University of the Witwatersrand

Masters Dissertation

Isolated Communities of Practice: Knowledge Transfer Among Social Impact Assessment Practitioners

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October 2018

Abstract

This research investigates the mechanisms for learning within a professional group of social scientists who are operating in the environmental consulting industry by showing that they function as isolated communities of practice.

Social practitioners find their place in the environmental industry by conducting social impact assessment studies as a requirement for development project's environmental permitting and authorisation. There is a need to build capacity and awareness about social impact assessment in the global sphere. In order to do this, we need to look at the capacity of the social practitioners or scientists responsible for conducting social impact assessment processes and investigate how knowledge is transferred among these specialists.

This research propagates that social impact assessment practitioners identify and operate as communities of practice based on their interactions and participatory learning with each other. Qualitative research was undertaken with a small group of social practitioners across Canada, South Africa, England and Australia. The research also looks at whether the community of practice theory can be applied to the environmental consulting industry as a whole, to preserve the transfer of knowledge and improve the technical growth of individual members, thereby increasing their technical capacity to produce quality social impact assessment reports.

There is an existing structure of learning in environmental consultancy companies which facilitates knowledge sharing in the technical discipline of social impact assessment. Methods such as the senior review process, brainstorming sessions and mentorship are the most practical as they can be accommodated within the organisational hierarchal structure. Other mechanisms such as technical forums, conferences and self-learning are available in consulting organisations if the situation in the organisation is favourable. This means that people have to be willing to drive these particular mechanisms in order for them to be successful forms of knowledge transfer.

This research found that one of the problems faced by the global environmental companies, is maintaining a connected social impact assessment community when individuals are located throughout the world. In the recent years whenever companies have been under pressure to meet revenue targets and the priority has been project work, it has it is difficult to implement any knowledge sharing mechanisms which may detract from business goals. At a global industry level, the biggest challenge is the competitive nature of environmental consulting companies to secure large projects.

By understanding and implementing the communities of practice theory to this industry, the process of knowledge transfer between social practitioners which currently occurs naturally, can be maintained and even improved. However, the application of the community of practice model within this organisational context may not be relevant, due to the additional resources and time required to implement such a model. Knowledge transfer is already occurring without the benefits of the community of practice model and the requirements to maintain this model in the workplace may outweigh the benefits at this time. In the future, when the environmental industry climate stabilises, a further look at implementing this model could be undertaken.

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1 Introduction

This research thesis discusses the mechanisms for learning within a professional group of social scientists operating in the global consulting industry. These social scientists' practice and interact with other social scientists within the discipline of social impact assessment. Social impact assessment is a very specific field of study which can be regarded as a branching off from the more established field of environmental impact assessment. As there are no specific academic qualifications to become a social impact assessment practitioner, knowledge of the discipline is gained through engagement on project work over time. As the author, I am also a social scientist who has practiced in the field of social impact assessment for ten years. In this research, I interviewed a group of these social scientist practitioners and through their perceptions and my own participatory observations of working within the industry, I investigated how they interacted amongst themselves, the existing forms of knowledge transfer mechanisms, as well as their form and dynamics within this discipline.

For the purpose of this thesis, I focussed on a small group of social impact assessment practitioners who I have worked with over my career. Some have assisted me in growing my own knowledge base and progress within the discipline. There is a larger body of social practitioners around the world employed within environmental consultancies, large financial institutions, branches of national governments, global development companies and those working as independent practitioners. The total number of practitioners globally is unknown as there are many individuals continually joining and leaving the discipline. My research focuses on the social impact assessment professionals who work within the environmental consultancy industry.

Environmental consultancies work together with technical knowledge and as such will require knowledge management structures to preserve the generation and sustainability of technical knowledge. Their core services are providing assessments of project impacts and recommendations for managing these impacts for development projects. They deal with the generation of knowledge through technical report deliverables and the transfer of this knowledge to their clients, government bodies and the project stakeholders. Social impact assessment is a technical discipline within the larger environmental assessment. In order to provide quality assessments to clients and stakeholders, companies rely on the expertise of their consultants. It is important for consultants to gain and continually grow their knowledge base for the progression of the discipline. This research investigates how knowledge transfer occurs with social impact assessment practitioners within the environmental consultancy industry.

1.1 Background to the Research Project

Becker and Vanclay (2003) define social impact assessment as the process of analysing, monitoring and managing the positive and negative social consequences resulting from development projects and any social change processes produced by these interventions. It focusses on social considerations of the affected populations surrounding a project rather than the biophysical or the environmental impacts (Becker & Vanclay, 2003). Social impact assessment is defined by Vanclay (2003) as the social sciences necessary in developing a knowledge base to provide an appraisal, prior to any impacts, on the daily quality of life of persons and communities whose environment is affected by a proposed project. Moon (2007) defines social impacts as changes to individuals and communities due to a proposed action which changes the way in which people live, communicate, interact with each other and generally cope as members of society (Moon, 2007).

A Social Impact Assessment (SIA) is a process of analysing what impact a potential project may have on the social aspects of the environment and devising appropriate measures to minimise the negative impacts and enhance the positive impacts

The typical types of development projects which would impact on “project affected communities” range from the oil and gas, mining, renewable energy and power generation sectors which have site footprints or linear infrastructure corridors and their activities will have environmental and social impacts. Development projects can have different contexts, either urban or rural areas in different countries around the world. They would create various impacts which differ based on these varying contexts. Assessing these impacts around development projects is where the environmental and social impact assessment discipline finds its niche.

Social scientists find their place in this industry by conducting social impact assessment studies as a requirement for development project’s environmental permitting and authorisation. Social scientists within the impact assessment discipline is also a broad term to group professionals who interact with project affected communities and individuals within these communities for the purpose of assessing, observing and documenting the people and their environments. By understanding these affected communities within their existing environments, social scientists can assess the potential impacts the proposed development project would have on them and provide mitigation measures to reduce or minimise these impacts.

Social impact assessment (SIA) originated as a branch from environmental impact assessment (EIA). The basis of SIA first began in 1970 when the US National Environment Policy Act (NEPA) introduced a requirement to ensure that major state or civic actions affecting the quality of the human environment were integrated into an objective and publicly available assessment of the potential impacts of those actions (Burdge and Vanclay 1995). The case study of the proposed Mackenzie Valley gas pipeline from Yukon Territory to Alberta (1974-1978) was the first major EIA case study. The project was denied due to the failure to consider the impacts on a local tribe. Since then, SIA was developed to respond to this need to address impacts on project affected populations and it has been gradually introduced to many countries around the world (Becker & Vanclay, 2003).

SIA is now widely practiced internationally as an analytical study that is part of the regulatory approval process for infrastructure and resource extraction projects. In this context, SIA is usually incorporated as a component of an EIA process. In most countries, the legislative context has historically favoured biophysical impacts even with the widespread and longstanding practice of SIA. (Esteves, Franks, & Vanclay, 2012). This could be because biophysical impacts are considered more tangible than social impacts although SIA has been getting more traction in the international sphere. Both are considered important when assessing project impacts.

The International Financial Corporation (IFC) and the World Bank are global financial institutions who have developed international social guidelines to ensure that the local project communities impacted by development operations are not adversely affected, and that their livelihoods and human rights are respected. The impacts which large and small-scale development brings to project settings are diverse and require comprehensive short-term and long-term mitigation strategies. Companies typically contract independent social consultants to undertake the social impact assessment and the development of social management strategies to mitigate the impacts of these development projects. It is widely recognised by the International Association of Impact Assessment (IAIA) that this select group of social scientists have developed the experience to undertake this specialised discipline of social impact assessment and management.

Global companies generally adhere to the best practice frameworks compiled by the International Finance Corporation (IFC) and the World Bank. These financial institutions fund various types of development projects around the world. If a company requires additional funding they would have to apply to institutions like these and in order to meet the requirements required by these institutions, the company has to produce environmental and social studies in accordance with the guidelines outlined by these institutions. For example, the IFC has a set of performance standard guidelines and the World Bank has operating procedures which regulate environmental and social impacts. Social impact assessment and management plans fall within this ambit of international requirements and SIA practitioners are contracted to develop these studies.

Social scientists undertake work on various developmental projects globally and through their experience and understanding of impacts from these projects on the livelihoods of affected communities, global companies can exercise more care and consideration to the neighbours of their operations. The management of these social impacts are designed through international best practice, Good Industry Practice (GIP) and the relevant national legislation for the project. SIA practitioners deal with core concepts such as culture, community, power, human rights, gender, justice, place, resilience and sustainable livelihoods and these concepts are described and assessed through the methodological approach or framework of an SIA report (Pope, Bond, Morrison-Saunders, & Retief, 2013). This framework is not the focus of this research but this is the knowledge base which practitioners share, being their experiences and understanding within the technical discipline. In this research we discuss knowledge transfer among SIA practitioners and the knowledge which is shared in the SIA framework and how to assess the core concepts around social impact assessments.

Esteves, Franks, & Vanclay (2012) state that there is an accepted understanding by experienced practitioners on what a 'good' SIA is. It supports affected peoples, proponents and regulatory entities. It increases understanding of social change and the capacities needed to respond to change. SIA seeks to avoid and reduce negative impacts and to maximise positive benefits across the life cycle of developments. It also draws attention to improving the lives of vulnerable and disadvantaged people (Esteves et al., 2012). Social practitioners have the responsibility to undertake an efficient SIA process for development projects. They need the relevant experience to collect and assess all the social impact aspects of a potential development project.

Unfortunately, many people within the industry still view SIA as unnecessary and easy enough for any other environmental specialist to do. This view has led to SIA processes being undertaken by inexperienced individuals without the correct guidance which sheds a bad image on the experienced social practitioners. Social practitioners do not have the capacity to enforce the barriers of entry into the SIA practice as there are no formal educational degrees or certifications to qualify a person as a SIA practitioner.

Even with the emergence and importance of the SIA discipline, paralleled to the extent of analysis and resources devoted to biophysical issues, SIA usually has a minor role. One of the limitations associated with SIA was stated in Esteves, Franks, & Vanclay (2012) where they say that social practitioners have inadequate influence in designing or changing project alternatives. Despite the increase in social scientist's influence within many organisations, the project managers who are responsible for undertaking impact assessment reports often have little experience understanding the social issues surrounding project impacts. This coupled with the limited capacity of regulators and the limited resources dedicated to quality control have a significant impact on the standard of SIAs. This inevitably leads to tendencies for proponents to produce assessments that only just pass the minimum requirements of regulators (Esteves et al., 2012). This means that project managers do

not place sufficient emphasis on the social impact that their proposed development project may have on the community which will be affected by the development. The lack of quality control in the industry has a negative influence on the transfer of correct knowledge and practice within the industry.

There is a need to build capacity and awareness about SIA in the global sphere. In order to do that, we need to look at the capacity of the social practitioners or scientists responsible for conducting social impact assessment processes. This professional group of social scientists have developed specialised skills within a niche market in the workplace. To grow this knowledge base within their community and to transfer this knowledge onto future generations of up and coming social scientists would require learning and knowledge transfer mechanisms.

This research investigates the current knowledge transfer mechanisms of social scientists in consulting companies by aligning this knowledge transfer process to a social learning theory which could strengthen the avenues to regenerate and pass their learned experience and knowledge down to the newer members. Through the sharing of experiences and challenges from longer standing members of the social scientist group, other newer social scientists within the discipline can grow their experience and knowledge. This type of learning is referred to as social learning and requires participation of individuals to share and gain knowledge in a group. Social practitioners learn their trade in a similar process and this type of learning through participation can be linked to the community of practice theory designed by Lave & Wenger (1991). This theory could form a framework for this professional group of social scientists to build their knowledge and capacity within the field of the social impact assessment discipline.

The establishment and growth of the SIA practice is illustrated through greater recognition of the importance of social issues as well as a consequent spread of social specialists in leading institutions, governments, project developers and engineering consultancies. The improved capacities of individuals and organisations, and the greater responsibilities placed on them, are due to the regulatory requirements of the IFC and the growing importance of social issues in national government requirements (Esteves et al., 2012).

The importance of this research is to add to the discussion of strengthening the SIA practice by assessing how social practitioners are currently building their capacity within the discipline. The use of the communities of practice theory could be one way to monitor the extent and level of learning and knowledge transfer being undertaken by consulting companies. Based on the interactions of social practitioners in global environmental companies, they meet the characteristics of a community of practice and operate informally as such. This research will discuss these interactions, the types of knowledge transfer mechanisms currently being used within the organisational setting of consultancy companies and the limitations of these mechanisms.

1.2 Communities of Practice

Lave and Wenger (1991) define a community of practice as a group of people who share a concern or a passion for something they do and through regular interaction, learn how to do it better. This notion emerged as a learning theory and was further established by Jean Lave and Etienne Wenger (1991). Communities of practice are formed by people who participate in a process of collective learning. The theory of community of practice has uncovered various practical applications in business, organisational design, government, education, professional associations, development projects and civic life (Wenger & Trayner-Wenger, 2015). The social scientists working in the impact assessment field operate as a professional community who share a common concern or activity which is their passion for working within project communities and maintaining or improving the

livelihoods of project affected people. Through interactions with other social scientists within the discipline of SIA, collective learning and improvement of the SIA practice occurs which makes this research group a naturally formed community of practice.

Jean Lave and Etienne Wenger (1991) initially studied the apprenticeship model of learning but upon further investigation, the idea grew into the premise that learning involves a deeper process of participation in a community of practice and this theory has gained significance recently. Communities of practice have also been emphasised and explored within organizational development and have substantial value when thinking about working with groups (Lave & Wenger, 1991). Knowledge is the technical skill of impact assessment and is produced, valued and advanced within this group of social specialists which aligns them as communities of practice.

As previously mentioned, the term community of practice originated as a concept in social learning theory by Jean Lave and Etienne Wenger. Lave and Wenger (1991) were studying apprenticeship as a model of learning and used the concept of community of practice to critique the traditional models of learning (Holmes & Meyerhoff, 1999). In the early 1990s, the components of a learning community formed the basis for the development of the community of practice theory. The theory aimed to provide a template for assessing the learning that occurs among practitioners in a social environment (Li et al., 2009).

The nature of knowledge transfer among social scientists within the impact assessment industry is defined by project-based learning and on the job training similar to an apprenticeship model of learning. In my experience, newcomers to the community start with limited experience regardless of their educational qualifications or their age. The progression of members from novice to master occurs through the types of projects one is exposed to within the community or organisation. Member interaction within the community is also limited to levels of experience. Newcomers with limited experience generally have little to add to technical discussions and project planning sessions especially when in the presence of more experienced scientists but they gain knowledge from listening. However, being afforded the opportunity to be part of these discussions is sometimes limited based on the organisational structure of consultancy companies.

Communities of practice are an essential part of life. Wenger (1998) proclaims that they are informal and universal in nature but for the same reasons are also quite familiar. Most communities of practices may not have a name or a formal membership card. In our daily lives, we may begin to form a fairly good understanding of the communities of practice we belong to now or those we have belonged to in the past. Even though membership is rarely formalised through a checklist of qualifying criteria, members also have a good idea of who belongs to their community of practice (Wenger, 1998b). Social impact assessment practitioners however form a technically specific group of professionals who are sometimes brought together to work in teams on projects or within consulting companies. They self-identify as a professional group and interact and learn from one another through their participation on development projects. These traits align with the community of practice theory.

The community of practice theory may not be new but the need for organisations to become more methodical and intentional of managing knowledge has led to the recent emergence of this theory in the workplace. Technical knowledge of impact assessment has become important to success in environmental consulting organisations. Companies need to understand what knowledge will place them at a competitive advantage in the industry. They need to keep advancing the knowledge and distribute it across the organisation. Cultivating communities of practice in strategic areas is a practical way to manage knowledge as a tangible asset (Wenger, McDermott, & Snyder, 2002). This

research will focus on communities of practice formed naturally from within the organisational structure of the environmental consulting company industry.

Within environmental consulting companies, the consolidation of knowledge and expert opinions into technical assessment reports provide clients with the required permitting to commence with their development project. This is the core business service where social scientists utilise their specialisation. It is thus important to retain knowledge and ensure progression of this acquired knowledge within the community of social specialists. This research focuses on the social impact assessment community using the Community of Practice theory to legitimise the learning and knowledge sharing mechanisms amongst this group of professionals.

There are a number of social scientists who practice social impact assessment throughout the world and this group is continually changing. Social scientists from any of the social academic disciplines can work within the impact assessment field as most of the learning and growth occur on the job through project experience. Guidance from more experienced practitioners helps to grow a junior's or newcomer's skill in the field. This form of learning is participatory and further aligns with Lave and Wenger's theory of group learning.

This research will explore the dynamics within the community of social scientists engaged with impact assessments, the current mechanisms for knowledge sharing and the challenges experienced with these mechanisms. Further chapters will investigate what insights the members of the community have with regards to enhancing learning through experience and mentoring. The research identifies this group and describes how learning takes place within the organisational context of consulting where the bottom line outweighs personal growth. The learning mechanisms used within this professional group will be described and their effectiveness discussed.

