 'there are some sound issues', 'there is bad audio and you can't hear things', that 'the volume won't work', or 'the sound just doesn't work properly'; as a result, they '[struggle] to hear one another' and to hear what the person at the other end is saying when using videconference technology. In addition, Participants 2 and 10 indicated that in order to make 'sure that everyone gets heard', they have 'to scream a little bit in the meeting' held via videoconference, because possibly 'the mics are not working' or the 'microphone might not be working strong enough for everyone to hear everyone'. Participant 10 took the view that 'the audio is probably the most annoying part of videoconferencing', which suggests that poor audio quality in team meetings facilitated by videoconferencing technology is a major knowledge-sharing challenge. But it appears that audio quality is not the only problem with videoconferences. Participants 2 and 4 indicated that occasionally the 'camera won't work' and that they 'can't see everybody in London because they are such a big group' during their team meetings. The camera may not be including everybody in London on the screen that the Johannesburg team would be viewing. Therefore, the audio-visual features of videoconferences appear to be a challenge for knowledge sharing amongst members of the Johannesburg and London teams.

In addition to the above, Participants 6 and 12 indicated that communication is a challenge when videoconferencing, as ‘it is not particularly [a] natural conversation’ and ‘they are quite contrived experiences [as their communication] can be a little stilted’. This is worsened when the team has videonconferences in which numerous members are in attendance, with ‘five people in one room and ten in another’. Participant 6 also noted ‘there is a hesitation and [they] miss body language’ when having their team meetings. In the same vein, Participant 7 indicated that it is ‘difficult to know when the other person is about to speak, especially when there is lots of people in the same videoconference’.

It appears that the team member’s hesitation or difficulty when communicating is caused by not knowing when another person is about to speak, especially when they have to monitor a room with ‘lots of people’ in it, something that appears to be a key problem. Such hesitation may be the result of a delay caused by the videoconferencing technology’s inability to instantly transmit visual and audio frequencies from London to Johannesburg and vice versa. This finding is supported by Participant 11 and 13’s indication that ‘there is [a] time lapse, which means people talk over one another and it gets a bit confusing’; this has a negative impact on communication since ‘people can feel a little bit inhibited because you end up talking over the top of somebody else’. As a result, Participant 14 said, ‘there is a little bit of awkwardness sometimes from using this technology’, which appears to be caused by a combination of poor audio, the inability to see the person to whom one is speaking, and a time delay in communication, which causes people to talk over one another.

In addition, Participant 8 indicated that there is a challenge relating to organising or booking a videoconference room. Similarly, Participant 9 mentioned that team members ‘have to make a lot of arrangements’. It appears that arranging a videoconference room can be a lengthy process. In this regard, Participant 13 indicated that ‘there’s pressure in arranging a videoconference because it takes time and … someone [else has] to organise it’ for members of the virtual team who would like to have a videoconfernce team meeting. Participant 14 noted that ‘sometimes room bookings fail’, which suggests that attempts to have team meetings are not always successful and there are missed or deferred opportunities for sharing knowledge with other members of the virtual team.

Furthermore, Participants 9 and 10 said technical problems sometimes arise in videoconferencing, alluding to this through phrases such as 'volume won't work', 'camera won't work', 'remote is not working', 'microphone might not be working'; there are also 'technical challenges … if you have a presentation or PowerPoint or something included', or if members are 'unable to log in' to the videoconferencing technology to have their meeting. In addition, Participant 13 indicated that 'we have certain locations in the London office and Johannesburg office where the equipment is not set up to use a video and call features', which suggests that team members are not always able to use videoconferencing facilities; as a result, team members may miss the opportunity to share knowledge using videoconferencing.

#### 4.5.3.4 Instant messaging

Most Participants mentioned that they experienced challenges when using instant messaging to share knowledge, as the following responses make it clear:

> *'The person doesn't read their texts on time or ... they haven't replied to you.'* [Participant 1]
>
> *'... It is easy to miss, the notification isn't that great.'* [Participant 2]
>
> *'Once you close the program, you lose all of the information.'* [Participant 4]
>
> *'You can't save anything on it.'* [Participant 5]
>
> *'It is also slightly disruptive, so it interrupts whoever you are talking to.'* [Participant 6]
>
> *'There is no archive.'* [Participant 7]
>
> *'Sometimes people might use it for more complex things ... like when you get an IM and it is the size of an e-mail.'* [Participant 8]
>
> *'The challenge is actually getting the tone wrong ... you think just because it is instant messaging you can be more informal and therefore you might, without knowing, come across as too relaxed or too snappy.'* [Participant 10]
>
> *'Tt can sometimes be difficult to know if the person has seen your message or maybe they are away and it is not obvious that they are away.'* [Participant 11]
>
> *'It doesn't work so well if you don't know whether the person is there or not ... [I]t is*

*very much geared towards a certain type of conversation. Somebody would have sent me an instant message and it [has] suddenly grown into quite an evolved technical conversation …'* [Participant 12]

*'It is not recorded … People are not always available … As a recepient of those messages, you can be interrupted at any time.'* [Participant 13]

*'If something is agreed upon then a decision makes the conversation that there needs to be a record of … [and] the teams on both sides of the virtual team use different PCs at different locations, so sometimes the instant messaging will not realise that you are moving from one location to another and so somebody messages you during a move and they are wondering why you haven't responded, but that's because the instant messaging opened up on the other computer … you would be wondering why the person hasn't replied to you.'* [Participant 14]

Participant 1 indicated that the challenge with instant messaging is that colleagues either do not read the instant message or respond to it, which results in a delayed response or no response at all. In line with this, Participant 2 indicated that 'it is easy to miss the notification', as the feature notifying a team member that they have received a message is not visible, which explains why a team member may not respond instantly, as they may not be aware that they have received a message in the first place. Another reason is provided by Participants 11 and 13, who indicated that 'people are not always available' and that it is 'sometimes difficult to know if the person has seen your message or maybe they are away'. This suggests that a sender may have sent an instant message and assumed after a couple of minutes that their message was read, even though it has not, because there is no notification or feedback mechanism that notifies the sender that their message was sent and read by the recipient of the message. In line with this, Participant 12 indicates that instant messaging 'doesn't work so well if you don't know whether the person is there or not', which suggests that not knowing if a message was read or not is a challenge.