1.3 Research Problem

The aim of this research is to investigate how knowledge is produced, shared and developed within the social impact assessment community within the global environmental consulting industry. It is also concerned with how practise is normalised to conform to the knowledge base of social impact assessment. Even though there is no formal membership, this research group identifies themselves as a professional technical community where not only technical knowledge or skills associated with social impact and management are shared but also the networking of individuals within this community which has developed and continues to develop with time.

Smith (2003) Mentions that community of practices need to generate and adopt a shared repertoire of ideas, commitments and memories through their project experience in order to operate. They also need to develop various tools, documents, routines and vocabulary that somehow carry the accrued knowledge of the community. They encompass practice, ways of approaching things that are shared among members (Smith, 2003).

Based on the definition and characteristics of community of practice, social impact assessment practitioners at consultancy firms function as a community of practice through their shared knowledge and interactions. Our community is predominantly characterised by individual practitioners interacting with each other at consultancy firms predominantly up and down the hierarchal chain between practitioners and their superiors. Due to the organisational structure of these firms, interactions laterally between practitioners outside of the company rarely occurs. While this is not necessarily intentional, lateral sharing of knowledge that does occur outside of the company is normally the result of personal networks.

This research will discuss that social impact assessment practitioners identify and interact as a community of practice. In so doing, the discussion will also look at whether the community of practice theory can be applied to the environmental consulting industry to preserve the transfer of knowledge and improve the technical growth of individual members, thereby increasing their technical capacity in producing quality SIA reports.

The research will investigate the following areas:

1. How the social impact assessment community is formed and the nature of interactions within this community.
2. What types of learning mechanisms already exist within the workplace for social scientists working within impact assessment.
3. What the current limitations and challenges are to the existing knowledge sharing mechanisms and how these can be resolved.

1.4 Structure of the Thesis

This thesis consists of six chapters which set out a discussion to resolve the research problem areas indicated above. The breakdown of each chapter is summarised as follows.

Chapter One: Introduction

The introduction gives a brief overview of the research conducted in this thesis and the context where the research group is introduced within their working world. The chapter also introduces the Community of Practice Theory and how it aligns with the research. The research problem is presented in the form of three questions which will inform the discussion of the results. The structure of the remaining document is highlighted to give the reader an overall understanding of what the discussion themes will be.

Chapter Two: Literature Review

This chapter provides more in-depth explanation on the social impact assessment field. The discussion lays out a basic understanding of communities of practice and how this literature might be useful for understanding and analysing the forms and constraints to knowledge transfer among this specific scientific community. The origins of the the community of practice literature are discussed and how it evolved to suit workplace scenarios. The dimensions and characteristics are also explained in this chapter, introducing the domain, community and practice and how they relate to each other.

The literature goes on to describe how communities are cultivated and developed in the world and how they can be sustained for future learning. Literature of how the theory of communities of practice is implemented in working organisations and what benefits this theory of learning can contribute to organisational growth.

Chapter Three: Methodology

The methodology of this research is described in chapter three. The community of practice theory is discussed in relation to how domain, community and practice fits within the research group. The chapter sets out the approach to the research, how the data was collected and analysed using existing iterative induction analytical techniques.

The methodology describes the research group of participants and a further breakdown of these participants into three smaller groups. This distinction made it easier to analyse the results of the research and are described in Table 1 below:

Table 1: Research group designation

Group A	Social scientists who work within the same global consulting firm but geographically distributed in different areas of the world.
Group B	Social scientists who work at other global consulting firms. Participants interviewed were located in South Africa.
Group C	Social scientists who operate as independent consultants and work on international projects.

Chapter Four: Existing Structure of Learning within the Social Science Community

This chapter discusses the research findings which are discussed in thematic sections that can be linked to the theory of community of practice. The results of this research are presented as an analysis of the three groups of participants based on their varying perspectives within the industry of social impact assessment.

The chapter gives a detailed description of the research group and how each operated within the social impact assessment field and working context. This chapter describes the interaction within the research groups and how they form relationships and grow in their learning experience. The existing types of mechanisms for learning are also described in this chapter and how the participants perceive the effectiveness of these mechanisms. This chapter poses a discussion to answer points one and two of the research questions.

Chapter Five: Learning and Growth Challenges within the Social Scientist Community

This chapter sets out to answer question three of the research problem by discussing the limitation of the aforementioned learning mechanisms. The main mechanisms discussed in the previous chapter will be reviewed with more critique in their application to knowledge transfer in the workplace scenario. The chapter also discusses challenges which the participants feel they face both at a company level and within the industry of environmental consulting.

Chapter Six: Conclusion

In this chapter, the community of practice theory is related to the research group. Aspects which are beneficial to learning within the research group will be discussed and the aspects of the theory which do not work will be critiqued. The research problem will be discussed based on all the findings and presented as the three questions posed in the research problem, namely, the formation and interaction pathways of the social impact assessment community, the existing types of knowledge sharing mechanisms being used in the consulting organisational setting and the limitations to these mechanisms. The issue of utilising the community of practice learning theory to improve the knowledge transfer system will also be discussed and whether the theory supports this research group in their practice will be resolved.

2 Literature Review

This research investigates the mechanisms for learning within a professional group of social scientists who are operating within the social impact assessment (SIA) field in the environmental consulting industry. These professional individuals work as a group, within the same discipline of social impact assessment in global consulting companies. Their ability to share knowledge within their group or to teach new members the skills required to operate as a practitioner in the profession can be linked to group learning or learning through work experience. Based on their interactions and the mechanisms for knowledge transfer that currently exist in this group, this research assesses if the social impact practitioner group can be defined as a community of practice. However, these groups of professionals follow an organisational structure in the workplace, so the community of practice theory will also be discussed in the context of working within organisations.

It is important to note that this thesis is based on the applied research topic of social impact assessment and I have utilised references from websites and practitioner-based discourses to inform this topic. However, I have also incorporated publications on social impact assessment as well as books and papers published in recognised journals for reference to social impact assessment, where applicable and the community of practice discussions in this chapter.

The community of practice theory is based on a participatory approach to learning or learning within a group. The learning and growth within the social scientists involved with SIA predicates the development of the field of study. As mentioned before, by transferring knowledge from more experienced practitioners to the junior newcomers in the field, the practice continues to grow and thrive. This model of learning and knowledge transfer is described in the community of practice theory which makes it relevant for this research. By exploring knowledge transfer and learning within the research group of social scientists, we would be able to determine if adequate knowledge sharing occurs in the consulting environment.

This chapter discusses the existing literature on social impact assessment and the community of practice theory in relation to this research. This chapter will also discuss social impact assessment as a practiced study field, the community of practice theory in relation to its application within the practice of social impact assessment and the value of implementing the community of practice theory in global consulting organisations. In order to understand this relationship, the context of knowledge transfer in social impact assessment and the principles of community of practice has to be understood.

Wenger, McDermott and Snyder (2002) describe knowledge as dynamic because it continuously changes and evolves. It must be constantly updated by people who understand the issues and want to see progression within their field. Wenger et al (2002) also states that knowledge resides in the skills, understanding and relationships of its members as well as in the tools, documents and methodologies which encompass this knowledge (Wenger et al., 2002).

The social impact assessment practice evolved from a relatively small niche branch of environmental impact assessments. It has grown to focus on how development projects affect or influence the nearby and surrounding communities. The ability to identify, describe and assess these impacts has been developed into a specialist field, similar to the other specialist components of an environmental assessment process such as hydrology, ecology and geotechnology.

Thus, knowledge sharing within the social impact assessment field has evolved from its inception to the current understanding and project driven discipline it is today. Practitioners were instrumental in

developing this knowledge of the SIA process and providing guidelines and frameworks within this discipline. Some of these practitioners are seniors within the field today and are still contributing to further developing other practitioners understanding and practice of these principles. However, in today's industry, there is a largely global distributed group of social practitioners working within social impact assessment and they are mainly operational on development projects within the field. This research looks at these practitioners who implement the social impact assessment process at a project level.

2.1 Social Impact Assessment as a Practice

According to Frank Vanclay (2003), social impact assessment (SIA) is the processes of analysing, monitoring and managing the social consequences, both positive and negative, of planned development and interventions (policies, programs, plans, projects). SIA is a field of research and practice which consists of a body of knowledge, techniques, and values. It was developed to respond to the mitigation of impacts from development projects on the social environment. There is a community of individuals who identify themselves as SIA practitioners because they practice the methodology of SIA and undertake associated social and environmental research to inform the practice of SIA (Vanclay, 2003). The primary purpose of social impact assessment is to bring about a more sustainable and equitable biophysical and human environment (Dendena & Corsi, 2015).

Dendena and Corsi (2015) stated that SIAs originated in the 1970's and were originally used in the United States, Canada and Australia where there were environments with indigenous people. As stated before, the case study of the proposed Mackenzie Valley gas pipeline from Yukon Territory to Alberta, Canada (1974-1978) was the first major EIA case study. The project was denied due to the failure to consider the impacts on a local tribe. Since then, SIA was developed to respond to this need to address impacts on project affected populations and it has been gradually introduced to many countries around the world (Becker & Vanclay, 2003). Stand-alone SIAs and SIAs in amalgamation with Environmental Impact Assessments (EIA) have been further developed and are now a legal requirement in many other countries. The domain of SIAs span from developing countries like Sierra Leone and Chad, emerging markets like Chili and Philippines to other OECD countries like Greenland and South Africa (Dendena & Corsi, 2015).

Initially SIAs were designed as a branch of EIAs so they utilised the standard methodology for impact assessment formulated by the IFC. This became a point of contention amongst practitioners and was considered a limitation to the practice as I found out through conversations with other practitioners. The argument being that you cannot assess biophysical impacts with the same impact assessment methodology as social impacts because people perceive and experience project impacts in complex and diverse ways. The methodology for social impact assessment has since been redesigned and discussed in detail by Frank Vanclay (2003) in his book *International Principles for Social Impact Assessment*. In more recent years, Vanclay's (2003) work has been criticised to be more theoretical and not an adaptable framework for the evolving dynamic of a social environment. The IFC are consistently reviewing and updating their policies and procedures which included those guidelines associated to social impact assessment.

SIA has been included in the formal planning and approval processes within several countries in order to categorise and assess how major developments may affect populations, groups, and settlements. The social impact assessment has long been considered minor to the environmental impact assessment. However, Dendena and Corsi (2015) note that new models from the IFC such as the Environmental and Social Impact Assessment (ESIA), take a more cohesive approach which views both the social and environmental impact assessments equally (Dendena & Corsi, 2015). With more

international development companies adhering to the IFC performance standards as international best practice, it indicates an equal priority placed on both the environmental and social variables of the project context.

Graham Moon (2007) wrote an article for the website journal *Enviropaedia: Rethinking Reality* which also describes a Social Impact Assessment (SIA) as a method of analysing what impact a proposed development project may have on the social variables of the environment. He eloquently describes some of I have included these aspects as it relates to the relationship between communities and their land which is paramount when assessing potential impacts. These include:

- Economy, social networks, and cultural values;
- Utilisation of the surrounding natural environment, for subsistence, recreation, spiritual activities, cultural activities, etc.;
- Utilisation of the built environment for shelter, livelihoods, industry, worship, recreation, gathering together, etc.;
- Community networks including their social and cultural institutions and beliefs;
- Communities' expressions of their identity through art, music, dance, language arts, crafts, and other expressive aspects of culture;
- A group's values and beliefs about life, family relationships, status relationships, and other expressions of community;
- The sense of belonging and cultural character of a community or neighbourhood (Moon, 2007).

Some examples of the types of developmental projects which have significant social impacts associated with them are presented in the Table 2 below.

Table 2: Examples of types of projects which have significant social impacts

Examples of Types of Projects	**Potential Social Impacts**
Waste disposal sites	Perceived health risks, Loss of amenities
Power (solar, wind and hydro-electrical) and industrial plants	Disruption of community networks and culture from influx of a work force, Pressure on existing infrastructure.
Dams and reservoirs	Lifestyle disruption resulting from relocation, Loss of land use due to flooding of the proposed dam area.
Roads and linear developments (railways, pipelines and powerlines)	Dislocation of people, disruption to community networks and relationships. Influx of people to areas where roads and railways create an easier access.

Source: *Rietbergen-McCracken, J. and Narayan, D. (1998): Participation and Social Assessment: Tools and Techniques, The World Bank, Washington DC.*

SIA entails assessing the existing state of the social environment, predicting and categorising potential impacts to the social variables and developing any measures mitigating potential changes that have negative effects from the perspective of an affected population. Moon (2007) indicates that the purpose of SIAs are to assist individuals, communities, national governments and private-sector organisations like NGO's understand and anticipate the possible social consequences of a proposed project development (Moon, 2007).

Normally, SIAs are done as part of the initial planning process at the commencement stages of a proposed project where the proponent is seeking project authorisation in accordance with the required regulations. Social impacts have to be identified and measured along with biological, physical, or economic impacts in order to be understood and communicated to the impacted population and decision-makers. SIAs should provide a realistic and objective assessment of possible social consequences and suggest recommendations for project alternatives as well as possible mitigation measures to reduce the negative impacts (Moon, 2007).

Becker and Vanclay (2003) also state that the purpose of a SIA is to ensure that any development increases its benefits and decreases its costs, especially those costs sustained by people (including those in other places and in the future). Social costs and benefits are difficult to measure or quantify and are often not sufficiently considered by decision-makers, regulatory authorities and developers due to their intangible nature. Predicting potential impacts allows for improved decision making about which interventions should proceed and how they should proceed. Mitigation measures can then be implemented to decrease or reduce the harm and increase the benefits from a planned intervention or related activity (Becker & Vanclay, 2003).

An important feature of a SIA is the professionalism and values held by its social practitioners (social scientists). Vanclay (2003) describes social practitioners as individuals who should have a commitment to sustainability, to scientific integrity and an ethic that promotes openness and accountability, fairness and equality, and defends human rights. Here Vanclay (2003) alludes to the self-identifiable characteristics of SIA practitioners within a community of practice. The role of SIA can go beyond the prediction of impacts and the determination of who benefits and who loses. An SIA, if done appropriately, has the ability to also incorporate the empowerment of local people, enhancement of the position of women, minority groups and other disadvantaged members of society, development of capacity building, alleviation of all forms of dependency, increase in equality and a focus on poverty reduction (Vanclay, 2003). Vanclay (2003) makes this claim but in reality SIAs rarely go beyond the minimum requirements of the regulations. There are few SIAs or management plans which when implemented over the lifetime of a project have the ability to achieve what Vanclay (2003) claims. Inevitably, SIAs within the broader context of ESIA become a check box requirement to gain permitting approval for a project.

Vanclay (2003) further states that SIAs are dynamic and can be undertaken in different contexts and for different purposes. This creates difficulties in defining or evaluating them. This is true for determining a standard methodology and framework for conducting an SIA. The various applications of SIA are valuable but none are the conclusive statement of what is a SIA. Evaluation of a SIA needs to consider its intended objective (Vanclay, 2003). Since SIA is so dynamic, SIA Practitioners grow their knowledge base by working on a variety of different projects and contexts and by working with different SIA practitioners throughout their careers.

Vanclay (2003) explains his understandings of SIA, which he states are related to clear statements of adverse impacts required to ensure that individual rights are maintained. SIA could add to mitigation and compensation mechanisms where these rights are violated. In projects where, individual rights are adversely impacted, SIA tends to concentrate on the negative impacts. However, in the context of developing countries, there should be more emphasis on maximising social utilities and development potential, while ensuring that these social developments are acceptable to the community, equitable and sustainable (Vanclay, 2003). SIA commitments have to also consider the fine line between maximising social benefits and taking over government functions. This over commitment by companies makes them a surrogate government for communities during the

project's lifecycle. This creates a dependency on the proponent which in not sustainable and in essence should be filled by government.

Some project contexts have such significant impacts which completely disrupts a community's way of life. Becker and Vanclay (2003) state that SIA should focus on reconstruction of livelihoods and the improvement of social wellbeing of the wider community. These should be acknowledged as an objective for planned interventions and as such is included in the IFC performance standards when considering any form of assessment. It is important to have awareness of the existing vulnerable groups in the community and the implication of the various distribution of impacts experienced by these groups in the society (Becker & Vanclay, 2003). Vulnerable groups such as women and child headed households, orphans, people with disabilities and marginalised minorities are considered more susceptible to project impacts with less to lose than other groups. The IFC has guidelines in place to make sure SIAs consider these vulnerable groups separately when assessing impacts and proposing mitigation measures.

The SIA process forms the knowledge basis for social practitioners. Knowledge of how to undertake a SIA and produce a quality technical report is learnt by newer practitioners. Social practitioners gain experience through the application of this SIA process on various projects. As mentioned before, SIA is dynamic so the simplified description based on my knowledge and experience implementing the IFC guidelines presented in Figure 1 are for the purposes of this research. This process would also align with the ESIA process. There are more detailed guidelines on how to undertake these steps in accordance with international best practice on the IFC website (http://www.ifc.org) and in Frank Vanclay's (2003) book.

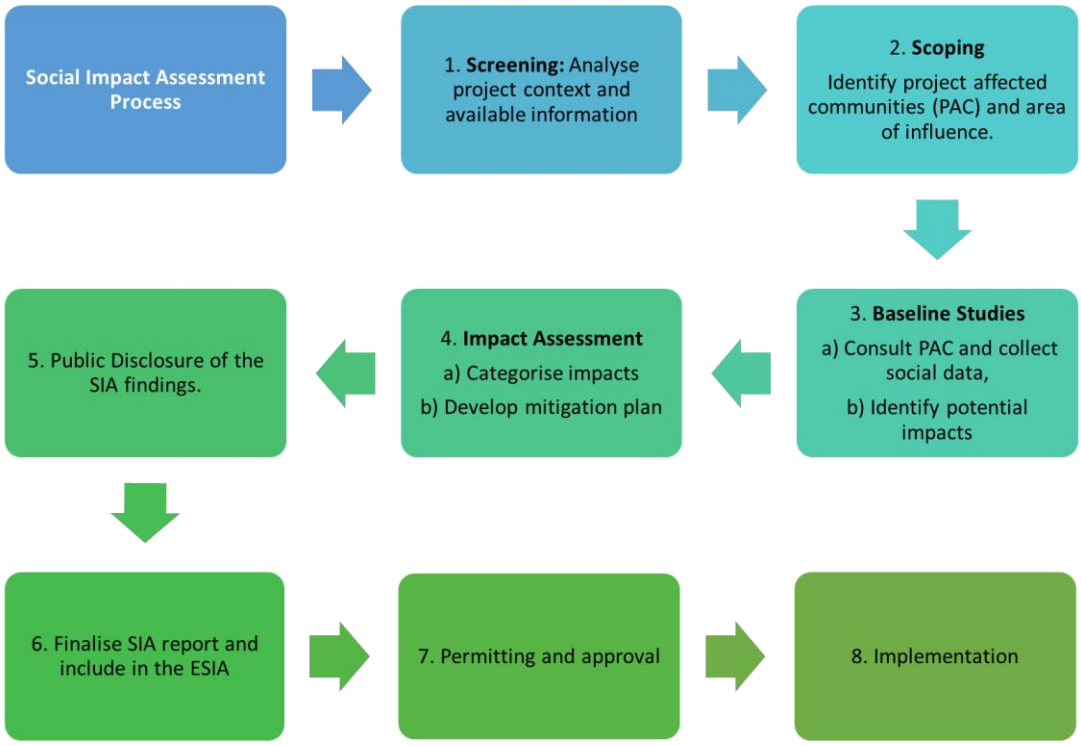

Figure 1: High-level description of a social impact assessment process

Social scientists operate in the social impact assessment field as a professional community. They identify themselves as social impact assessment specialists and provide their professional opinions

on multi-disciplinary project teams which work on the permitting requirements for development projects. They self-identify as a community practicing SIA. According to Wenger, McDermott and Snyder's (2002) characterisation, they share a concern, a set of problems or a passion about SIA and strengthen their knowledge and expertise in this discipline by interacting on a continuous basis which defines this group as a community of practice (Wenger et al., 2002). Social impact assessment is a well-established and growing practice required by leading institutions like the World Bank and the IFC and is being implemented throughout the world through international environmental consulting organisations.

In this research, social scientists operating as practitioners within social impact assessment have discussed their experiences transferring knowledge within global consulting organisations. Their ability to learn and grow within the field will be aligned to the community of practice learning theory. Can the theory improve knowledge transfer in these organisations? Companies operate separately from academic institutions hence priority areas are different. Yet, there is a significant amount of knowledge generation and transfer within the organisations. Specialised technical groups thus form their own communities of practice within global companies as they interact and work together within a common technical field. One global company could have multiple communities of practice but for this research, we will focus on the social impact assessment field at different consulting companies in the impact assessment industry.

2.2 Defining Community of Practice

As mentioned before, Wenger McDermott and Snyder (2002) define community of practice as groups of people who share a concern or a passion about a topic and reinforce their knowledge and expertise in this topic through regular interaction. These people have substantial and constructive dialogue even if they don't meet every day. As they interact, they share information, insight and advice about their common situations and help to resolve problems and challenges. They may create materials, guidelines, theoretical frameworks and other documents. Over time they develop a distinct perspective on their field of study as well as a framework of common knowledge, practices and approaches (Wenger et al., 2002).

As stated before, community of practice originally came about through social learning theory by Etienne Wenger and Jean Lave (1991). The components of an apprenticeship model formed the basis for the development of the community of practice theory. Initially the concept intended to provide a template for assessing the learning that occurs among practitioners in a social environment (Li et al., 2009). The concept of community of practice is dynamic which is essential to its growth and evolution. This essence of community of practice gives the theory a flexibility that can be adaptive to this research group and within the consulting industry.

Lave and Wenger (1991) suggested that most of the learning for practitioners occurs through interactions at the workplace rather than in a lecture or classroom setting. This initial concept become known as 'situated learning' (Lave & Wenger, 1991). Situated learning concentrated on the interactions between newcomers and experts and the cognitive process by which newcomers created a professional identity. This is similar to how SIA practitioners form their technical groups in organisations which essentially group them as professionals in their field. As such practitioners' experience situated learning in their groups within the workplace. However, Brown and Duguid (1991), in contrast, viewed learning as improvising new knowledge in a group that forms in opposition to management (Cox, 2009).

In Wenger (1998), the focus had shifted to personal growth and the progression of individuals' participation from a peripheral member to a core member within a group. This is also the focus

within corporate technical communities, the need for personal growth. Many specialists leave companies and teams if they do not feel as if they are growing their knowledge base. Wenger (1998) treated communities of practice as the informal relationships and understandings that arise through mutual engagement on a shared venture with emphasis on the impact on individual's identity. However, when applying communities of practice to organisations, the initial concept of communities of practice had to shift towards a managerialist stance (Cox, 2009). This would mean that the priority was on business targets rather than on personal growth (Li et al., 2009).

Communities of practice can be seen as self-arranging systems. Smith (2003) states that they form through the process of joining together in companionship or when undertaking some task and they give an individual the power of playing one's part in a group or association. Lesser and Storck (2001) state that communities also seem to be an effective way for organisations to share knowledge outside of the traditional organisation structural boundaries. This would add to the value that individual members of a community obtain through learning and they have a higher motivation to apply what they have learnt (Lesser & Storck, 2001) cited in (Smith, 2003). However, in business, communities of practice are formed through the structure of the organisation and technical groups are brought together to work in similar disciplines. This research looks at how communities in companies are limited by the organisational structure and interactions outside the organisation rarely happen because of confidentiality to client's projects.

Lave and Wenger (1991) further states that a community of practice involves more than the technical knowledge or skill related with beginning a task. Members are involved in relationships over time and communities develop around things that matter to people (Wenger 1998). When organising around some particular area of knowledge and activity, members get a sense of joint enterprise and identity. The interactions involved, especially when working on larger or more complex projects though cooperation with other practitioners, creates a bond between people and helps to facilitate relationships and trust (Smith, 2003). This is true from the SIA practitioner's perspective as many ex-colleagues maintain their relationships even after they have moved to different companies. The years spent working together on projects and as part of the same company community forms a bond between practitioners.

Cox (2009) views the utilisation of the term community of practice as very diverse and sometimes it is a conceptual view to assess the situated social learning process. Sometimes it is used to refer to a virtual community supported by an organisation to facilitate knowledge sharing or learning (Cox, 2009). Through this research, the use of the term community of practice will become synonymous with an informal like-minded technical group within organisations used to facilitate knowledge sharing within their specialist field.

2.3 Dimensions of a Community of Practice

Lave and Wenger (1991) viewed learning as a situated activity and as its core characteristic a process that they termed legitimate peripheral participation. This means that focus is drawn to the opinion that learners in all likelihood participate in communities of practitioners and that the command over knowledge and skill entails newcomers to move toward full participation in the socio-cultural practices of the community. Lave and Wenger's (1991) term, legitimate peripheral participation provides a way to discuss the relations between newcomers and experienced members and about activities, identities and communities of knowledge. It involves the process where newcomers become part of a community of practice and progress through the process of becoming a full participant in the practice. This includes the learning of knowledgeable skills through the interaction with more experienced members (Lave & Wenger, 1991).

Lave and Wenger's (1991) intention was to look at the notion that learning through apprenticeship was a matter of legitimate peripheral participation. This led them to re-examine the relationship between the current forms of apprenticeship and historical forms of apprenticeship which meant they needed to study learning as 'situated learning'. This idea of situated learning was incorporating an intention to learn rather than conventional notions of 'learning by doing' but it has been used as a rough equivalent. Lave and Wenger (1991) found that particular cases of apprenticeship were vital in developing and demonstrating a theory of situated learning. Learning is not merely situated in practice but it is a vital part of general social practice in the world. Lave and Wenger (1991) proposed their term 'legitimate peripheral participation' as a concept to illustrate the learning of newcomers through participating in a community (Lave & Wenger, 1991).

Lave and Wenger (1991) further state that by viewing learning as legitimate peripheral participation, it means that learning is not just a stipulation for membership but it is a developing form of membership. We perceive identities as long term, active relations between persons and their participation in communities of practice. Therefore social membership, identity and knowing, require each other (Lave & Wenger, 1991). Social scientists come from various backgrounds but when they join the community of practice in their organisation, they start to identify themselves as a member of that profession working within the social impact assessment discipline. They begin as a junior and through on the job learning and guidance from a mentor, they gain knowledgeable skills within the practice. They learn through legitimate peripheral participation at first but as they grow their experience, they become more active members in the community.

Lave and Wenger's (1991) basis of legitimate peripheral participation is access by newcomers (juniors) to the community of practice and everything that membership entails. In order to become a full member of a community of practice, it requires access to a wide range of continuing activities, senior members and other members of the community. This includes access to information, resources and opportunities for participation (Lave & Wenger, 1991). Joining a consulting organisation as a newcomer, grants you access to other members of the community of practice specific to your profession as well as available technological resources. Ideally, juniors or newcomers would also gain access to senior practitioners who would include them on projects which will provide opportunities to learn through participation.

Lave and Wenger's (1991) main concept of understanding learning which takes place in the workplace is promulgated on the basis of knowledge sharing through the apprenticeship model of learning. This approach focuses on informal and positional interactions rather than the mechanisms of cognitive transmission. Lave and Wenger's (1991) theory proposes that learning is more than simply gaining knowledge but it is about identity change from newcomer to senior member. Peripheral participation and active involvement in the practice are identified as significant learnings (Cox, 2009). If newcomers do not interact or engage in participatory learning, there is no growth in their knowledge base. Many practitioners hit a plateau in their learning because they keep working on similar projects which offer no avenue for growth or they lack access to appropriate senior community member who they can learn from. Normally in the industry, when a practitioner reaches this plateau, they seek employment at other company which can offer them the necessary learning avenues for personal growth.

The differences of Lave and Wenger's (1991) new theory compared to the old cognitive model of learning is presented in Table 3 below.

Table 3: Explaining the differences between the old cognitive model and Lave and Wenger's (1991) new model (Cox, 2009)

Old Model (cognitive)	New Model
Teaching	Learning
Classroom situation	In situ
Through a teacher	Through observation (social)
Student learns from teacher (individualistic)	Student learns from others (social)
Learning through a planned curriculum	Informal learning, driven by the task (though elements of the apprenticeship are formal)
Learning is an automatic, cerebral process of alteration and incorporation of ideas	Learning is about understanding how to behave, what to do and it changes your identity

Lave and Wenger's (1991) model is essentially a picture of how newcomers are socialized through an active and engaged process into a practice community through legitimate peripheral participation. Understanding change and conflict in such communities focusses on the legitimation of the participation which is the key to learning. However, this is not sufficient to explain all the power dynamics within a community especially those which are formed from the outside (Cox, 2009). SIA practitioners in organisations are formed from the company requirements or business model and the power dynamic is dictated by the organisational structure.

The social scientist community in this research are structured by their defining professional specialisation of social impact assessment and are grouped as a technical discipline within the organisational structure. Through my observations, these groups within organisations change as more people are employed, essentially becoming newcomers to that organisation's community of practice. Based on the work environment, social scientists leave and enter different organisations based on their employment preferences and as they change companies, they essentially leave and enter different communities of practice.

2.3.1 The Fundamental Elements of a Community of Practice

Wenger, McDermott, & Snyder (2002) indicated that despite the variety of types of communities of practice, they all share a basic structure which is a combination of three fundamental elements. These are a domain of knowledge which defines a set of issues, a community of people who are concerned about the domain and the shared practice that they are developing to be effective within their domain. The community of practice becomes an ideal knowledge structure for developing and sharing knowledge when these elements function well together.

Domain

The domain is the shared interests which bring a community together. In this research the domain is the consultancy work environment and the knowledge of social impact assessment. Wenger, McDermott, & Snyder (2002) state that the domain creates mutual ground and a sense of mutual identity. A well-defined domain verifies the community by confirming its purpose and value to members like the social impact assessment group at a consultancy company would have defined objectives for members. The domain inspires members to contribute and participate within the community. It guides members learning and gives meaning to their actions. The knowledge that is created within a domain has more meaning to the members of the community than to another outside the boundaries of the community. Knowing the limits and the context of the domain enables members to decide what knowledge is worth sharing, how to present their ideas and which actions to pursue. (Wenger et al., 2002).

A shared domain encourages a sense of responsibility to a specific body of knowledge like social impact assessment and therefore to the development of the practice. A community is just a group of

friends unless there is commitment to a specific domain like the technical field of social impact assessment. The domain is what brings people together and guides their learning. It defines the identity of a community, its place in the world and validates its achievements to members and others. This research looks at social impact assessment practitioners as an identified community with set targets and objectives, working within the environmental consulting industry. A domain is also a set of key issues or problems which members commonly experience and advances along with the world and the community (Wenger et al., 2002).

The most successful communities of practice succeed where the goals and objectives of an organisation overlap with the passion and ambitions of the participants. If the domain of a community fails to inspire its members, then the community will struggle. This is the area where companies can improve in order to sustain their communities of practice. The overlap of personal meaning and deliberate significance is an effective source of energy and value. Domains within companies that provide such a bridge are likely to inspire the kind of thought leadership and spirit of inquiry that are symbols of vibrant communities of practice (Wenger et al., 2002).

Community

Wenger, McDermott and Snyder (2002) describe the community as the body that creates the social fabric of learning. A strong community finds ways to create interactions and relationships based on mutual respect and trust. It encourages an inclination to share ideas, uncover one's limited knowledge areas, ask difficult questions and listen carefully. Community is an important element because learning in itself is a sense of belonging as well as an intellectual process. The community element is vital to an effective knowledge structure (Wenger et al., 2002). In this research, the community are the individual members of the SIA technical groups at different companies. Through their interactions, knowledge is generated and transferred.

A community of practice is not just an online forum, web site, database or a collection of best practices. Wenger, McDermott and Snyder (2002) define it as a group of people who interact, learn together, build relationships and concurrently develop a sense of belonging and mutual commitment much like SIA practitioners. Having peers who share your understanding of the domain and also bring their own individual insights and experience on any problem creates a social learning system that is greater that any one member. When working on projects, practitioners use each other to brainstorm and build on each other's ideas to generate new knowledge (Wenger et al., 2002).

To build and sustain a community of practice, members must interact frequently on issues important to their domain, however, this may not occur as often as needed in the consultancy industry. Having the same title or position in an organisation or being of the same profession is not enough unless you interact with each other which is why organisations have to support their technical communities in order for them to become effective communities of practice. Through frequent interaction, members develop a shared understanding of their domain and an approach to the practice. In this process they build valued relationships based on respect and trust (Wenger et al., 2002).

Continued interaction over a long-term does create a common history and communal identity but it also encourages diversity amongst its members. Members have the freedom to take on various roles, create their own styles and specialities. They achieve a status, gain a reputation and generate their own areas of expertise (Wenger et al., 2002). This is beneficial for consultancy firms as it creates potential for diverse business avenues which could bring in more interesting projects and provoke further knowledge generation and growth within the technical community.

Wenger, McDermott and Snyder (2002) also add that leadership is important in communities of practice but healthy communities have a shared leadership. External leadership roles are also important especially as communities mature. Communities depend on external supporters for access to additional resources and for building reliability with project teams and company business units (Wenger et al., 2002). It is important to note that for healthy communities of practice to succeed, there needs to be shared leadership. This is not normally the case in the consulting industry. The appointment of a group manager who is usually tasked with coordinating and facilitating frequent interactions of the technical community within the company so there is no shared leadership.

Practice

Wenger, McDermott and Snyder (2002) describe the practice as a set of frameworks, methodologies, tools, information and documents that community members focus on and utilise. Where the domain signifies the topic the community focusses on like social impact assessment, the practice represents specific knowledge the community develops, shares and maintains such as SIA frameworks and methodologies applied to different types of projects. In long-term communities, members expect each other to have acquired the basic knowledge of the community. This body of shared knowledge and resources enables the community to advance proficiently in dealing with its domain (Wenger et al., 2002). The collective base for shared knowledge in terms of SIA is through the IFC guidelines and the work published through IAIA. However, the practitioners who regulate this knowledge or have the expertise to design SIA frameworks and methodologies have not developed mechanisms to make this knowledge easily accessible to the broader members of the community.