In addition to the above, Participant 14 indicated that 'the teams on both sides of the virtual team use different PCs' and that they are able to work 'at different locations' or workspaces within the the two offices. Therefore, it appears that team members may be 'moving from one location [or workspace] to another' and that during this time, 'the instant messaging [application] opened up on the other computer'; as a result, 'sometimes the instant messaging [system] will not realise that you are [moving]'. It also happens that 'somebody messages you during a move' and the message does not reflect on the instant messaging application opened on the other computer that

the team member would have relocated to, which results in the sender of the instant message ‘wondering why you haven’t responded’ or ‘wondering why the person hasn’t replied to you’.

Furthermore, Participant 14 indicated that ‘if something is agreed upon [within an instant messaging conversation], then a decision [necessitates a need for the conversation to be recorded]’, which suggests that, in some cases, conversations between team members result in the creation of knowledge and in order to share this knowledge it has to be stored. However, Participant 4 indicated that once the instant messaging application is closed, it erases or does not store the knowledge, for example, the chat history of conversations between team members. In support of this, Participants 5 and 13 indicated that ‘you can’t save anything on it’ and that the knowledge ‘is not recorded’, which suggests that team members would not be able to save the knowledge located in a record of their chat history, even if they wanted to. Participant 7 confirmed that ‘there is no archive’, which suggests that the team’s instant messaging software does not support such a functionality.

In addition to the above, Participants 6 and 13 indicated that instant messaging is ‘slightly disruptive’ and that ‘as a recepient of those messages, you can be interrupted at any time’. Therefore, instant messaging may distract other team members from carrying out their tasks and responsibilities. Furthermore, Participant 10 indicated that team members tend to get the wrong message or have a wrong interpretation of the tone of a message sent using instant messaging, which can be a challenge because instant messaging ‘can be more informal’ and team member’s messages may be interpreted as ‘too relaxed or too snappy’. In line with this, Participant 8 indicated that some team members misuse instant messaging by sending a lengthy message which would have been more appropriate to send by e-mail. As Participant 12 observed, instant messaging is ‘geared towards a certain type of conversation’ and sometimes team members misuse it when the conversation ‘suddenly [grows] into quite an evolved technical conversation’. It appears that instant messaging should not be used for any lengthy conversation or message, as indicated in section 4.4.4 where most Participants said they used instant messaging for communications that are immediate or quick and short.

#### 4.5.3.5 Wikis

Most Participants mentioned that they experienced challenges when using Wikis to share knowledge. Participants 7, 8, 11 and 12 indicated that ‘the only real barrier or challenge is 'keeping [the Wikis] up-to-date’, ‘maintaining current [and] up-to-date information’ and that ‘some of [the Wikis are] quite out of date’; also, ‘it is not always clear to see who was the last person to update them’. As Participants 6 and 8 attested, a challenge with Wikis is that ‘they get created and left’, ‘they are not being kept up to date’, and ‘all [the] team members don’t update them as often as they should’. It would appear, then, that a challenge in using Wikis for knowledge sharing is that ‘people don’t update them enough’. Further to this, Participants 7 and 12 indicated that Wikis do not get updated because ‘keeping them up-to-date’ is a challenge. Furthermore, Participant 6 indicated that team members ‘don’t update [Wikis] for obvious reasons and often it’s time’. As Participants 9 and 14 mentioned, when it comes to updating Wikis, ‘time is a huge issue’ and team members ‘don’t always get the time … to put information on a Wiki’.

In addition, Participant 6 indicated that there are ‘too many [Wikis] to update regularly’; as a result, Participant 1 noted that they do not use the Wikis ‘because [they are] not being updated [regularly]’. Additional reasons why team members may not be using Wikis were provided by Participant 7, who pointed out that some Wikis have ‘broken links’ and ‘some don’t have much information in them and need someone to work on them’; what is more, the ‘display of the Wikis’ is not optimal, as it does not contain all the knowledge in a Wiki and, lastly, ‘some are really out of date’. It appears that the insufficient and outdated knowledge that may be located in the Wikis is not a valuable source of explicit knowledge, and discourages team members from using the Wikis for knowledge sharing. For example, Participant 5 indicated that if the knowledge in the Wikis is ‘not updated, they are not very helpful’. Participant 6 also indicated that ‘to get the most out of them we need to update them’. However, Participant 13 indicated that in addition to keeping the knowledge updated, team members also experience a ‘challenge of keeping Wikis … relevant’, which suggests that knowledge may be kept updated; however, team members need to check whether it is necessary to have a certain Wiki in their collection, otherwise they run the risk of having too many Wikis, some of which were not being used as they were perceived as irrelevent.

In addition to the above, Participants 2, 3, 5 and 14 indicated that the 'Wikis are pretty sophisticated' and that there is 'quite a long list' of 'probably some 50 Wikis or so', or 'maybe somewhere between seventy and a hundred' Wikis: the virtual team appears to have 'Wikis on basically everything'. As a result, team members have to browse through the Wikis in order to find the knowledge they require. Furthermore, Participant 2 mentioned that 'I do wish that there was [some] sort of search function where you can search within Wikis'. It appears that the Wikis do not have a search functionality that enables team members to search for knowledge that is located only in the Wikis. This explains why team members have to browse through the long list of Wikis instead of using a search function that matches the key words used in their search.

However, Participant 2 indicated that in order to search for knowledge in the Wikis, 'what I currently do is just a Control+F [functionality on the computer which is a short-cut to opening the searching feature] but then I have to be on the Wiki page, so I still have to navigate from the home page all the way to the Wiki page', which appears to be a tedious task that may discourage team members from using the Wikis; alternatively, it may result in them not locating the knowledge they require if the Control+F function is not successful. However, the Control+F function does not appear to search the content located in Wikis, as it simply matches a key word against what is on a particular Wiki page. In line with this, Participant 5 indicated that it is 'hard when you start [to] get used to what's in the Wikis', which suggests that team members in the Johannesburg team may not know what knowledge is in the Wikis, as they are still inexperienced and would not think about searching the Wikis for knowledge that they had not previously come across, unless another team member had informed them of the existence of that knowledge in the collection of Wikis. In support of this, Participant 14 indicated that 'making sure that people know what's on the Wikis is also a task itself, but it is always difficult to keep up-to-date with what is on the Wiki and that is definitely a challenge'.

In addition to the above, Participant 7 indicated that 'it is not necessarily a responsibility for any one person to update a specific Wiki.'. In line with this, Participant 3 indicated that in terms of updating knowledge in the Wikis, 'if someone sees that something is out of date, then you speak to someone or you can change the information yourself'. However, Participant 8 said that 'there

is an issue with [Wikis] not [being] filled in if someone works in the Johannesburg team', which suggests that members of the Johannesburg team are not contributing to or updating the virtual team's collection of Wikis. In support of this, Participant 3 confessed that 'I have not updated the Wikis', which suggests that there may be team members in the Johannesburg team who notice that knowledge in the Wikis is out-dated but avoid or choose not to update it. In this regard, Participant 3 said that in instances where knowledge needs to be updated, team members 'speak to a mentor and talk about it, and they'll ask me if I feel comfortable with updating the information; if I say I'm not, then they will do it or they would try to get me to update the information'. It appears that Johannesburg team members, or all the team members that are less knowledgeable on how to update the Wikis, are not firmly encouraged to update the Wikis, which results in more knowledgeable team members updating the Wikis for them. In support of this, Participant 3 indicated that 'I just speak to someone who is able to update it'. Furthermore, Participant 6 said that '[l]ess experienced colleagues are intimidated about updating Wikis' and that Wikis do not get updated because 'junior team members are [too] intimidated to update them'.

Furthermore, it may be that team members are unable to update the Wikis because they experience problems when doing so or simply do not know how it is done. In this vein, Participant 7 noted that 'if you want to do a quick update sometimes it can be a bit fiddly', which suggests that updating a Wiki may require advanced skills or an experienced member of the virtual team who has done it multiple times. Participant 10 indicated that when updating a Wiki, 'the main challenge is to keep the format in the right way … there has to be standards to do that'. This suggests that team members with a lack of knowledge on how to update a Wiki in accordance with these standards may feel discouraged about doing so and view it as a lengthy process, instead of something they can accomplish quickly in a matter of minutes and in between other tasks.

#### 4.5.3.6 Knowledge repositories

Most Participants mentioned that they experienced challenges when using knowledge repositories to share knowledge. Participants 6 and 13 explained that 'the company search database', which is the virtual team's knowledge repository, 'is dependent on people updating it',

and that a ‘knowledge repository quite often needs a decent spring clean every few years or weeks’. However, Participant 4 indicated that there is ‘no formal system’ for updating knowledge in the knowledge repository; this results in a situation where ‘it was updated three years ago and [team members are then] using [the knowledge] now’, which means they run the risk of relying on outdated or incorrect knowledge. Participant 2 also said there were ‘instances when it was not updated’. As such, Participants 5, 8, 9 and 12 indicated that ‘making sure that [the knowledge repositories] are up to date’ and that ‘they [are] being kept up to date and [that] people [are] putting in the information on them’ can become a challenge ‘if people aren’t updating them or adding the documents [to the knowledge repositories]’. According to Participant 1, it appears that the knowledge repository has ‘broken links’ as a result of information in the knowledge respository not being updated or checked to ensure that links are still functional. Participant 11 indicated that members of the virtual team ‘risk having out-of-date information that [they] are relying on’ if the knowledge located in the knowledge repositories is not updated.

In addition to the above, Participant 6 indicated that in order to update the virtual team’s knowledge repositories, team members ‘need to commit time to doing [a] complete refresh or enhancement of where and how [they] are storing that knowledge’. Therefore, it appears that a challenge with updating the virtual team’s knowledge repositories is that it entails a ‘time-consuming review’ of how knowledge is stored on the knowledge repository. In support of this, Participant 9 indicated that ‘putting time in so that you make sure that things are up to date’ is a challenge associated with knowledge repositories. Similarly, Participant 4 observed that ‘there is a lot of information contained on these databases, but you might not need all [the] information contained [in it]’. This suggests that the knowledge repositories are not sufficiently comprehensive to support team members in carrying out their tasks. For instance, Participant 2 noted that ‘there are a number of jurisdictions that aren’t on the R & L database’, which suggests that certain areas of knowledge has not been added to the repository.

Moreover, Participants 7 and 14 indicated that the virtual team’s ‘enquiry database is difficult to search’, that ‘the challenge is the complexity of the searches carried out on the enquiry database’, that ‘you can’t carry out very complex searches’, and that team members have to rely on ‘helpful

ways of filtering results' in order to search the enquiries database, or knowledge repository, as it is a 'very large [database] and [it] isn't the easiest thing to search'. In this regard, Participant 5 indicated that 'knowing how to use [the knowledge repositories] is the other barrier', which suggests that the virtual team's knowledge repositories are not easy to use. For instance, Participant 6 mentioned that 'they are not as flexible as a Wiki, for example'. In line with this, Participants 7 and 14 indicated that the 'CDD database … doesn't always work properly and it's a bit cluncky because it is on [Microsoft] Access, which doesn't allow formatting'; furthermore, the enquiry database 'can't capture documents'.

In addition to the above, Participants 7, 10, 11 and 12 indicated that 'barriers to using our Touchpaper database, which is our database for research [e-mails] … is that the Johannesburg team don't have access to it'. This suggests that members of the Johannesburg team cannot search this knowledge repository, as they do not have direct access to it, and that 'somebody in London has to do that [for the] team in Johannesburg, which adds an extra step and extra time'; this makes them 'reliant on [other] people to update things', which appears to be a challenge for knowledge sharing as it runs the risk of knowledge not being delivered to members of the Johannesburg team 'as and when' it is required. Participant 9 described this challenge 'as a key one' for knowledge sharing by means of knowledge repositories. In addition, Participant 14 indicated that the Touchpaper database 'breaks down quite a lot and that means we lose the ability to look back into the past and see what we have done'. This implies that there are instances when the virtual team cannot retrieve knowledge they have stored in the knowledge repository; as such, it represents a failure in the virtual team's ability to share knowledge using this knowledge repository.