A practice investigates both the existing body of knowledge and the latest developments in the field. It encompasses the history of the community and the knowledge it has developed over time. It offers resources that allow members to handle new situations and generate new knowledge. A shared practice encourages innovation because it offers a language for communicating new ideas quickly and for focussing conversations (Wenger et al., 2002). With a relatively new field of social impact assessment, knowledge is derived largely from environmental impact assessment methodologies and has been adapted to relate to the social context of developmental projects.

A real practice evolves with the community as a collective product. It is assimilated into people's work. It represents knowledge in a way that reflects practitioners' perspectives. Each community should have a particular way of making its practice noticeable through the ways it develops and shares knowledge. This is a critique about the SIA practice as it is difficult to share knowledge with the entire global community of SIA practitioners. This is why I have chosen to focus my research on the smaller groups of specialists operating at consultancy companies because they present more as a community of practice than the global community.

Wenger, McDermott and Snyder (2002) go on to say that successful practice growth depends on a balance between joint activities in which members explore ideas together and the establishment of things like documents or tools. Successful practice development goes closely with community development. This process should give practitioners a chance to gain a reputation as contributors to the community's practice or body of knowledge (Wenger et al., 2002). The practice of SIA is largely done through various project work and very little work has been published or shared in the global sphere. There is a select group of practitioners who are actively publishing and generating knowledge which in the global domain of social impact assessment. These consultants have contributed their expertise and knowledge to the development of international best practice guidelines and regulations incorporated by the IFC and World Bank.

2.3.2 Associating Practice and Community

Wenger (1998) claims that associating practice and community yields a more manageable characterisation of the concept of practice and it defines a special type of community, a community of practice. There are three important dimensions which associate practice and community to form a community of practice. These are:

1. Mutual engagement:

This is the basis for the relationships that make the community of practice possible. It involves the interaction of the community, how they become members, an identity defined by a shared domain of interest.

"Mutual engagement involves not only our competence but also the competence of others. It draws on what we do and what we know as well as our ability to connect meaningfully to what we don't do and don't know – that is to the contributions and knowledge of others." (Wenger, 1998a, p76) cited in (Holly, 2016, p13-14).

Being a member of the community suggests a commitment to the mutual engagement or interactions between the community members. This also entails the creation of a shared competence that distinguishes members from other people. Members join together to share knowledge and experiences as they mutually engage in the practice (Wenger & Trayner-Wenger, 2015). Membership is therefore developed through interactions, shared meetings or conversations. This creates relationships among people but assistance and loyalty between members cannot always be assumed. Disagreements on topics and challenges can also be typical forms of engagement within a community (Mills, 2011).

Mutual engagement is what defines a community. Wenger (1998) views community of practice as not just a term defined by a group, team or network. Membership is not a matter of being in a social classification, employed in an organisation, having a title or having personal relations with some people. It is also not based on geographical location being sufficient to develop a practice. Mutual engagement requires interactions and the same geographical location does help but members from other offices can also be part of a community. They can do this because they maintain relations of mutual engagement organised around what they are there to do (Wenger, 1998a). This is evident in the daily practices of SIA practitioners. Their interactions determine their community but even in a global organisation with the communication technology of this time, geographic location does limit interactions. This coupled with the organisational structure of global companies which do not encourage communication across offices, specialists then work within their office-based community groups.

Senior members of the SIA discipline have the capacity to have more mutual engagement opportunities as they have been practicing in the community for a longer time and have developed networks and connections with other members across the globe. Wenger (1998) states that continued engagement in a community of practice requires effort from members. The work of 'community maintenance' is an essential part of any practice. It can, however, be overlooked and as a result is easily undervalued and even unrecognised (Wenger, 1998a). In this research, mutual engagement can be measured by the frequency of interactions between members of the community of social impact assessment practitioners.

Through mutual engagement, members can learn more about the community, the lack of knowledge in the practice and the contributions of other to bridge that knowledge gap. When mutual engagement is maintained, it connects members in ways that can become deeper than just

belonging to an organisation. Members form a bond which lends to sustained trust and understanding and inevitably builds a long-working relationship. A community of practice can become a very tight group of interpersonal relationships. The resulting relationships reveal the full complexity of doing things together. They cannot be condensed to a single principle such as power, pleasure, competition, collaboration or economic relations (Wenger, 1998a).

2. Joint enterprise:

Wenger (1998) defines joint enterprise as a source of community unity. It is the sense of belongingness as a result of co-operation that reveals the full complexity of mutual engagement. It is members discussed response to their situation and thus belongs to them in spite of all the circumstances and influences that are beyond their control. It is not just a specified goal but creates among members a sense of mutual accountability that becomes a vital part of the practice (Wenger, 1998a).

Members of a community of practice can build relationships by sharing knowledge through mutual engagement and discussion. If people have the same job or title it does not mean they are a community of practice unless they interact and learn from each other. These interactions do not necessarily have to be on a daily basis (Wenger & Trayner-Wenger, 2015). The social practitioners in this research all have the same job title but they are members of smaller pockets of communities of practice founded within the different organisations where they are employed. Through on-going interactions, practitioners build relationships and enterprises.

The joint enterprises replicated in our practice include the instrumental, the personal and the interpersonal aspects of our lives. A joint enterprise doesn't require agreement from all the members. In fact, some communities disagree and this can be viewed as a productive part of the enterprise. The enterprise is joint not in that everyone believes the same thing or agrees with everything but in that it is communally discussed (Wenger, 1998a). Holmes and Meyerhoff (1999) also concurred with Wenger that joint enterprise involves the complex relationships of equal accountability that becomes part of the community of practice. These discussions enabled members to understand their personal roles within the community which defines their identity and on the whole establishes them as a community of practice (Holmes & Meyerhoff, 1999).

Wenger (1998) further states that some aspects of accountability maybe formalised by rules, policies, standards and goals and those that are not are still significant. Becoming experienced at something involves developing specialised sensitivities and refined perceptions that are utilised to make judgements about qualities of a product or an action. That these become shared in a community of practice is what allows members to discuss the appropriateness of what they do (Wenger, 1998a). This is precisely apt to describe the SIA community where practitioners are accountable to a set of performance standards promulgated through the IFC. They become experienced in developing their SIA skills and learning through projects. Practitioners also share their project learnings on a broader platform like conferences.

Wenger (1998) reiterates that communities of practice are not self-contained units but rather they develop within larger contexts. Some of these situations and requirements can be clearly articulated and some are implied but still binding. When the practice of a community is shaped by the circumstances outside the control of its members, its daily reality is produced by members within the resources and constraints of their situation (Wenger, 1998a). This is evident in the research as senior social impact assessment practitioners working at a specific organisation operate within the

broader context of the organisation as well as the larger context of the social impact assessment field of study.

3. Shared repertoire

Wenger and Trayner-Wenger (2015) name the third characteristic of practice as the development of a shared repertoire. This means that through frequent interaction and over time, the members of a community of practice become practitioners with their own language, tools and ways of resolving problems. According to Wenger and Trayner-Wenger (2015), these shared resources over time and sustained engagement becomes shared practice (Wenger & Trayner-Wenger, 2015). The elements of the repertoire gain their consistency as specific activities, symbols or artefacts through the belonging to the practice of a community following an enterprise (Wenger, 1998a). This is also true for the SIA practitioners. As a social scientist becomes knowledgeable about the SIA discipline, they develop the same technical jargon and shared understanding of the field. They utilise the same methodology and frameworks to undertake SIAs and this is gained through frequent interaction with other SIA practitioners.

Shared repertoire combines the history of mutual engagement and what Wenger (1998) termed inherent ambiguity which allows repertoire to become a resource for the discussion of meaning. This inherent ambiguity makes processes like coordination, communication or design both difficult and requiring repair. It also makes the same process dynamic, always open-ended and generative of new meanings (Wenger, 1998a).

The evolving nature of a community of practice means that individual membership will differ. Some people will be core members and some peripheral members. This disparity amongst members depends on how effectively an individual has shared repertoire or integrated the objectives of negotiated enterprise or established patterns of engagement with other members of the community (Holmes & Meyerhoff, 1999).

2.3.3 Characteristics of Community of Practice

The three dimensions of mutual engagement, joint enterprise and shared repertoire attempt to outline the process of individual's interaction within community of practice groups but it is not clear what distinguishes them from other group structures. Wenger (1998) focusses on individual's identity and he emphasises the importance of paths through different levels of participation in a community and the tensions of multi-membership of different communities as a significant dilemma for the individual (Cox, 2009).

Wenger (1998) proposes that the critical characteristics of community of practice are reinforced through a number of specific features. I have taken the features listed below and used them to discuss how a group of social impact assessment practitioners' function as a community of practice. The following features are characteristics of communities of practice as perceived by Wenger:

- "Sustained mutual relationships, harmonious or conflicting.
- Shared ways of engaging in doing things together.
- The rapid flow of information and propagation of innovation.
- Absence of introductory preambles as if conversations and interactions were merely the continuation of an on-going process.
- Very quick set up of a problem to be discussed.
- Substantial overlap in participants' descriptions of who belongs.

- Knowing what others know, what they can do, and how they can contribute to an enterprise.
- Mutually defining identities.
- The ability to assess the appropriateness of actions and products.
- Specific tools, representations and other artefacts.
- Local lore, shared stories, inside jokes, knowing together.
- Jargon and shortcuts to communication as well as the ease of producing new ones.
- Certain styles recognised as displaying membership.
- A shared discourse reflecting a certain perspective on the world" (Wenger, 1998b, pg 125, 126).

Holmes and Meyerhoff (1999) state that the above features present a guide of the distinctiveness of different communities of practice and can be used to explore the functionality of the community of practice model when applied to particular communities as I will discuss later. It is important to think about the dimensions of community of practice (mutual engagement, joint enterprise and shared repertoire) separate from Wenger's characteristics of communities of practice mentioned above (Holmes & Meyerhoff, 1999).

The above characteristics can be applied to the social impact assessment community within an organisation as they are recognised as a technical group and they share research tools, methodology and technical jargon to communicate. This community continually grows as new ideas and approaches are being developed both at an organisational and institutional level. Working within an organisation or company, the community of social scientists interact interchangeably with each other as the knowledge and experience of seniors, mid-level and junior scientists is known and doesn't require interpretation.

2.4 Cultivating Communities of Practice

Wenger, McDermott and Snyder (2002) proposed that many natural communities never progress further than a group of friends because they fail to interest and inspire enough members. Also, many intentional communities dissolve because they don't have enough energy to sustain themselves. Communities, unlike work teams and other group structures need to request the interaction amongst members which makes them alive (Wenger et al., 2002). However, communities of SIA practitioners at consulting companies are formed intentionally to provide a business service in that discipline and they stay together to further the revenue targets of the company.

Wenger, McDermott and Snyder (2002) formulated their thinking around cultivating communities of practice within the organisational context of business. Their theories discussed principles for designing communities and stages on how to maintain these communities. This is useful when considering the research participants who function as a community but may not be able to sustain the knowledge transfer within the community due to reduced opportunities to interact with a broader community of SIA practitioners. The limitations of this is discussed later in the results section but it has implications to the maintenance of the community.

Designing a community so that it can grow in energy is different from most organisational design. Wenger, McDermott and Snyder (2002) discuss traditional organisations which focus on creating systems and roles that achieve organisational objectives and assimilate with the other elements of an organisation. Even when organisations are designed to be adaptable and receptive to their environment, organic growth and energy are generally not primary design goals (Wenger et al., 2002).

Wenger, McDermott and Snyder (2002) also discuss that communities of practice develop naturally but having a planned design can initiate their progression and sustainability. A successful community of practice has the ability to generate enough excitement, relevance and value to involve members. Participating in group discussions, having one-on-one conversations, reading about new ideas or observing experts' debate current issues creates motivation within the community and promotes involvement (Wenger et al., 2002). In the case of SIA practitioners, they do not form naturally but they are already formed in the organisational structure. The ability to maintain these communities would also require inspiration, excitement and value to the members.

2.4.1 Seven Principles for Cultivating Communities of Practice

Wenger, McDermott and Snyder (2002) lay out their proposed design goals when cultivating communities of practice. They outline seven principles when designing a community and their precis is that if communities of practice are designed effectively, they would be more successful when functioning in an organisational setting. By bringing out the community's internal direction, character and energy, companies can implement the community of practice theory to promote knowledge development and transfer in the workplace. The seven principles were developed by Wenger, McDermott and Snyder (2002) to focus on designing communities of practice (Wenger et al., 2002).Wenger, McDermott and Snyder's (2002) seven principles of community design are:

1. Design for evolution
2. Open a dialogue between the inside and outside perspectives
3. Invite different levels of participation
4. Develop both public and private community spaces
5. Focus on value
6. Combine familiarity and excitement
7. Create a rhythm for the community.

Although these principles speak to the moulding of a community of practice and its objectives, I find it difficult to envisage the implementation of these principles within the environmental consulting industry. These seven design principles represent the understanding of how elements of design work together. They are the basis behind the design. Wenger, McDermott and Snyder (2002) designed these principles to be flexible and allow for creativeness. The nature of communities of practice challenges people to design these seven elements with a manageable outlook, with an appreciation that the idea is to create liveliness and not to manufacture a predetermined outcome (Wenger et al., 2002). Based on the current state of the environmental consulting industry within the global sphere, there is more emphasis on winning projects and completing deliverables within budget than progression within specific technical knowledge fields.

2.4.2 Stages of Community Development

Wenger, McDermott and Snyder (2002) state that communities are not naturally found in their end state but they go through a natural cycle of formation, growth and end. A community's development like an individual's is seldom without challenges. Many communities go through essential transformations and sometimes the reason they stay together has little to do with the reasons that they started. Although communities of practice continually change, Wenger, McDermott and Snyder (2002) observed that there are five stages of community development. Understanding these stages assists in perceiving the potential implementation of the community of practice theory in the organisational context (Wenger et al., 2002).

The stages discussed in Figure 2 below are potential, coalescing, maturing, stewardship and transformation. Wenger, McDermott and Snyder (2002) propose these stages as a cycle of evolution

or emergence which describes the community's growth over time and interactions. However, SIA practitioners already have emerged as a community of practice within consultancy companies. They are formed through the organisational structure as technical groups therefore moving straight into the maturation stage. Due to the nature of the consulting business model, SIA practitioners move through the maturing, stewardship and transformation stages even if they lack the innovation and generation of new knowledge.

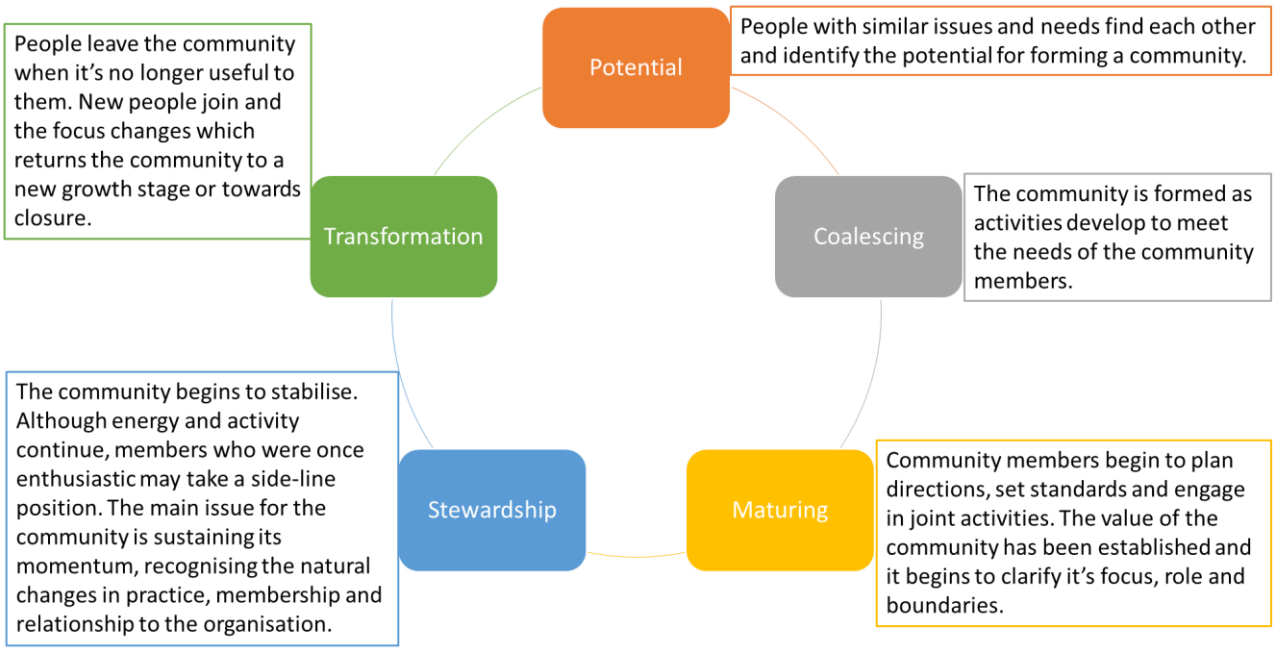

Figure 2: Stages of Community of Practice

Wenger, McDermott and Snyder (2002) note that these stages are a collective representation of the communities that they have studied. This may be different for individual communities but generally they observed the cycle. I have described these stages through the process that Saint-Onge and Wallace applied to their Clarica case study *(Saint-Onge & Wallace, 2003)*. This is useful to indicate how they can be applied in understanding how the group of social impact assessment practitioners in this research also experience these changes as our community develops.

Wenger, McDermott and Snyder (2002) indicate that communities typically start as informal networks which have the potential of becoming more connected and a more important part of an organisation. Communities form as members establish connections. After initial formation, the community often matures in both membership and the depth of knowledge members share. Mature communities go through cycles of fluctuating activity. During this stage, communities take active stewardship of the knowledge and the practices they share and intentionally develop them. Communities evolve through these stages and the activities required to sustain them also change (Wenger et al., 2002).

In the social consultancy organisational setting, technical groups have already been formed based on the organisational structure so technical professionals are grouped together according to the field of expertise. Social impact assessment practitioners similarly already find themselves in an organisational unit within a geographical location. Thus, they would enter Wenger's cycle at the maturing stage. The value of the community is also predetermined by the organisation through its values and employee conduct policies. The community then engage in different projects and further

clarify their role in the organisation. A group which has worked together for some time naturally move into the stewardship stage where discussions and interactions on projects actively engage all members. The junior and mid-level scientists become more empowered and lead discussions and the seniors take more side-line positions. Naturally in organisations, if employees are not fulfilled by their work or feel they are no longer growing within the technical group at the company, they leave the company. The resignation and hiring of new employees are part of the ebb and flow of organisational growth, thus moving a community of practice into the transformation stage.

Communities typically undergo several changes while progressing through these stages. Changes can occur in their focus, relationships and practice. Wenger, McDermott and Snyder (2002) also state that communities commonly shift from sharing ideas to stewarding their practice by building, refining, and expanding the domain and its relationships to other domains or in the case of social impact assessment, to other technical disciplines. Their focus shifts from solving common problems within their practice to investigating its subtleties. Communities also go through fluctuations of initial discovery and energy to stagnation and disinterest. Sometimes these transitions are exciting but just as often they feel like things are falling apart. If the trust, respect and the sense of direction among members are strong, these struggles can become temporary expressions of the community's aliveness (Wenger et al., 2002).

In the social impact assessment community within organisations, the community's growth into more complex knowledge development and sharing is dependent on the drive and acumen of the individual members. The nature of available project work also has the ability to influence the growth of these organisation-based communities. If the project work being undertaken by the community does not require innovative ideas or challenging adaptations of the SIA methodologies, then the community would stagnate.

2.5 Sustaining Communities of Practice

The hardest part in the stages of community of practice is the ability to sustain communities beyond their commencement. As part of an organisation, a community of practice is limited by company structure and protocols which makes it hard for communities to keep their aliveness. Wenger, McDermott and Snyder (2002) have also observed ways to sustain communities to assist in potential methods organisations could implement to sustain their existing communities.

Wenger and Snyder (2000) allow that communities of practice are fundamentally informal and self-organising but they flourish with cultivation. The strength of communities is self-generating and as they produce knowledge, they reinforce and replenish themselves. They stipulate that in order to sustain communities over time, managers should identify potential communities, provide the infrastructure that will support these communities (Wenger & Snyder, 2000). This would be practical in companies that have available resources and time to dedicate to developing communities of practice. In order to sustain existing communities of practice in the consulting industry, managers or directors have to support the process of sustaining these communities.

When communities have been developed, they often experience tension between the introduction of new members and focussing on their ability to generate knowledge in new areas through expert interactions. This also depends on the nature of the individuals in the technical community within the consulting environment. New members are welcomed and expected to have a base of knowledge to contribute to the community unless they are very a junior practitioner with no prior work experience. Communities in the consulting context function as maturing communities and get to know each other's style and approach to technical problems. In conversations and joint projects,

they discover their strengths and weaknesses and come to appreciate others' contributions, passions, interest, perspectives and individual styles (Wenger et al., 2002).

Wenger, McDermott and Snyder (2002) state that growth through alternative means of knowledge generation can multiply relationships and make the community more exciting but success in numbers of members can be a mixed blessing. This means that when a community grows too quickly, it becomes difficult to maintain the bonds of trust and accountability amongst members. New members disturb the pattern of interaction the core community has already developed. They ask different questions, have different needs and have not established the relationships and trust that the core community enjoy. This can be viewed as a benefit in the SIA field because new members come with different perspectives and experiences which add value to the group dynamic. Growth often seems to occur once the community's core members have developed relationships strong enough to discuss really important topics (Wenger et al., 2002).

Sustaining a community requires preserving relationships and trust with members as the community expands membership and when it can maintain helpful interactions while documenting its practices. Wenger, McDermott and Snyder (2002) also state that resolving the tension between focus and growth typically drives the community to a deeper sense of identity and greater confidence in the value of its domain. During this growth stage, communities continue to enhance their domain however their emphasis changes from defining to developing. The domain requirements rather than individual needs, become the primary motivation of activities (Wenger et al., 2002).

In the social impact assessment community, practitioners often find areas where more knowledge needs to be developed. If the current members of an organisation's community of practice lack the knowledge and experience needed for a specific project, they would research that area and together develop a process to use for that project. Wenger, McDermott and Snyder (2002) qualify this by saying that identifying knowledge gaps can be a very healthy process. This can encourage a more candid discussion of a community's needs and builds members identity's as new areas are developed. In this way, the community's learning continually evolves (Wenger et al., 2002). Some SIA communities will share these ideas through technical forums or on websites so that other practitioners can utilise this new knowledge or add to it.

Wenger, McDermott and Snyder (2002) suggest that when communities mature, the focus shifts from just sharing tips and advice toward the broader goal of stewarding knowledge. This seems to be where growth stagnates in the consultancy industry, between the maturing and stewarding stages. The consultancy business model focuses on the bottom line and priority is given to wining more projects of the same nature than spending additional time and resources establishing a diverse project base. This is not to say that consultancy companies do not pursue this path as well but it depends on the current economic trends which controls financial pressure on companies. Wenger, McDermott and Snyder (2002) suggest that one of the ways companies can pursue an new learning areas is to assign project teams to explore a new topic area, create guidelines or identify different approaches to a practice. These teams would usually report the results of their work to the community as a whole (Wenger et al., 2002).

The social science community focusing on social impact assessments and impact management have various communities of practice around the globe. There are teams who operate at the core knowledge centre of the practice and are generally associated with the World Bank or International Finance Corporation (IFC) who standardise the requirements for impact assessment. These core teams formulate guidelines and approaches to the various aspects of social impacts based on their knowledge and experience in the field. They also include a process where they circulate the draft

guidelines within the broader community for additional inputs and comments before finalising the guidelines. However, the broader community of social practitioners operate within consulting companies and have formed smaller communities of practice defined by employment in these companies. These smaller communities are generally focussed on project work and developing mechanisms to assist in improving their general daily practice.

2.6 Community of Practice as Applied to Organisations

When applying the community of practice theory to the SIA discipline within the consulting organisations, we have to consider the practicality and cost effectiveness of implementing a learning and knowledge management strategy within a business model that equates revenue with time. There are benefits of the community of practice model to enhance the generation of knowledge and the depth of knowledge transfer. There are also limitations to implementing this model within organisations.

2.6.1 Benefits of Communities of Practice in Organisations

It is claimed by Wenger and Snyder (2000) communities of practice add value to companies because they can facilitate strategy, generate new paths of business, solve problems, promote the spread of best practices, develop people's professional skills and help companies recruit and retain talent. Communities of practice are arising in companies that thrive on knowledge (Wenger & Snyder, 2000). These are all aspects which would benefit the environmental consulting industry especially since knowledge and expertise is their product. However, if there are so many benefits to use the community of practice theory, why is this concept not widely utilised? Wenger and Snyder propose the following reasons why communities of practice are not widely used in business.

- The concept has only recently entered into the business vernacular even though it has been around for a long time.
- Only several dozen companies have taken steps to implement, nurture and grow communities of practice. The progress and challenges of the implementation process at organisations have not been widely documented.
- It is not easy to form and maintain communities of practice or to integrate them with the rest of an organisation (Wenger & Snyder, 2000).

Wenger and Snyder's (2002) approach states that the dynamic and fluid nature of communities of practice makes them impervious to supervision and formal management structures. Management cannot mandate communities, they cannot be forced interact and maintain energy and innovation to generate new knowledge. So how then can communities of practice thrive within a business model? Teams or work groups exist in an organisation but they may not necessarily be communities of practice. Managers aware of the community of practice theory can bring the right people together and provide a structure in which communities can thrive (Wenger & Snyder, 2000).

Wenger, McDermott and Snyder (2002) further suggest that managers can seek to structure flexibility by encouraging alignment of changing practices between the different communities which assists the transfer of knowledge across the organisation. (Wenger et al., 2002). Roberts (2006) considers the growing number of consultancy firms which are offering their clients' services to manage knowledge creation and dissemination by establishing communities of practice (Roberts, 2006).

Companies have taken more interest in developing and supporting communities of practice as part of their knowledge sharing management strategies. Wenger, McDermott and Snyder (2002) even suggest that communities of practice are being viewed as a supplementary organisational form

(Wenger et al., 2002). Roberts (2006) reiterates that the communities of practice theory can be used as a tool to facilitate the control of professional groups. There is an increasing amount of research considering the transfer of knowledge and information in organisations influenced by the communities of practice literature (Roberts, 2006). My research adds to the existing body of literature by considering the application of community of practice with social impact assessment practitioners within the consulting industry.

Roberts (2006) also addresses the geographical barriers within organisations which expand across different global offices and this aligns with my research. Roberts (2006) suggests that a community can be a large group of people across many offices but typically it has a core of participants whose passion and enthusiasm for the discipline energises the community and they provide intellectual and social leadership (Roberts, 2006).

In their book, Leveraging Communities of Practice for Strategic Advantage, Hubert Saint-Onge and Debra Wallace (2003) link theory and practice by discussing their case study of creating a community of practice within an organisational setting. The book provides a platform for community building that can lead in many different directions and could establish a whole network of internal and external communities that are joined in a common purpose (Saint-Onge & Wallace, 2003). However, applying the community of practice theory to the consulting organisation when dealing with impact assessment and the demands of clients can be more challenging.

Saint-Onge and Wallace (2003) implemented the communities of practice theory at a Canadian life insurance company called Clarica Investments. Their study was undertaken in 2003 and was based on the premise that most strategies used in organisations came from the industrial era. Their premise was that the key to an organisation's strategic development was to allocate financial capital to the business activities with the highest revenue. After the industrial era, the globalisation of financial capital and its wider availability meant that there is no longer a bottleneck to business growth. The new bottleneck now is providing the capabilities (elements like attributes, skills and knowledge) which generates the effective action required to create opportunities where financial capital can be applied with an appropriate revenue. They state that capabilities are the link between strategy and performance (Saint-Onge & Wallace, 2003).

Considering the environmental consultancy industry, the decline in commodity prices in the past four years has created a financial bottleneck in the industry. The decrease in available projects meant that the competing consultancy companies had to become more competitive to win tenders on projects. There were many smaller consultancy firms who closed and the larger global firms had to downsize and restructure their organisations to align with the reduced industry demand. These changes could be felt in most of the leading environmental consultancies and priority was on business profit and effectively managing projects to produce a higher yield. Most international companies underwent retrenchment of staff and diverting resources to more successful global offices.

Essentially, the deliverable and intangible asset consultancy companies are selling, is knowledge and expertise of specialised disciplines like ecology, hydrology and social disciplines. The environmental impact assessment process takes all these disciplines and consolidates their findings for a project into an impact assessment report which is part of the technical deliverables to clients. How fast and at what price this expert technical knowledge is packaged makes the company more competitive in the market place.

Saint-Onge and Wallace (2012) stated that the practice of communities is based on knowledge access and knowledge exchange where productive inquiry acts as a catalyst. Finding an answer to a productive inquiry or question results in the creation of new knowledge. The community's practice is then based on three components:

1. Access to existing knowledge through databases which in the consulting industry is involved in; data can be provided by the client on a specific project. The company who has tendered for the project will gain access to confidential information from the client in order to conduct an impact assessment.
2. Knowledge exchange gained through sharing experience that is useful in completing a project. Social components on projects are not always the same as the nature of the project as communities differ per project. Senior practitioners share their experience with the team in order to accomplish an effective project process.
3. Creation of new knowledge through collaboration and innovation. There may be projects which elicit a change in methodology or approach to complete the social impact assessment process and thus requiring an innovative technique to complete the project. Working with project affected communities also has unexpected consequences so problem solving exercises and collaboration with others aid in resolving issues and completing a project (Saint-Onge & Wallace, 2003).

Saint-Onge and Wallace also indicated the benefits of using communities of practice in an organisational setting but there have been many critiques published indicating the limitations to communities of practice in the workplace. By exploring some of the challenges with communities of practice, we can ascertain if the situation, circumstances and settings in the environmental consulting industry may be appropriate for implementing communities of practice. The consulting industry deals in knowledge management and even though it may align with principles from Saint-Onge and Wallace's research, it may not be an appropriate place for implementing communities of practice.

If the community of practice theory is implemented in consulting companies, I believe it could help newcomers to the team get assimilated into the community and quickly become more efficient and contributing members. Ardichvili, Page and Wentling (2003) reiterates that the organisational structure of a company should be supportive of the sharing and transfer of knowledge within all their communities (Ardichvili, Page, & Wentling, 2003).

2.6.2 Challenges of Communities of Practice in Organisations

Steven J. Kerno from St. Ambrose University in Iowa, USA published a paper critiquing the communities of practice in organisations. He indicated that, "the first challenge confronting communities of practice is the availability of time in which to engage in the activities that are necessary for them to be effective". Steven Kerno in his article states that, "time is defined as the ability for a given community of practice to engage in prolonged, sustained discourse. Such engagement is typically nurtured by a certain amount of insulation or protection from shorter-term priorities that might be present within the competitive environment. Time may also be considered as the ability to structure a given period (e.g., one day or perhaps even one week) to involve oneself in the activities conducive to the effectiveness of a community of practice, such as regular meetings, allowing for engagement with others" (Kerno, 2008, p69-78).

Within the consulting industry, time is money as consultants bill their work hours to clients. There is a level of accountability for individual consultants as they have to construct their work time in order to meet billable targets. There is an element of pressure on individuals to meet these targets as

there are reward systems for achieving targets and punishment systems for failing to do so. However, in recent years, the work pressure in the environmental companies has increased due to the company as a whole, setting increasing targets in order to make annual profits. The industry has experienced a reduction in demand and project work has been limited which has created a competitive environment between companies bidding for project work. This company pressure has been felt at every level of the company and has influenced the organisational structure in terms of the necessity to restructure and in turn effected individual consultants work.

Kerno (2008) also states that in today's business sphere, organisations must struggle with intensifying competition as globalisation and its associated impacts alter the economic, political and social landscape. The combination of these impacts is creating an increasing surge of business activities. As this surge continues, organisations demand increasing efficiency and competence from their employees. This limits the situation which is required for cultivating communities of practice (Kerno, 2008).

Traditionally, most large organisations have a hierarchal structure and communities of practice would have to align with the pre-existing organisational hierarchy. Companies have an organisation structure which reflects reporting relationships and the approved structure of communication, the central decision-making core of control and power, the authority to give orders and sanction obedience and to discipline subordinates when necessary and appropriate. Communities of practice can function in organisations when linking individuals whose function and scope of their interaction is to solve common problems, to exchange ideas, to share knowledge directly applicable to daily work and to improve practices (Kerno, 2008).

Joanne Robert's (2006) paper, *Limits to Communities of Practice*, indicated that power dynamics within communities of practice have the capability of influencing knowledge creation and distribution. Power is the capacity to achieve something through force or control. In Lave and Wenger's (1991) study which investigated apprenticeship and situated learning, new members shift from a position on the periphery to one of full participation as they develop their knowledge and learn from skilled practitioners. In the broader organisational context, peripheral members may not develop beyond a position of peripheral participation. Although, Lave and Wenger (1991) observe the significance of power in shaping the legitimacy of peripheral learning and participation, they do not investigate the implications of the distribution of power in their case studies of communities of practice (Roberts, 2006).

Considering the application of communities of practice within the environmental industry, the issue of power dynamics may aid in knowledge transfer to new members within the organisation. Company structures have a hierarchal approach to their technical disciplines and the line management structure creates a set power dynamic in companies. Senior technical management has mandates to mentor and grow individuals under their management structure which assists in knowledge transfer. In larger global company structures there is a distinction from upper management which operates at a global level to senior technical leads in separate disciplines and the line management under them. Knowledge transfer occurs more readily within the technical discipline's line structure and this fixed power dynamic assists in growing technical skills of young or newer individuals.