In addition to the above, Participant 10 indicated that 'access[ing knowledge located in the knowledge repository] can be a bit of a problem … because [the company search/CDD database is] a [Microsoft] Access database'. Furthermore, Participant 13 indicated that the virtual team's knowledge repositories 'are accessed through PCs but not through the intranet because of the way they are set up', and that 'everybody has a shortcut on their PCs [which they can use] to get to [the knowledge repositories]', which suggests that hosting the knowledge repositories on Microsoft Access and their accessibility on the desktop are not conducive to sharing of

knowledge; it may be better if the knowledge repositories were hosted on the intranet in order to facilitate easy access.

#### 4.5.3.7 Telephone

Most Participants mentioned that they experienced challenges when using the telephone to share knowledge. Participant 14 indicated that a basic challenge is that 'if a person isn't available at that specific time, then you can't have a phone conversation with them'. In line with this, Participant 2 indicated that they 'don't use [the telephone] that often' to communicate with team members in the London team, because 'in London they hotdesk a lot [which means that different team members use a single physical work station during different time periods throughout the day] and … usually if you phone, it's not the person you want to talk to'. It appears that team members do not use the telephone because it is not an effective knowledge sharing technology, given that they cannot always share knowledge with the team member that has it.

Furthermore, Participant 4 and 14 indicated that 'the way our offices [are] split up, it is difficult for some parts to call other parts because of international boundaries', and as a result, 'it's a bit complicated if you just want to make a simple phone call, because there are certain extensions which you may need to use'. This suggests that calling team members in the London office is not an easy thing to do, which may discourage Johannesburg team members from sharing knowledge using the telephone, considering that even after getting it right, the London-based team member with whom they want to share knowledge may not be available at the other end of the line. In illustration of this, Participant 7 indicated that 'the phones don't always work really well and [members of the Johnnesburg team] have problems with dialing'.

In addition to the above, Participants 5, 6, 7, 8, 10 and 11 indicated that a challenge to using the telephone for sharing knowledge is that 'sometimes the volumes are low', 'the actual phone lines … [are] down', 'you can't see people's faces', 'you can't see the person on the other side, so you don't know their body language', and 'you don't have any body language clues'; moreover, 'it's not recorded', 'so there is no archive … you have a conversation and then there is no record of it'. This suggests that the absence of these factors in a telephone conversation will affect the potential success of knowledge sharing in a negative way. In this regard, Participant 6 indicated

that the telephone is ‘not as successful in helping you build a relationship as a virtual video camera functionality’, which suggests that the telephone is not the best tool to use when sharing knowledge with other virtual team members as it is not the best way or method of building a relationship with other virtual team members. As Participant 11 observed, ‘it can be harder to communicate effectively over the phone’, a consideration that may influence the sharing of knowledge using the telephone.

Moreover, Participant 14 said that ‘people are becoming less willing to use the phone’. As Participant 9 noted, team members have a lack of experience and ‘confidence … [in] picking up the telephone … to call somebody and to communicate the message over the phone’. It appears to be another reason why team members are often reluctant to use the telephone to share knowledge amongst one another between the two locations. In support of this, Participant 11 confessed that ‘It’s a personal challenge, I don’t like to use the telephone’. Participant 7 confirmed that ‘the reluctance of people to use it sometimes’ is a challenge associated with using the telephone. Similarly, Participant 14 indicated that the telephone ‘doesn’t work quite as well as the other knowledge sharing technologies’, which suggests that team member’s reluctance to use the telephone may be due to the availability of other and more effective knowledge sharing technologies such as instant messaging and videoconferencing.

## 4.6 How knowledge sharing amongst the virtual team of legal information professionals can be enhanced

The fifth objective of this study was to establish how knowledge sharing amongst the virtual team of legal information professionals can be enhanced. In this regard, the following questions were asked: How is knowledge sharing amongst team members encouraged and promoted? What motivates you to share knowledge with fellow team members? What are your recommendations on how knowledge sharing amongst team members can be promoted or improved? In addition to these questions, the Participants were also asked probing questions in line with uncovering knowledge sharing enablers or enhancers. The responses contained in this section are all related to how knowledge sharing can be enhanced.

The literature review identified seven knowledge sharing enablers or enhancers, which are related to trust, enhancing communication, technology, reward systems, team structure, management support, and culture. The responses from most Participants indicated that Participants required the following to enhance knowledge sharing: enhancing communication, technology, reward systems, management support, and culture. The responses below elaborate on these themes.

### 4.6.1 Enhancing communication

Most Participants indicated that enhancing communication could in turn enhance how they share knowledge. Participant 3 noted that if the virtual team had 'clearer communication lines', then they would be able to share knowledge more effectively. In support of this, Participant 4 would like a plan or strategy that enables team members to 'be more open to sharing knowledge and in participating in, like, updating Wikis', which would enhance their ability to 'share knowledge openly'. The same Participant said virtual team members 'need to communicate more, sometimes with each other', which implies a recognition that there is plenty of room for improvement on this score. The Participant suggested that the virtual team should have 'a central place … that it is more systemised… [where] they can just search it and see that someone else has done this research'. However, it appears that this is already available to team members through the virtual team's knowledge repository (called, as already mentioned, the 'enquiries database'). It may be that Participant 4 is making this suggestion based on the fact that members of the Johannesburg team do not have direct access to this knowledge repository and always have to ask a member of the London team to carry out a search on their behalf, as indicated in section 4.5.3.6.