In some cases, however, some mid-level and junior staff feel they are not growing their technical knowledge as much as they would like. This complaint is at an individual level and the efficiency of the individual's line management structure would need to be investigated from the company perspective. Roberts (2006) also states that in hierarchical structures where power is centralised,

discussions may be limited to positions of authority within the organisation. The members of a community may not have the power to have a say (Roberts, 2006). There will be instances in companies where juniors, mid-level and sometimes senior practitioners feel that their voices are not being heard by the upper management structure. Individuals in these cases generally seek employment elsewhere if nothing changes in the company. In most cases, the fixed line management structure works within the social impact assessment discipline and many newcomers to the profession start at larger companies with senior specialists to mould their growth.

Roberts (2006) also suggests that communities of practice may become stagnant in terms of their knowledge base and resistant to change. There is already an accepted social impact assessment process which is outlined in the best practice guidelines and these are the steps practitioners typically use when working on projects. In fact, the typical SIA process discussed earlier in this chapter form a knowledge base which most practitioners seldom deviate from. Roberts (2006) supports this premise that sometimes the ways of doing things can become institutionalised within routines. The World Bank and International Finance Corporation (IFC) have already institutionalised the social impact assessment process by required standards and practices. Other consultants and clients can identify social impact assessment practitioners by their knowledge and implementation of these standards. The social impact assessment community of practitioners' worldwide is a large number of individuals, operating at different organisations across the world but they all align their practice to the institutional guidelines.

Wenger, McDermott and Snyder (2002) considers communities of practice in an organisational context which is identical with environmental consultancy companies. They state that when communities of practice are applied to large multinational organisations, they would have very large memberships and would be diluted in terms of maintaining interactions and participation. Roberts (2006) reiterates that communities of practice can be identified in small groups of people working in close proximity and in globally distributed communities. Large distributed communities can even be viewed as a collection of communities of practice (Roberts, 2006). Roberts critique is that knowledge transfer is stunted over geographical distributed communities of practice. This has been noted in this research as well. The social impact assessment practitioners working in a large global company with offices in different countries interacted mainly with the small community within their own office rather than with other practitioners in other offices around the world. Hence, smaller groups of communities' form within larger organisations and they sometimes operate independently from the entire community in the organisation.

Ardichvili, Page and Wentling (2003) state that companies have a competitive advantage based on the quality of their employee's knowledge capacities. It is an investment by the company to promote knowledge generation and sharing among their employees in order to win work contracts based on the expertise of their staff. Ardichvili, Page and Wentling (2003) also considers the barriers to sharing knowledge within a community of practice. In their research, they investigated members willingness to use communities of practice as a source of new knowledge and to share knowledge on the community platform. They identified areas where community members felt they could not share their expertise, opinions or insights to the broader community (Ardichvili et al., 2003).

Some of these areas are relevant within the consulting industry among the SIA practitioner's community of practice. These include the following:

- Confidentiality agreements signed by consultants when working on specific client projects. This prevents sharing of information outside the project team.

- Lack of confidence of the practitioner in their own knowledge to meaningfully contribute to the community of practice. Practitioners may feel they are letting the community down by providing inaccurate information or knowledge to the group.
- Members of a community of practice have to be able to trust the accuracy and validity of the knowledge shared among the community. If you have established networks within the community and you know the other members and trust their expertise, it is easier to be open to sharing knowledge and utilising the available knowledge in the community. This becomes a barrier when communities are so large that members do not know each other or have an established working relationship with other members.
- The way in which the organisation structures it's knowledge network and how it is managed can be limiting to the sharing of knowledge across all communities in the company and across global offices.
- Development of intellectual property among individuals within a science discipline can create weariness to share this knowledge within the community. This also limits the ability of practitioners to collaborate on projects.

The barriers mentioned above will be discussed further when unpacking the responses from the research participants. There is a level of competitiveness among consulting companies within the industry and many tenders for the same large international projects. This competitiveness is one of the challenges for implementing the community of practice theory in this industry.

This research investigates the environmental consulting companies operating within western business models where a hierarchal organisational structure plays the integral function of knowledge generation and dissemination. The participants of this research operate at the technical discipline level of environmental consulting companies where the senior social scientists form the lower tier of the management structure. The management of technical knowledge of the social impact assessment discipline lies within this lower branch of a global company. Based on the above literature review of communities of practice in organisations, is this learning theory relevant for the level of the company where technical knowledge is managed or is it not relevant, based on the time and resources needed to make communities of practice functional in an organisational setting. The results of this thesis will discuss the relevance of communities of practice in the organisational setting of environmental consultancy.

2.7 Key Points from the Literature

As stated by Graham Moon (2007), the social impact assessment discipline is a technical field which deals with concepts such as culture, community, power, human rights, gender, justice, place, resilience and sustainable livelihoods which are assessed as potential impacts for development projects. The assessment of these concepts is investigated through the methodological framework of a SIA process and presented in a SIA report. The SIA process is the knowledge basis which social practitioners engage in and this knowledge has been created, transferred and has evolved over the years to enhance the discipline of social impact assessment.

Social practitioners gain their knowledge base by interacting with other social practitioners and working on projects with senior practitioners. This social or collective learning, frequent interactions, use of the same jargon and tools defines this professional group as a community of practice. Social practitioners identify themselves informally as part of a professional network across the world based on their work within the discipline. Wenger's characteristics of communities of practice are reinforced by the features of social practitioners working within consulting organisations. I unpack these characteristics further in the results chapter.

From the literature, social impact assessment practitioners can be identified as a community of practice through their defining characteristics and level of interaction. Knowledge sharing occurs through these interactions and this research is investigating this knowledge flow. By understanding the theory of community of practice, the principles and stages of designing a community, we can assess if the theory will be useful in productive knowledge management and transfer in consulting companies.

Wenger, McDermott and Snyder (2002) have established seven principles for cultivating communities of practice. As the social practitioners form a natural albeit intentional community of practice in consulting organisations, they need to be cultivated in order to sustain their relationships and maintain knowledge transfer in the long term. The designing of communities of practice, the stages they go through which require certain actions are described in this literature review and can be implemented in consultancy companies as knowledge management strategies. However, the main critique for the communities of practice theory is that it is time consuming to implement which doesn't meet the business goals of consultancy firms. In order for the community to flourish, there is also a level of commitment needed from individual members to continue the energy and flow of the community.

The community of practice theory has benefits to organisations especially those related to knowledge management. Similarly consulting companies trade in knowledge and producing that knowledge through impact assessment reports. The theory could be used as a tool cultivated for the strategic advantage of organisations. It can also be applied in organisations where communities are stretched over geographical distributions. Even with all the benefits this theory has, it is still not widely practiced in organisations.

Wenger and Snyder (2000) proposed that the community of practice theory has only recently been associated with business models and some companies have taken steps to implement, nurture and grow communities of practice. I also discussed that it is difficult to build and maintain communities of practice and to integrate them with the rest of an organisation. However, when viewing the organisational structure and nature of learning within professional technical groups in environmental consulting companies, the principles of community of practice are occurring. These technical groups in consulting companies are already established communities of practice where there is a common understanding of specific technical knowledge and there is learning and knowledge transfer which occurs through the hierarchal organisational structure.

Wenger and Snyder (2000) also observed that the dynamic and fluid nature of communities of practice makes them impervious to formal management structures. We also accept that groups and teams can exist in an organisation but they may not be communities of practice. We have discussed that social impact assessment practitioners naturally formed their own community of practice based on the knowledge transfer or participatory learning through their interactions. This research will investigate these interactions and existing mechanisms for knowledge transfer in order to acknowledge that this social scientist group do function as a community of practice. Also, within consulting organisations the hierarchal structure of the organisation promotes knowledge transfer from senior to junior members.

The main critique of the communities of practice literature is the additional time and resources needed to implement the theory in an organisational setting. The literature review gave an in-depth description of how communities of practice are cultivated and sustained through the principles and stages of the theory. When implementing these principles and sustaining existing communities of practice in the workplace, there is little research available to depict the application of communities

of practice in the workplace. In this research I hope to give the reader an understanding about the community of practice theory and the existing learning mechanisms in the consulting industry. Thus, the communities of practice theory can be used to legitimise the learning processes occurring in environmental consulting firms.

The theory also illustrates the commitment and drive by individual members of a community of practice to ensure its relevance and sustainability over time. Community of practice has been used as a knowledge management strategy in other organisations but the adaptiveness of the theory to the environmental consulting organisations has not been assessed. Through understanding the details of community of practice we can engage with the existing learning mechanisms in this research and discuss if the theory is relevant for the organisational context of consultancy firms. These are aspects to consider when going forward into the discussion on the findings from this research.

3 Methodology

The methodology followed for this research is a qualitative research design. Research design has been defined by Frankfort-Nachmias & Nachmias (1992) as a plan that guides the researcher in the process of collecting, analysing and interpreting observations. It is a model that allows a researcher to extrapolate common themes from the data collected regarding relationships among the aspects under investigation (Frankfort-Nachmias & Nachmias, 1992). A qualitative research design has been chosen for this research study because it is an optimal method to investigate the richness of experts' knowledge and experience. Opinions and assessment of trends can be appropriately assessed through this design with the use of participant observation and key informant interviews as tools for data collection.

As a social scientist and a member of this expert group, I have utilised participatory observation throughout this study and the ten years' experience I have had in the industry to present whether knowledge sharing happens efficiently within environmental consultancy organisations and within the broader community of social scientists. I have also interviewed a sample of my peers within the company where I worked, as well as peers operating in similar positions at other consulting companies who I know through my professional network and as independent contractors within the industry of environmental compliance. Some would see this as a conflict of interest however, my place within the community allows me access to the environmental consulting industry, other practitioners and experience into the perceptions and the challenges which social scientists face while trying to grow their knowledge and operate within the discipline of social impact assessment and management. I too started as a newcomer to the discipline and had to gain my knowledge through the existing mechanisms I am investigating.

There are many social scientists practicing within the realm of environmental and social compliance around the world. Individuals can join the global community from a variety of professional backgrounds so there is no way of knowing the total number of scientists around the world at any given time. The sample chosen for this research is based on my immediate network of social scientists who I know personally and have worked with on projects over my years in the industry. These scientists recommended further research participants from their own networks. Thus, the research participants are in some ways linked through their interactions with each other.

The community of social scientists operate as a professional group in many organisations worldwide. Their interaction and knowledge sharing is vital for the progress of the discipline within the context of environmental authorisations or permitting for development projects in the mining, energy, linear infrastructure and oil and gas sectors. As such, the theory of Community of Practice maybe suited to investigate the effectiveness of knowledge sharing and progression within this industry.

3.1 Community of Practice Theory and its Relevance to the Research

The community of practice theory is used to support this research as social impact assessment practitioners' function as a community of practice. The theory is complimentary to the collective learning happening in this discipline and the existing learning pathways currently in the industry for social learning and knowledge sharing. The social scientists operate within an informal group of technical experts and are the interface between knowledge of international guidelines and the implementation of best practice management at a project level. Their experience and expertise are gained through project work rather than from an academic construct. The process of knowledge sharing and transfer is done through practical applications and on a project by project basis.

Individuals who practice social science within the professional context of social impact assessment and environmental permitting, have a variety of academic qualifications. There is a loose trend that individuals studying environmental science, psychology and economics specialise into the social impact assessment discipline. This however is not always the case and there can be individuals from other backgrounds who enter into this type of work as well. They join existing social impact assessment teams at environmental consulting firms and grow their knowledge through the experience of their peers and seniors who they work with on projects. This type of professional social learning is described in Wenger et al. (2002) which confirms the relevance of the community of practice theory in this research.

Communities of practice are groups of people who share a concern or a passion for something they do and learn how to improve it as they interact regularly. Three characteristics of a community of practice are the domain, the community and the practice. It is the combination of these three elements that comprises a community of practice (Wenger & Trayner-Wenger, 2015). This theory is suited to analyse the effectiveness of knowledge sharing within the social science community as they interact professionally to share experiences and learning from various projects. As such the research is framed in context of the community of practice elements introduced in the literature review. It investigates communities of practice formed through geographical boundaries within a global company as well as communities at other global companies and social scientists who operate independently from global companies.

The domain: This is described as the shared domain of interest where being a member infers a commitment to the domain and a shared skill that distinguishes the members from other groups or communities (Wenger & Trayner-Wenger, 2015). Social scientists in consulting companies practice within the domain of the social impact assessment discipline within the environmental and social compliance and management industry compiling impact assessment reports for development projects. This is a specialised discipline which incorporates consulting to large-scale development clients on the international best practice policies when addressing their relationship with the social context of their development operations. The technical realm of this discipline is broad and also incorporates the development and implementation of appropriate social management plans which minimise the impact of the large-scale mining operations on the remaining surrounding project communities.

Social impact assessment practitioners are employed at global and local environmental consulting companies based in different parts of the world. Scientists operating on projects from different geographical distributions also constitute different communities of practice working within the same domain of the discipline. Communities of practice are determined by their level of interaction and learning potential. Although the domain of social impact assessment is large and global, there are many smaller communities of practice forming within organisations and geographically located offices. This research will investigate different smaller communities of practice within the social impact assessment domain. For example, the social scientists in the Canadian offices of a global company who were interviewed had a tighter knit community than the other social scientists of the same company at other offices in the world.

The community: A team of social scientists will collaborate on projects where compliance and permitting are required. This team would typically constitute a senior practitioner who would provide technical guidance and review, and a mid-level or junior scientist who would undertake the actual work. They would interact on a project basis and apply shared learning and knowledge in order to facilitate an efficient social management process. As these specialists undertake different projects, the teams they work with may change which further enables interaction amongst scientists

and facilitates knowledge sharing. The community of social scientists have global project exposure and range in their years of experience. This research focused on a community of social scientist professionals operating within a global company as well as consultants working at other similar companies and self-employed individuals practicing in their independent capacity.

The community of social impact assessment scientists is large and at a global level, as stated previously, the number of practitioners is unknown. There is no global database of practitioners enabling practitioners to know who the other members of the global community are. Members interact through two avenues, the overarching policy development level, which governs the domain of social impact assessment and, the project implementation level at which most practitioners operate. The policy level social scientists are well known in the industry as leading senior members of the global community and are invited by leading financial institutions to develop policies and guidelines which are implemented worldwide. These senior members share their knowledge through papers, published articles and sometimes at conferences but not through constant interaction with the global community. This research focusses on communities operating at a project level through global environmental companies.

The community is limited by organisational or company boundaries such as ethical and geographical boundaries. Due to the confidential nature of the projects in this industry when dealing with compliance, the teams working on projects become closed in their communication about that project. Information about a project would not be shared outside of the company to other social scientists unless their opinion is requested through the appropriate channels. Even within global companies, projects may require local teams or international teams from different offices within the company. The local projects would typically have a team based in that geographic location whereas the larger international projects would have team members distributed globally within the same company. The geographical boundaries fragment the community of practice at global companies into smaller communities operating within their geographical niche.

The practice: Members of the global social scientist community of practice are practitioners in the discipline of social impact assessment, compliance and management processes. They have a shared portfolio of skills, experience, projects, research tools and ways of addressing challenges arising from projects. Experts within this community practice at a policy development and project implementation level. They share their knowledge through project work, presenting at conferences, publishing journal articles and implementing international guidelines and tools which potentially transfers knowledge to other specialists in the field. Senior members share their learnt project experiences with peers within the practice across the globe as well as with younger members who may not have had many years of project experience but work at the same organisation and have regular interaction with the senior members.

The essence of communities of practice has been around for as long as human beings have learned from each other. At home, at work, at school, in our interests, we all belong to communities of practice, usually a few of them at the same time. In some we are core members and in many we are peripheral members. We move through numerous communities over the course of our lives (Wenger & Trayner-Wenger, 2015). Within the context of professional social scientists, there are many communities of practice engaging at different levels of the discipline. Two main examples of these levels are the consultant-project interface which this research focuses on and the social scientists operating as decision or policy makers whose interface is with developing the best practice guidelines which govern the discipline.

This community of practice theory provides a lens for understanding learning with a group of social scientists who have worked within the same or similar consulting organisations and on global projects. Their experience and implementation of existing international guidelines and standards have enabled them to develop expert opinions on the challenges faced when transferring their knowledge in the global technical community. The data collected through this research can assist in identifying the challenges of knowledge sharing within the community of practice at global organisations and provide some avenues for improving learning among other practitioners within the practice.

3.2 Data Sources

Primary data was sourced in the form of perceptions and opinions of participants working in the discipline of social impact assessment and management functions within the broader environmental and social compliance context. Data was collected through participatory observation by myself as a member of the social scientist community and through key informant interviews with social scientists and their networks within global companies which function as its own expert community of practice. These specialists range from senior scientists who have years of experience and gained knowledge to junior specialists who are still learning and growing within this intellectual field. Their experience and knowledge are gained by working in the impact assessment discipline on a variety of development projects.

I based this research on professional social impact assessment practitioners because I am one and I have worked in the industry for almost ten years. I came from an academic background of psychology and environmental science and joined a small local consulting firm as a junior environmental scientist. Out of necessity, they needed someone to undertake social impact assessments and that is how I learnt about the discipline. I was mentored by a senior manager and there were only the two of us at the company who worked in social impact assessment. When my mentor left the company, I too started seeking employment at another company who had a larger team of social scientists. I joined a larger global environmental company in 2009 and became a member of their social discipline group. Through this group and over the years, I learnt from more senior members and grew my skills and experience as a social impact assessment practitioner.