In addition to the above, Participants 5 and 7 indicated that knowledge sharing can be enhanced by 'encourag[ing] a bit more discussion between the groups' and 'encouraging people that we want to hear them speak and we want to hear what they are doing'. The suggestion being made is that the virtual team could benefit from team members being more willing to share their knowledge with colleagues. In support of this, Participant 13 indicated that knowledge sharing can be enhanced by 'telling the more experienced members of the [virtual] team … to ask a question even if [they] know the answer … [as] there is more less experienced members of the

[virtual] team sitting there going, "I don't know what they are talking about and I don't want to ask"'. This suggests that more experienced team members can play a role in encouraging less experienced team members to share their knowledge. Furthermore, Participant 7 indicated that in order to enhance knowledge sharing, 'it would be nice if some of the Johannesburg people could come over and spend some time with us in the UK as well', this in order to have 'more face-to-face contact' with members of the Johannesburg team instead of always sharing knowledge using computer-facilitated knowledge sharing technologies. Therefore, it appears that enabling Johannesburg team members to visit the London team in the UK could enhance knowledge sharing and communication amongst members of the virtual team as a whole.

In addition, Participant 6 indicated that he or she would like the team members to get together not only to share their knowledge but to improve the relevance and focus of topics they discuss in those meetings as it may improve knowledge sharing. In line with this, Participant 6 indicated that the virtual team needs 'to look at a different forum for carrying out our cross-team monthly meetings' and suggested that the virtual team should 'appoint representatives from both offices to discuss and to talk to the [virtual] team about what we get out of that session and change its focus'. It appears that Participant 6 would like team members at both locations to share their opinions, perception of the team meetings and put forward suggestions to improving them, so that they are a team effort and not something that is decided by one or a few team members. In this regard, Participant 7 mentioned that 'there are some improvements that we can make to our monthly meetings', and emphasisd the need 'to find a way to bring everybody together'. Similarly, Participant 6 mentioned that the virtual team needs to 'improve the way we come together as a group and perhaps become more focused about our discussion areas'. Participant 8 too suggested that 'improving team meetings' was a way to enhancing communication and knowledge sharing, which could be achieved by making 'them shorter and [more] focused'.

### 4.6.2 Technology

Five Participants indicated that technology could enhance how they share knowledge. The following responses reflect on Participant's suggestions on how technology could enhance knowledge sharing. Participants 6 and 12 indicated that in order to enhance knowledge sharing, 'updating information could be improved' and members of the virtual team 'need to be more

proactive in updating our Wikis'. Furthermore, Participant 8 indicated that knowledge sharing can be enhanced by 'improving some of the online [resources] and encouraging more of the people to update the Wikis and the different materials we have', which suggests that the updating of Wikis is key to enhancing knowledge sharing. In line with this, Participant 7 indicated that the virtual team should 'have a program to update all of our Wikis'. Similarly, Participant 7 indicated that 'it would be good if the Jo'burg team members were able to curate the Johannesburg collection of Wikis'. This would mean that 'we are all responsible for the information' – in other words, the entire virtual team, rather than only the London team, would update the Wikis. Furthermore, Participant 7 indicated that 'it would be good if we had ownership of specific Wikis', as it would mean that a particular team member is responsible for ensuring that certain Wikis are kept up to date, instead of it being a team effort; the latter is less than effective, since team members avoid, or are reluctant to undertake the updating of Wikis.

In addition to the above, Participant 8 maintained that the virtual team's collection of Wikis could be enhanced if they 'have a 'last updated' section, so that people know when they go into it when it was last updated, [they] can see when it was last edited and then take a view' of whether the knowledge is current and whether they can use that knowledge for decision-making. Participant 6 also indicated that 'having a smaller list of Wikis' could enhance knowledge sharing, as it would enable team members to go through the list of Wikis to check if there is any knowledge that is of use to them and also to 'rethink what [they] put in a Wiki', as Wikis are useful only if they have relevant knowledge. Therefore, it is important for virtual team members to think about what knowledge they add to their collection of Wikis.

Furthermore, Participant 8 indicated that the virtual team could enhance knowledge sharing by 'improving the existing tools' by 'making things more user friendly'. Similarly, Participant 6 said 'it would be great if chat features of Skype were integrated into the intranet because then you can open conversations out to a wider group'; this would enable team members to store their conversations, upload documents and 'bring other people in on conversations' that take place on Skype.

In addition to the above, Participant 8 suggested that the R & L (company search/CDD database)

should be ‘on a newer platform’. In support of this, Participants 7 and 10 indicated that ‘instead of having the R & L database as a [Microsoft] Access database, the whole content [should be] migrated to the intranet’ and ‘should probably be on SharePoint’. Furthermore, Participant 7 indicated that it would enhance knowledge sharing if team members were provided with ‘a bit more SharePoint training’ and ‘some general training on how to update the intranet’, which suggests that training team members would enable them to add more knowledge to the Wikis and intranet, thereby enhancing knowledge sharing by way of these technologies. Lastly, Participant 10 said that ‘it would be much helpful if they [the Johannesburg team] also had access to our enquiries database’, as the Johannesburg team could benefit from having direct access to this knowledge repository.

### 4.6.3 Reward systems

One Participant, namely Participant 2, indicated that a reward system could enhance how the virtual team shares knowledge. He or she also said the virtual team needs to have ‘better rewards’, as these ‘will motivate [them] to continue sharing, especially if [knowledge sharing] is helping people’. It was noted in the literature review that knowledge-sharing rewards or incentives can be both financial (extrinsic) and non-financial (intrinsic) (Khalil and Shea 2012:46), and that team member’s motivation or willingness to participate in knowledge sharing can be influenced through special rewards and incentive systems acting as extrinsic or intrinsic motivators (Atkova and Tuomela-Pyykkönen 2015:112). In line with this, Participant 2 indicated that the virtual team’s knowledge-sharing rewards ‘[do] not have to be something tangible’, which suggests that they may be intrinsic rewards as they do not have to be in the form of monetary or financial rewards. As Atkova and Tuomela-Pyykkönen (2015:106) indicate, intrinsic rewards may be non-financial rewards. An example Participant 2 provided was “if someone comes and says, “I read what you said in the Wikis and it helped me a million dollars, so thank you for that””. This is a good illustration of the kind of intrinsic rewards that would enhance knowledge sharing amongst members of the virtual team.

### 4.6.4 Management support

Three Participants indicated that management support could enhance how the virtual team shares knowledge. Participant 11 indicated that knowledge sharing can be enhanced by ‘having senior

management and people in [the virtual] team buying into knowledge sharing', which suggests that if knowledge sharing were a team effort supported by management, it would lead to enhancement of knowledge sharing. In line with this, Participant 6 also indicated that there is a need to encourage 'managers in the team to try and tell people to share more knowledge on the team site, and not by e-mail but on the team site, because then it becomes a resource'. It appears that Participant 6 would like the virtual team's managers to encourage team members to share more knowledge using the virtual team's intranet and/or Wikis, rather than predominantly using e-mails, as knowledge that is in an e-mail can be accessed only by the sender and the recipient, rather than the virtual team as a whole.

In addition to the above, Participant 13 indicated that knowledge sharing can be enhanced by 'encourag[ing] the [virtual] team to keep making suggestions, because it's very hard for a manager to say what they think will be useful to the team members'. In line with this, Participant 11 indicated that 'having an hour a week blocked out for you to do just knowledge sharing type of work' would enable team members to have more time to share their knowledge. This appears to be a suggestion that management should consider implementing in an effort to enhance knowledge sharing. The same Participant noted that 'using formal objectives [that make knowledge sharing a requirement] is a useful way to encourage people to share [knowledge] and [also] giv[es] people the forum to share [their knowledge]'; as a result, that would ensure that management is transparent in what they require from team members in their participation in knowledge sharing activities. As Riege (2005:26) has observed, it is management's responsibility to stimulate knowledge sharing amongst team members in a transparent fashion in order to obtain support and participation from them.

### 4.6.5 Culture

Three Participants indicated that culture could enhance how the virtual team shares knowledge. Participant 1 mentioned that 'a lot of people overlook knowledge sharing', implying that the virtual team has a culture of not noticing or valuing knowledge sharing. The Participant seemed to feel that knowledge sharing should be 'something that you would expect the next person would do' and that stimulating a culture in which knowledge sharing is valued by all team members and is practised with disctinction is a way in which knowledge sharing could be

enhanced in the virtual team. Similarly, Participant 5 suggested that motivating team members to participate in knowledge sharing would enhance knowledge sharing amongst team members, ‘especially with tacit knowledge, it has to come from within the person themselves’. The same Participant also indicated that in order for this to be achieved, ‘it’s just about promoting the culture’ of sharing knowledge. In support of this, Participant 9 indicated that the virtual team needs ‘to maintain a degree of enthusiasm’ in order to enhance knowledge sharing.

## 4.7 Summary of Chapter 4

This chapter presented and analysed the data obtained from interviews with members of the virtual team. Using interviews only, data were collected from four members of the Johannesburg team and ten of the London team. The main themes of the study were discussed in line with the research questions and subsequent research objectives. The actual words of the Participants were used to show their opinions. The next chapter contains a summary of the major findings, as well as conclusions, recommendations, suggestions for further research, and the final conclusions of the study.

# CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter provides a summary of the findings as well as conclusions and recommendations arising from the study. This study was conducted with the purpose of exploring the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals and establishing how these practices could be enhanced to provide a superior information service to Hogan Lovells' lawyers. To this end, close consideration was given to a range of factors that influence such practices, inluding technologies for, challenges to, and enhancers or enablers of, knowledge sharing. As already delineated, the objective of the study was to find answers to the following research questions:

1. What is the virtual team of legal information professional's understanding of knowledge-sharing practices?
2. Which knowledge-sharing practices are used by the virtual team of legal information professionals?
3. Which knowledge-sharing technologies are used by the virtual team of legal information professionals?
4. Which knowledge-sharing challenges are experienced by the virtual team of legal information professionals?
5. How can knowledge sharing amongst the virtual team of legal information professionals be enhanced?

## 5.2 Summary of major findings and conclusions

This section presents a summary of the research findings and conclusions that were reached in the course of pursuing the study's research questions. Subsections of this section have been arranged based on the research objectives.

### 5.2.1 Virtual team of legal information professional's understanding of knowledge-sharing practices

The first objective of this study was to establish the virtual team of legal information professional's understanding of knowledge-sharing practices. Participants had a good understanding of 'knowledge sharing' and not 'knowledge-sharing practices'. The Participants had different but similar understanding of the concept of knowledge-sharing practices and perceived it from different viewpoints.

### 5.2.2 Knowledge-sharing practices used by the virtual team of legal information professionals

The second objective was to explore the knowledge-sharing practices used by the virtual team of legal information professionals. The findings reveal that team members come together to share knowledge in team meetings, use mentoring to share their knowledge, and use storytelling in team meetings and in the practice of mentoring to share their knowledge. Although After-Action Reviews are not used as a current practice of sharing knowledge, it was mentioned that an After-Action Review was carried out on one occasion in the past.

### 5.2.3 Knowledge-sharing technologies used by the virtual team of legal information professionals

The third objective was to investigate which knowledge-sharing technologies are used by the virtual team of legal information professionals. The study findings reveal that the virtual team uses an intranet, e-mail, videoconferencing, instant messaging, Wikis, knowledge repositories/databases and the telephone.

### 5.2.4 Knowledge-sharing challenges experienced by the virtual team of legal information professionals

The fourth objective was to identify the knowledge-sharing challenges experienced by the virtual team of legal information professionals. The study findings reveal that they face individual, organisational and technological challenges to knowledge sharing. The individual factors concern a lack of communication skills; knowledge hoarding; motivation to share knowledge; time constraints; trust; culture; and a gap in awareness of knowledge. The organisational factors

that inhibit knowledge sharing relate to lack of investment or financial support; the team structure; communication; and culture. The technological factors that influence their knowledge sharing were related to deficiencies in how team members used their knowledge-sharing technologies and also in the inherent limitations in the technologies.