I realised that this discipline is a specialist field with its own learning curve and the members of my initial team had all joined from different academic fields and had somehow found their way to this discipline. I also realised that any progression or learning in this discipline happened through social learning and through participation on projects with senior members. In later years I also helped in growing the skills of a junior member thus transferring my knowledge. Working at a global environmental consultancy for the past nine years has given me insight and experience in the importance and challenges of sharing knowledge within this discipline. I have used my knowledge and experience in this field to inform my research. I also sourced my research participants through my own network of social impact assessment practitioners who I have worked with throughout my career.

Although social scientists operating in the industry of environmental consultancy are a technical and professional group, there are different levels of communities which interact at a geographic, company and institutional level. This research focused on a community of professionals operating within one global company as well as consultants working at other similar companies and self-employed individuals. This sample group represents social scientists operating on project compliance, permitting and management and they consult on a project basis to clients within the development sector. There is a level of social scientists who operate within financial institutions such

as the World Bank Group (WBG) and International Financial Corporation (IFC) who make the policies and guidelines that govern the best practice of the project-based consultants.

A total number of twenty participants were interviewed for this research with thirteen being from one global consulting company and seven working at other consulting companies in the same industry or as self-employed consultants. For the purposes of this research, a coding system is given to the global companies and self-employed consultants. The company which thirteen of the participants are employed will be referred to as Group A. The participants employed at other consulting companies will be collectively grouped as Group B and the independent consultants operating as sole-proprietors will collectively be grouped as Group C. Insights from these various groups of scientists will be analysed to indicate if there is sufficient knowledge transfer occurring to maintain the community of social scientists at a consulting level.

Observations of online forums where social scientists interact with each other was used to provide a contextual backdrop to the existing mechanisms utilised by the expert community in the communication and sharing of knowledge. Observations were on some of the formal forums which participants described in their key informant interviews such as the technical community groups arranged at the global company (Group A) as well as other public forums like LinkedIn and the SIA Hub (www.socialimpactassessment.com) were also randomly monitored throughout the research period. However, no form of robust analysis was undertaken on these forums as data was mainly derived through key informant interviews.

The use of both participatory observation and the data sourced through the participants' knowledge and experiences will add value in understanding the communities of professionals within the social impact assessment discipline, how they interact as a community and determining potential solutions to the challenges put forth by the members of the community.

3.3 Data Collection Techniques

The proposed data collection is a combination of primary data collection through key informant interviews and participatory observation, research from previous articles and case studies discussing communities of practice in organisational settings. These articles and references were obtained through the public domain.

Primary data was collected through key informant interviews with a group of social scientists at a global company (Group A) to gain their opinions on the interactions within their community of practitioners and their broader relationships within the network of social practitioners outside of the company. Interviews were undertaken with social scientists employed at other companies (Group B) within the consulting industry as well as self-employed independent consultants (Group C) operating independently from a company or organisation. All these consultants are knowledgeable about the IFC performance standards addressing the requirements for social impact assessment and management on development projects.

The key informant interviews were semi-structured qualitative in-depth interviews with people who practice within the project community context to ensure compliance to international guidelines. The purpose of key informant interviews is to collect information from the social scientist community who may be part of the broader network of policy and decision makers, professionals, or practitioners in the impact assessment discipline. Two techniques used for this research study were telephonic and face-to-face key informant interviews. Some of the experts are based in other countries and a telephonic/skype interview was better suited for their availability. I administered an informal questionnaire to the participants and they were encouraged to share more on the key

topics discussed. The topics were arranged into key thematic areas which could be better analysed in the context of qualitative data collection. Key themes highlighted from the questionnaire were:

- Years of experience in relation to the individuals' level in the community.
- Geographical location of the team in which the individual works.
- Previous work which led the individual to social impact assessment.
- Types of interactions and frequency of interactions with the current work team.
- Mechanisms for gaining knowledge through the individuals' career.
    - Mentorship
    - Conferences
- Limitations to the knowledge transfer mechanisms.
- Challenges faced within the discipline.

3.4 Sampling Techniques

The primary data component of the research study are the perceptions and opinions of social scientists who are currently practicing in the social impact assessment and social compliance disciplines of the development industry sectors globally.

Interviews were conducted with five senior social practitioners within Group A. They then recommended a further eight social practitioners who they have had regular interaction with. These practitioners range from junior to senior level in the company's community of social practitioners. These members were contacted to participate in the research until all social scientists employed at the company were interviewed. This process can be defined as snowball sampling which relies on the participants to provide further participants in the research pool. A further seven participants ranging from senior to junior were sourced from my own network of social practitioners who I have worked with during my years as a social impact assessment practitioner.

The secondary data was sourced through online research either through books, research papers, articles or online forums where content is publicly available. Where the community of practice theory has been referred to and quoted, the appropriate references have been applied. This secondary research was to provide a context for a wider debate associated with knowledge sharing within consulting organisations and within the discipline of social impact assessment and management projects.

3.5 Data Analysis and Interpretation

The qualitative data collected in this research study was analysed using iterative methods such as thematic content analysis. The role of iteration analysis was as a deeply reflexive process and not as a repetitive mechanical task. It is fundamental to sparking insight and developing meaning. Reflexive iteration is at the centre of visiting and revisiting the data and connecting it with evolving insights, gradually leading to refined understanding (Srivastava & Hopwood, 2009).

Thematic content analysis identified themes across the primary data collected. Interviews were audio recorded through skype for business or on a phone recorder and transcribed into Microsoft Word documents so as to assist with the analysis through the same framework of iterative analysis. This analysis technique was chosen as it is optimally suited to the qualitative data collected through key informant interviews and allowed a platform to assess and understand the opinions of the different social scientists based on their level of experience and expertise. The thematic analysis assisted me in consolidating themed discussions relevant to answering the research questions.

3.6 Ethical Considerations

This research methodology received ethical approval by the University of Witwatersrand Human Research Ethics Committee (non-medical) under protocol number H16/04/17. This entailed the approval of a qualitative research methodology including semi-structured interviews with social scientists as well as participatory observation. I am a social impact assessment practitioner working within the field of this research and have provided my own insights of knowledge transfer and personal learning and growth in this research.

Participants who were interviewed, signed an informed consent form to partake in the research. Participants also agreed, through a separate consent form, to be audio recorded solely for data analysis purposes. All data and recordings were kept confidential and will be destroyed after 2 years from submission of this research thesis. Where appropriate, confidentiality of companies, project case studies and identities of social scientists were acknowledged and respected throughout the research process.

3.7 Summary of the Methodology

A qualitative research design has been chosen for this research study because it is an optimal method to investigate the richness of experts' knowledge and experience. Primary data was collected through participant observation and semi-structured key informant interviews. As a social scientist and a member of this expert group, I have utilised participatory observation throughout this study and added my own insights and knowledge to this research. The secondary data was sourced through online research either through books, research papers, articles or online forums where content is publicly available.

The community of practice theory is used to support this research as social impact assessment practitioners' function as a community of practice. As such the research is framed in context of the community of practice elements introduced in the literature review. It investigates communities of practice formed through geographical boundaries within a global company as well as communities at other global companies and social scientists who operate independently from global companies.

A total number of twenty participants were interviewed for this research with thirteen being from one global consulting company (Group A) and seven working at other consulting companies (Group B) in the same industry or as self-employed consultants (Group C). Insights from these various groups of scientists will be analysed to indicate if there is sufficient knowledge transfer occurring to maintain the community of social scientists at a consulting level.

The qualitative data collected in this research study was analysed using iterative methods such as thematic content analysis. Thematic content analysis identified themes across the primary data collected. The thematic analysis assisted me in consolidating themed discussions relevant to answering the research questions and formulating a discussion. This research methodology has also received ethical approval by the University of Witwatersrand Human Research Ethics Committee (non-medical) under protocol number H16/04/17.

4 Existing structure of learning within the Social Scientist Community

This chapter discusses the research findings which are presented in thematic sections and can be linked to the theory of community of practice. The results of this research are presented as an analysis of the three groups of participants based on their varying perspectives within the industry of social impact assessment. The key themes from the research are covered in Chapter Four and Five. Based on the questions from the key informant interviews, the following themes were found:

- Years of experience in relation to the level in the community.
- Geographical location of the team they work in.
- Qualifications and previous work experiences which led the participant to the social impact assessment discipline.
- Types of interactions and frequency of interactions with the current team.
- Mechanisms for gaining knowledge through the career path:
    - Senior Review
    - Workshops and brain-storming sessions
    - Self-learning
    - Technical communities or webinars
    - Conferences
    - Mentorship.
- Limitations of the above-mentioned mechanisms.

It is important to note the context of these results are based within the consultancy business model approach and I have utilised my own knowledge of the company I work for as a reference point. This approach means that the consultants' time has to be accounted for on projects in order to bill clients. Time is budget sensitive and larger consultancy companies require individual consultants to bill a certain percentage of their work week to projects in order to create revenue for the business. The discussion on knowledge sharing should be viewed within this context as it has its own effects on the ability to adequately share knowledge within the social impact assessment profession.

When discussing the existing structure of learning within the social impact assessment discipline, the research participants or social science community should first be described.

4.1 Description of the Research Community

Social scientists were interviewed from the same global consulting firm (Group A), other global consulting companies (Group B) and independent consultants (Group C). These groups consisted of social scientists ranging from junior to senior. The distribution of the research participants in terms of experience is presented in Figure 3 below. The distribution indicates that there are a higher number of senior practitioners interviewed for this research. Group A participants which were from the same company had a top-heavy distribution pattern which indicated a higher senior to junior ratio. This means that the company has more seniors who can procure and manage multiple projects which increases the company's revenue.

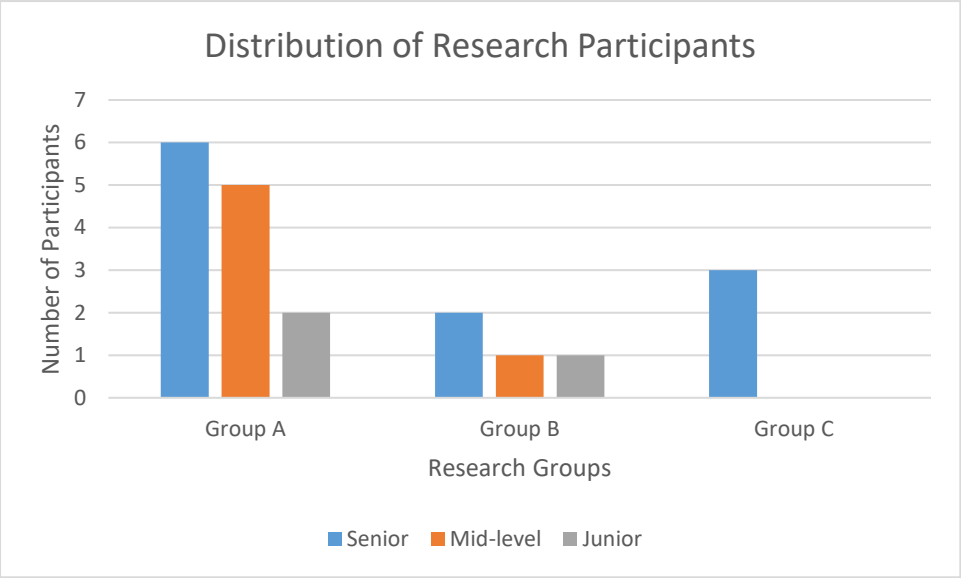

Figure 3: Breakdown of the research participants.

The industry to date has no formal educational criteria to qualify as a social impact assessment scientist and the research participants come from varying academic backgrounds of sociology, psychology, economists, environmental scientists and geo-information specialists (based on participant responses). Although there is no formalised standard for what constitutes a junior, mid-level and senior social scientist, it is a general industry accepted understanding that these levels are assigned, based on project experience and completion of task deliverables associated with projects over a certain number of years. From my research results, the flow of communication or interaction of these levels is presented in Figure 4 and indicates that there is communication and interaction between all team members.

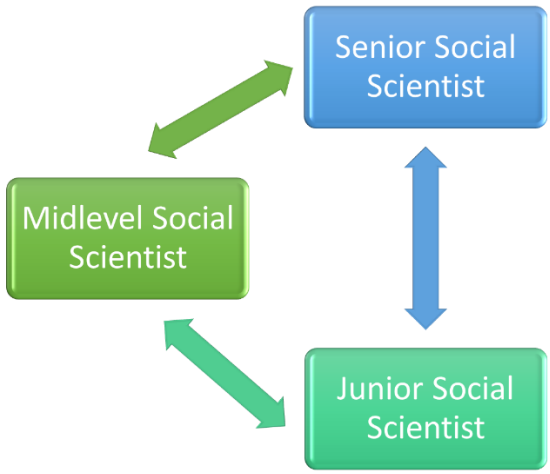

Figure 4: Interaction between different levels of social scientists

A junior practitioner was defined as a university graduate with less than five years of experience in the discipline of social impact assessment and management. They would require more frequent interaction from a mid-level or a senior consultant and would be involved with colleagues on projects rather than running their own deliverables. Typically, juniors are graduates from university or beginners within the field of social impact assessment. They generally start in a company with

little to no project experience and work up to completing a social impact assessment process with a technical report deliverable.

A mid-level consultant is considered as having between five to fifteen years of project experience which includes managing complete social impact assessment processes and working within larger project teams. They operate somewhat independently and would interact with senior team members if they encounter any difficulties or complexities on a project. In terms of an organisational perspective, they would report to a management structure for reviews on their reports and accountability of project budgets and revenue.

Senior consultants in the industry generally have over fifteen years of experience on projects and have built their profile within the broader impact assessment discipline network. They operate independently on projects and have developed a network of contacts which allows them to win projects. This level of consultants are generally managers within an organisation or operate as independent consultants and provide quality control reviews and guidance to more junior employees. Social specialists at this level are more involved with the transfer of knowledge within the community and create avenues for learning within the discipline.

Social scientists working within the global consulting industry operate within smaller communities of practice groups across the world. Firstly, based on business ethics and client confidentiality, social scientists interact mainly with other social scientists within the same organisation or consultancy company. Secondly, social scientists who work within the same company interact with specialists from other companies as part of multi-disciplinary project teams. The limitation of interactions with communities within companies creates a boundary between social scientists in the broader global community. For this research, focus is placed on the smaller communities of social scientists operating at a project consultancy level.

Based on this research data, the level of interaction amongst the participants depend on project work. Group A participants were all from the same consulting company. They interact within the company structure where seniors and junior members interact more frequently in the offices from which they work. Interaction within the same company across the offices happens through the senior members. This company interaction is not as frequent as daily interactions within the same offices. Senior members also interact globally with project managers and seniors in other countries based on the requirements for project teams.

Group B interactions occur similarly to Group A but based on the relevant company structure. Seniors based in different offices face the same geographic isolation from the other social scientists within their company across the globe. Interactions occur frequently on a project basis and for senior review or report deliverables.

Interactions for the Group C participants are based on the project as they are independent consultants and senior social scientists. A Group C participant stated, *“As far as team interaction, I honestly don't find it that much different. I still work like when I worked with a larger company, we were still loosely affiliated practitioners across various operating companies in a big geo-technical engineering company. Now I still maintain those contacts with people, I still collaborate with practitioners. I call for advice as and when I need it and people call me. So the actual team dynamic is not that much different. I think it’s more of a collegial voluntary participation in professional development.”* As independent consultants, they tend to make more of an effort to maintain relationships with the rest of the community. It can be isolating working as an independent

consultant as interactions are mainly project based unless you reach out to connect and keep informed about changes in the knowledge base of the community.

Based on the premise that knowledge of social impact assessment has to be learned on the job, it is vital that the knowledge and experience gained by more senior members of the community be transferred to newer or junior members. This cycle of knowledge dissemination fits into the Lave and Wenger (1991) theory of social and participatory learning. Consultancy companies have a definitive hierarchal structure which puts seniors in a technical field at some form of management level. Seniors act as gatekeepers to the knowledge of the technical discipline such as social impact assessment and this knowledge is transferred to other members through the projects they work on.

4.1.1 Qualifications to be a Social Impact Assessment Specialist

It is commonly accepted in the industry that there are no academic qualifications which enables one to be a social impact assessment specialist. Most practitioners come from the environmental impact assessment background, sociology or anthropology and economics. Knowledge and experience within social impact assessment is learnt mainly on the job, through experience on projects working with seniors in the field or industry leaders in the social impact assessment field.

Since 2011, the University of Johannesburg established a course which covers the social impact assessment discipline. Two of the research participants have been involved with this course and were able to provide their insights into the value of this academic foundation for social impact assessment. The course is run through the sociology department therefore it attracts students from a sociology background. The graduates from this course still enter the workplace as inexperienced juniors and learn through the project work they are exposed to and through the interactions with the seniors in the technical field. There are also a few qualified environmental scientists or environmental managers that are already in the workplace and require knowledge about social impact assessment and undertake the course. People from government departments, typically mining, water etc and environmental consultants also attend the course as a complement to their current work.