### 5.2.5 Enhancing knowledge-sharing amongst the virtual team of legal information professionals

The fifth objective was to establish how knowledge sharing amongst the virtual team of legal information professionals can be enhanced. The study findings revealed that the virtual team could enhance knowledge sharing through consideration of the following enablers of knowledge sharing: enhancing communication; technology; reward systems; management support; and culture. The recommendations in section 5.3 deal with the enhancement.

## 5.3 Recommendations

In this section the researcher makes recommendations on the basis of the study's conclusions. These recommendations present what the researcher considers to be necessary to enhance the knowledge-sharing practices in order to provide a superior information service to Hogan Lovells' lawyers.

### 5.3.1 Recommendations on the virtual team of legal information professional's understanding of knowledge-sharing practices

The findings of research question one revealed that Participants had different but similar understandings of the concept of knowledge-sharing practices and that they perceived it from different viewpoints. Based on the findings of this research question, it emerged that there is a need to clearly define knowledge-sharing practices and differentiate them from knowledge sharing. The researcher recommends that members of the virtual team should be given a clear definition of knowledge-sharing practices by a KM consultant or expert in knowledge sharing, and also a differentiation of these practices from knowledge sharing in general, in order for virtual team members to understand knowledge-sharing practices and purposefully participate in them.

### 5.3.2 Recommendations on knowledge sharing-practices used by the virtual team of legal information professionals

The findings of research question two revealed that the virtual team of legal information professionals currently use team meetings, mentoring and storytelling as knowledge-sharing practices and have previously used After-Action Reviews. Based on the findings of this research question, it emerged that there is a need for the virtual team to clearly recognise and formalise their team meetings as a virtual community of practice by researching what a virtual CoP is and purposefully applying it in practice. In addition to this, they should stimulate informal peer mentoring amongst members of the Johannesburg team by relying less on their dedicated mentors in London, evidence the value of storytelling by demonstrating its value as a knowledge sharing practice and to also carry out After-Action Reviews as an on-going knowledge sharing practice instead of carrying it out occasionally. The researcher recommends that the virtual team should use brainstorming, subject-matter experts, and face-to-face virtual meetings facilitated by technologies to enhance their knowledge sharing in a virtual setting.

### 5.3.3 Recommendations on knowledge-sharing technologies used by the virtual team of legal information professionals

The findings of research question three revealed that the virtual team use the following knowledge sharing technologies: intranet, e-mail, videoconference, instant messaging, Wikis, knowledge repositories and telephone. All of these technologies facilitate the virtual team's knowledge-sharing practices, except for the telephone. Although the telephone is still useful for communication, its value is diminished by the availability of modern knowledge-sharing technologies, such as instant messaging. Based on the findings of this research question, it emerged that there is a need to obtain insight into the challenges that cause deficiencies in how legal information professionals use their knowledge-sharing technologies and to come up with remedies for these challenges in order to promote the effective use of the technologies. In addition, there is a need to use modern knowledge-sharing technologies that facilitate a better and more effective knowledge-sharing experience. Therefore, the researcher recommends that the virtual team should use a best-practices database, lessons-learned systems, blogs, and an electronic document management system to enhance their knowledge sharing amongst members

of the virtual team.

### 5.3.4 Recommendations on knowledge-sharing challenges experienced by the virtual team of legal information professionals

The findings of research question four revealed that the virtual team experienced individual, organisational and technology-related knowledge sharing challenges. Based on these findings, it emerged that the challenges experienced by the virtual team were not being given much attention and there were no formal initiatives aimed at resolving them. The researcher recommends that the virtual team should appoint a KM consultant or expert in knowledge sharing to provide them with advice on how they should overcome these challenges. In addition, the researcher also recommends the adoption of the recommended knowledge-sharing practices – which are brainstorming, subject-matter experts, and face-to-face virtual meetings – as well as knowledge-sharing technologies, which are a best-practices database, lessons-learned systems, blogs and an electronic document management system, in order to overcome the knowledge sharing challenges experienced by the virtual team and as a result, enhance their knowledge sharing in a virtual setting.

### 5.3.5 Recommendations on enhancing knowledge sharing amongst the virtual team of legal information professionals

The findings of research question five revealed that the virtual team could enhance knowledge sharing using the following enablers or enhancers of knowledge sharing: enhancing communication; technology; reward systems; management support; and culture. From the findings of this research question, it emerged that the virtual team of legal information professionals had ideas on how their knowledge sharing could be enhanced. However, these enablers or enhancers were not being used or implemented by the virtual team to enhance knowledge sharing. The researcher recommends that the abovementioned enablers or enhancers of knowledge sharing should be adopted and applied. In addition, the researcher recommends that the virtual team should use trust and a conducive team structure to enhance the sharing of knowledge amongst team members.

## 5.4 Suggestion for further research

This study focused only on Hogan Lovells' virtual team of legal information professionals. It is suggested that additional studies, particularly surveys and quantitative studies, should be conducted on other virtual teams of legal information professionals in order to explore their knowledge-sharing practices. These studies should also establish factors that influence these teams' knowledge-sharing practices, namely, knowledge-sharing technologies, challenges, and enhancers or enablers. This will allow for the comparison of studies of virtual teams and also contribute to the body of knowledge in the field of information and knowledge management.

## 5.5 Final Conclusions

The aim of this study was to explore the knowledge-sharing practices of Hogan Lovells' virtual team of legal information professionals and establish how these practices could be enhanced in order to provide a superior information service to Hogan Lovells' lawyers. This study established the knowledge-sharing practices which were used by Hogan Lovells' virtual team, and also identified the challenges that hindered these practices. The virtual team faces individual, organisational and technological challenges that affected their current knowledge sharing practices in a way that results in the delivery of an insufficient supply of knowledge to less experienced or knowledgeable members of the Johannesburg-based team. Therefore, the virtual team's knowledge-sharing practices need to be enhanced in order to provide a superior information service to Hogan Lovells' lawyers. The researcher recommended that the virtual team should make various changes in how they conduct their knowledge-sharing practices and use additional practices in order to enhance their knowledge-sharing practices.

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# Appendix A: Interview guide

**INTERVIEW GUIDE – KNOWLEDGE-SHARING PRACTICES BY LEGAL INFORMATION PROFESSIONALS AT HOGAN LOVELLS: LAW FIRM IN SOUTH AFRICA AND ENGLAND.**

**Introduction**

My name is Boitumelo Eddy Manamela. I am conducting research for my Master's dissertation at the University of South Africa (UNISA) and my topic is **Knowledge Sharing Practices by Legal Information Professionals at Hogan Lovells: Law Firm in South Africa and England**. I therefore look forward to your support and cooperation in this noble cause.

The study has the following objectives:

- To establish the virtual team of legal information professional's understanding of knowledge-sharing practices.
- To explore the knowledge-sharing practices used by the virtual team of legal information professionals.
- To explore the knowledge-sharing technologies used by the virtual team of legal information professionals.
- To identify the knowledge-sharing challenges experienced by the virtual team of legal information professionals.
- To establish how knowledge sharing amongst the virtual team of legal information professionals can be enhanced.

Please be assured that your name and contact details will be kept anonymous and confidential, the information, views and answers you provide will remain confidential and will only be used for the purpose of the study and not for any purpose other than those stated above. You are also assured that your views or opinions shall not be used in a way that might cause damage to your reputation as an individual or otherwise, integrity, emotions, or indeed professional conduct as the information provided will be treated with a high level of confidentiality. Your participation is voluntary and you are free to withdraw from the process at any point during the interview

process.

I also wish to inform you that this interview session will be based on five sections:

- Section A has questions on background of Participants.
- Section B has questions on knowledge sharing practices.
- Section C has questions on knowledge sharing technologies.
- Section D has questions on knowledge sharing challenges/barriers.
- Section E has questions on knowledge sharing enablers/enhancers.

Please feel free to ask questions during the interview where it may not be clear.

Please be honest in your input. Thank you for your time and participation in this study.

Yours Sincerely

Boitumelo Eddy Manamela

Mobile: +27 71 089 7011

E-mail: boitumeloemanamela@gmail.com

**INTERVIEW QUESTIONS**

Date of interview:……

Place of interview:…….

Rank of interviewee:……..…

Gender of interviewee:……..

**AIM OF THE RESEARCH**

To investigate the knowledge sharing practices of Hogan Lovells' virtual team of legal information professionals and determine how their knowledge sharing practices may be enhanced in order to provide a superior information service to Hogan Lovells' lawyers.

**SECTION A -** background information

1. What is your title or position in the team?
2. Gender?
3. How long have you worked for the firm?
4. What is your highest education level?

**SECTION B -** which knowledge sharing practices are used by the virtual team of legal information professionals?

1. What do you understand by knowledge sharing practices?
2. What are the different ways by which knowledge is shared amongst virtual team members?
3. How do the different team members facilitate knowledge sharing in the virtual team?
4. Which are the best ways for sharing knowledge between team members located in the London and Johannesburg office?

**SECTION C -** which knowledge sharing technologies are used by virtual team of legal information professionals?

5. Which types of technologies do you use for sharing knowledge with team members located in the London and Johannesburg office?
6. How are the different technologies used for knowledge sharing?

7. Which are the most preferred technologies for sharing knowledge between team members located in the London and Johannesburg office?
8. What barriers or challenges have you encountered when using these technologies for knowledge sharing?
9. Which other knowledge sharing technologies do you suggest the firm to acquire?

**SECTION D** - what are the knowledge sharing challenges experienced by the virtual team of legal information professionals?

10. Why do you think it is important to share knowledge?
11. What kind of knowledge are you reluctant to share with your fellow team members?
12. Do you experience any problems with regard to sharing knowledge with other team members in the London and Johannesburg office? If yes, what are they?

**SECTION E** - how can knowledge sharing amongst the virtual team of legal information professionals be enhanced?

13. How is knowledge sharing amongst team members encouraged and promoted?
14. What motivates you to share knowledge with fellow team members?
15. What are your recommendations on how knowledge sharing amongst team members can be promoted or improved?

# Appendix B: Permission letter to collect data at Hogan Lovells

TO: The Head of Knowledge and Research

FROM: Boitumelo Eddy Manamela

DATE: 16 May 2017

SUBJECT: PERMISSION TO INTERVIEW MEMBERS OF STAFF

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The above subject refers.

I am currently studying for my Masters degree with the University of South Africa in the field of Information Science and my research specialisation being Knowledge Sharing. My research topic is **KNOWLEDGE-SHARING PRACTICES BY LEGAL INFORMATION PROFESSIONALS AT HOGAN LOVELLS: LAW FIRM IN SOUTH AFRICA AND ENGLAND**. I have made significant progress with my research and I am now at the stage of data collection. I wish to request permission to interview members of the Johannesburg and London team who constitute my sample population.

The study involves face-to-face semi-structured open-ended interviews. The interviews will be conducted with the selected few chosen by way of purposive sampling. Appointments will be scheduled on a date of the Participant's convenience and will be secured by the researcher before the interviews take place in order to enable Participants to prepare adequately for the interviews. There are currently no foreseeable negative consequences for participating in this study. This study has received approval from the Research Ethics Review Committee of the Department of Information Science, Unisa.

The researcher will make sure that Participants are duly protected in terms of confidentiality during the process of data collection, analysis and publishing of the dissertation or when disseminating the outcomes of the study. The names and contact details of the Participants will be anonymous and confidential. The researcher will ensure the protection and preservation of the members of the Johannesburg and London team and the organisation. Participation in this study will be voluntary and the Participants will be assured that the information they provide will

remain confidential and will only be used for the purpose of the study. Please note that apart from this dissertation, data will not be used for other purposes, such as a research reports or journal articles, without your consent. The researcher will show ethical practices by explaining to Participants what the research will be investigating, why it is being investigated, and their role in the research before they participate in the interviews. Upon completion of this study, all the Participants who played a role in this study will be informed of the outcome of the study.

Your consideration of this matter will be highly appreciated.

SIGNED
Boitumelo Eddy Manamela (Mr.)