Social impact assessment and management is a relative new field. A senior practitioner from Group C commented that, "*In 1993, it was probably the start of my social impact career and at the time, nobody really knew what social impact assessment was.*" It followed the formal parameters of environmental impact assessment and evolved as industry leaders defined guidelines and policies to address social impacts on development projects globally. This is generally why environmental impact assessment practitioners specialised into social impact assessment.

This being said, there is no consistency in the approach and framework for social impact assessment across the globe. The IFC and World Bank have developed guidelines and performance standards to align the environmental and social impact assessment process for developing companies. However, the industry continues to change and evolve and projects change and new case studies highlight best and worse practice.

Another senior participant from Group C said, *"When I was there at your company, there wasn't necessarily an approach to do social impact assessment that was applied in each project or country, so if you did an impact assessment in Turkey it was not necessarily the same as one in South Africa or one in Russia. There was no format that was then adapted for local content. It was largely practitioners doing it the way they thought it should be done. And that is not just at your company. It is in other engineering companies that I have worked for, I don't think there is a general template that is used for impact assessment in general, or certainly for social impact assessment. Many times,*

when I work for other companies, I will ask them for their approach or their format for doing social impact assessment, their methodology and they will often say we don't have one - what do you suggest?"

As a relatively new technical field, there is no formal qualification which makes you a social impact assessment practitioner. A person would typically gain their knowledge through environmental or social consultancy companies where there is an existing team of social practitioners, preferably a senior member. Knowledge is gained through consistent work on projects with senior members so as to expand one's knowledge about the technical aspects of the discipline. It is also important that seniors recognise their roles in this knowledge cycle and impart their experiences to newer members.

4.1.2 Location Barriers to Knowledge Sharing

Based on the study group for this research, Group A were thirteen social scientists operating within a global consultancy firm but based in Canada, South Africa and Australia. The Group B and C participants were employed at other consultancy companies or as sole practitioners in South Africa and England (Figure 5). The Group A participants were spread across various offices in Canada, Johannesburg (South Africa) and Perth (Australia) indicating the normal geographical boundaries present in most global consulting companies. In terms of their interactions, it is easier for consultants working within the same organisation to have open communication and interaction across the globe and on projects more freely than with specialists outside of their company.

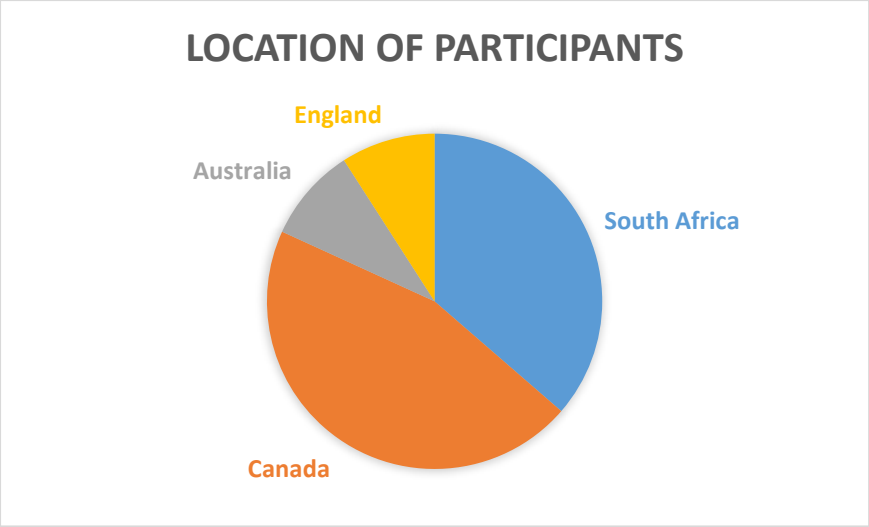

Figure 5: Geographical distribution of research participants.

In the global organisational context, there are small pockets of social scientist communities across the different geographical locations of the global consulting company which were interviewed as part of this study, mainly where offices are located. Locations in Canada, South Africa and Australia represented the community of social scientists within the global consulting company. These location-based social scientists created their own community of practice limited to each global region because project work is also limited to geographic regions. This geographic barrier created a limitation to sharing knowledge within the same company.

In Group A, Social Scientists in the Canadian offices of Vancouver, Nanaimo, Montreal, Calgary, Mississauga and Toronto shared their experiences with interacting within their cities, across the country and internationally with other country offices. The overarching comment was that communication and interaction was mainly facilitated through project work or being part of the

project team. The seniors responded that they had more frequent interaction within the country and on global project teams based on their experience being required on larger, high profile and complex projects. The mid-level and junior members indicated that their interaction was largely through their seniors and the types of projects available at their time being employed at the company. If there were larger projects which required more than one social scientists, the senior members would involve mid-level or junior members to assist with the workload, thereby exposing less experienced members to the larger projects and the network of scientists nationally. Mid-level and junior members also indicated that this type of work was more common amongst the Canadian offices and they very rarely had the opportunity to work on international projects.

The other main community of social scientists within research Group A were located in South Africa and their responses were similar. Interaction within the country office remains frequent for all members with the exception of seniors who have a global project platform. The one member from the Australian location reported feeling very isolated within the company community of social scientists. The Australian member reported more frequent collaboration with other technical specialists in the broader environmental teams rather than with other social scientists within the company. The collaboration with other technical specialists within the same office but outside of the social technical field was common with the South African participants as well. This could be based on the size of these teams, South Africa with three and Australia with one social scientist. Smaller teams require more interaction with peers and seniors even if they are outside of the technical discipline.

Interviews with research Group B, consultants from other global companies, indicated that the potential for knowledge sharing occurs more often within the same offices than across other offices within the global company structure. Even with the continual enhancement of technology and communication tools such as email, instant messenger and skype, these geographical limitations remain. Once again, the theme of seniors commanding the platform to interact at the global level within the respective companies prevails.

Research Group C, independent consultants, composed mainly of senior practitioners said their interactions were project related on multidisciplinary teams where their expertise was required. This project team scenario would typically only require the senior social scientist as the expert for the social component of the larger environmental or engineering project scope. In these cases, the interviewees reported occasional interaction with the project manager or team leader who may or may not be located in the same city as the consultant. These independent consultants are generally expected to lead their component of the study and report back to the project manager during the process with the end technical report delivered on time, so frequent interaction may not be required depending on the complexity of the project scenario. The aspect of location limiting knowledge sharing may not be as relevant with this group based on their inherent independent and experienced nature.

A participant from Group C reported, "*Most of the time, I'm part of a larger group of people or specialists. Many of them in a similar position as myself, not working for the company but where we would work together as a team on a project and we would really meet on rare occasions. It would maybe be the inaugural meeting for the project then I would sort of be left alone to do my part. But the type of work I do in terms of the social requires a lot of input from the other specialists. So from time to time, I would contact them via email and ask them questions or ask for their reports and I would look at the relevant sections to bring it into my report*."

At global environmental consultancies, location barriers are a reality even with the advancement in communication technology. It is still easier and more approachable to step into someone's office for

a quick discussion than scheduling a specific time for a telephone call or taking time to compose an email. The location barriers generally fence in the functionality of communities of practice at an organisational level. Social scientists work in their smaller communities within an organisation and that limits the ability of knowledge to be transferred across the global company. Consultants who worked at smaller offices indicated the isolation they experience from the rest of the social scientists and through this isolation, they established connections with senior managers from other disciplines within their office to provide that additional support and guidance when needed. Thus, the geographical barriers limit the benefits of having communities of practice at global environmental consultancies.

4.2 Types of Knowledge Sharing Mechanisms

The types of knowledge sharing mechanisms discussed by the research group were mainly project based learning which included senior technical review process, peer brainstorming sessions, project workshops for the larger project team (relevant to the independent consultants) and question-answer sessions with a senior social scientist. There are also non-project-based mechanisms which form a training function within companies or in the broader social scientist global community. These include webinars, conferences and mentorship roles.

Frequently used methods of communication across all knowledge sharing mechanisms and research groups are face to face discussions, emails and telephone calls. However, the most preferred method was face to face communication even though this is limited to office-based teams.

4.2.1 Project Based Types of Knowledge Sharing Mechanisms

4.2.1.1 Senior Technical Review

Responses from research Group A indicated that based on available time on projects, the best mechanism to share knowledge is through the technical review process. Technical review of report deliverables is part of the quality control process at consulting companies. Reports have to be reviewed by an authorised senior within that technical field before it can be submitted to a client. Seniors would use peer review or be the reviewer for projects. Mid-level consultants generally write the technical reports and manage the social component of the project with input from seniors on that particular project. Juniors within the company assist on projects with direction from a mid-level or senior consultant.

The responses from research Group B shared a similar report reviewing structure as is general practice at most consulting companies in the industry. Group C participants operating as individual consultants may have their reports reviewed by peers depending on the requirements for the project. Some projects which have multi-disciplinary specialists from different companies or as sole proprietors may not have the budgets for peer reviews on every specialist report. It is common practice that in these cases, the project manager, who would be a senior practitioner in the environmental field, would review all specialists' reports for the project. This approach limits the type of knowledge transfer through the social discipline and would mainly be for corrective purposes to align all reports to the overall project deliverable.

A Group C participant shared, *"I need to look at other people's work. It is a pretty big ask to say to a colleague - I have just written a social impact assessment could you review it and tell me what you think? Not many people have time to do that because of the nature of consulting. And it is not really an academic discipline. I have written to professors from graduate school and asked them if they are familiar with this field of study but I don't think there is a body who deal with social impact assessment. I don't think there is a branch that is looking into impact assessment, where there is like - did you get things right? what did you adapt? what is the learning from the qualitative science of*

doing social impact assessment. I have never seen that which doesn't mean it doesn't exist it just means it is my opinion. And from what I know, there are some academic groups in Australia, there is a centre that does have courses in this and schools of mining in Colorado, but I don't think, if they do have literature on these kinds of things I have never seen it. Might be my lack of professional experience or perhaps it just does not exist".

Senior review on projects is considered best practice within the industry and as such, there is time allocated for a senior resource to review technical report deliverables within a project budget. This time allocation enforces the review process and knowledge sharing on a project by project basis. The constraint is that there are a limited number of approved senior reviewers within companies who can maintain their project roles as well as their company management roles.

Most consulting organisations have a list of approved reviewers across the various disciplines within the company and these reviewers are vetted based on certain criteria dependent on the different companies. This is to ensure quality control of technical deliverables which international companies have to abide by. Seniors in the technical field are usually reviewers and by company standards, have to review final technical report deliverables.

The recent (last three years) global economic climate has affected the global consulting firms. Factors such as decreasing commodity prices has impacted the mining and oil and gas industries where major clients have reduced their operations and requirements. This saw a decrease in project work globally and forced companies to make staffing reductions. The company of the Group A participants underwent reductions in staff globally and streamlined the organisational structure of the company in order to meet business efficiency. This company wide exercise affected the social science community as key senior staff's positions were made redundant.

Group A participants have described the pressure of work targets due to the reduced staff. Priorities shifted in these last few years and employees are focused on achieving their personal, group and division targets which are based on revenue. The individual project managers are more accountable to higher management structures should projects run over budget or if clients fail to pay in time. Each individual is responsible for meeting their chargeable (hourly) targets and have to account for their time per day. This pressure on individuals and teams limits the ability or drive for individuals to spend additional time to develop knowledge and transfer knowledge to the community. The exception is if the learning can be done through a project which would then make learning part of the project expense.

As individuals in research Group A, the process of senior review is the best way to learn on projects. Even the senior reviewer gets exposed to possibly different ideas on how to approach aspects of a project. The limitation of this process is the time available. Seniors are managing various projects and as they are a more expensive resource on the budget, their time on projects is limited. Reviews often have to be quick in order to meet deliverables which reduces the learning time for the mid-level or junior social practitioner.

Mid-level and junior participants in Groups A and B indicated that these reviews often happen electronically. The document is drafted, sent for review to a senior, who then comments or makes changes to the document in track changes and sends it back to the technical writer (mid-level or junior consultant). Senior participants indicated that they try to follow up this electronic review with a face to face discussion or a discussion over the telephone if possible. The mid-level and juniors indicated that having a verbal discussion on the review process is beneficial and has helped in furthering their understanding of the report content.

The structure of consulting organisations from Groups A and B are similar with regards to senior review. There is a reporting or communication chain and seniors of a discipline will often be leaders within the managerial structure of the company. This means that in most cases, there would be one senior social practitioner in that discipline group who would be the reviewer for that discipline's projects. However, this linear structure has limitations based on the geographical distribution of the team members. Some offices have more seniors than mid-level or juniors, some have only one senior to a mix of mid-level to junior and other offices have no seniors at all based on the reduction of staff globally.

In the cases of having more seniors in the office, practitioners generally are involved in their own projects and may seek peer technical discussions or inputs from colleagues. They would involve the mid-level and juniors within their offices on projects. From the mid-level and junior practitioner perspective, this is beneficial. Through learning while on the job they are exposed to a variety of project work and can assist where needed. Sometimes seniors get involved in their own work and if the mid-level or junior scientist is not fully occupied on projects, it is left to their own initiative to seek work from the seniors.

The ideal case for beneficial learning and achieving company targets is to have a mix of one or two seniors, one or two mid-level and one junior practitioner. Participants in Group A and B who worked in offices which had this structure indicated an adequate level of project exposure, learning on the job and learning from senior reviewers followed by discussions. The social learning pathways flowed through interactions with senior to mid-level, senior to junior and even mid-level to junior if seniors were not available.

In the case of having no senior technical person in an office, social practitioners had to rely on electronic communication to a senior at another office. Another avenue for review in this case would be to have project discussions from a senior of a related discipline who is based in the same office. Generally based on the nature of the impact assessment discipline, social scientists would interact with environmental scientists for senior review or guidance as the environmental senior manager has more often than not had experience with the social aspects of projects during their work careers.

Group C participants are independent seniors and sole proprietors within the industry. The senior review process is not one that they follow unless they are working with mid-level or junior consultants on specific projects. Generally, this group of senior practitioner's work within multi-disciplinary project teams led by the project manager. In most cases the project manager would review and comment on the technical report deliverables for that project. In an ideal project scenario, there is an open flow of information from the project manager to all specialists on the project team and vice versa. Communication between specialists would either go through the project manager or they would need to be aware of information sharing between specialists on the project. However, this scenario does not always occur and Group C participants find that the breakdown in these communication channels create a challenge on projects.

This mechanism of the senior review process is built into the organisational structure of an environmental company and is currently the most efficient method for knowledge sharing. This is contingent on the effort the senior takes in the review process and the constructive feedback they provide the mid-level and junior scientists. Senior members have the mandate to share the project workload within the team they manage and can provide learning opportunities for other members based on the available project load.

4.2.1.2 Brainstorming sessions and workshops

Mechanisms such as brainstorming sessions and workshops are used on projects where there is time and budget available for more consultants to work on the project. Participants in Group A indicated that this method was useful at the start of projects and for proposals in order for the seniors, who will be the technical reviewers on the final report, to discuss their expectations and understanding of the project and what the approach would entail. Mid-level and junior members stated that this initial session is very informative and gives them clear direction when commencing the projects. They also indicated that this tool is useful when issues or problems arise during projects and they require senior guidance. A one on one discussion also works with the same purpose, to solve any issues which may come up during complex projects.

A senior participant from Group A commented that, *"I find that using projects is practical for developing skill and knowledge sharing. For example, if we are working on a new project and if we have a junior or mid-level staff who does not have enough knowledge, I think the small workshop approach works well. At the beginning of a project, we will sit around and walk through the scoping comments, so sharing information around the project design. Then trying to set up a framework for the assessment which opens up a technical discussion on aspects of project process and approach which is good for people who are learning."*

Participants in Group B who work at other consulting companies and may not have access to senior technical assistance in the social discipline, rely on seniors within the broader environmental discipline or seniors within the company organogram structure for review of their work. Participants in Group C are the seniors in their practice so their requirement for senior review is expected to be low. As this group would work on project within a broader multi-disciplinary team, it is common to meet the project team on the outset of a project through a project initiation workshop. This allows all the specialists, project managers and reviewers to meet and gain a better understanding of the project, deliverables and timeframes.

Group C consultants would also be in a managerial position on projects and lead local in-country teams within the social impact assessment discipline. There is a certain level of capacity building which occurs on projects where these seniors have to train fieldworkers to collect social data and communities' issues through the data collection process. There is some sort of knowledge transfer to explain the principles of social impact assessment to people who are not part of the social science community of practice.

A response from a Group C participant is, *"If I think of a project, it would be a limited number of meetings, probably no more than three or four over the whole project. The inauguration of the project where we get information about the project. Then there would be a feedback meeting when we give in our reports or findings of our reports to compare with what the others had found. We have interaction there and then maybe a public meeting where I would meet the other guys on the project as well. So then you may find there was a final meeting after that but I would say usually three times where we'd meet."* This indicates minimal interaction with the project team during a usual project process. Thus, a limited opportunity to gain knowledge and experience through brainstorming or workshops as a type of learning mechanism.

This mechanism is also used frequently and when used, works well for the current consulting organisational structure, considering the project budget as well as the structure of the social impact assessment discipline. This mechanism, when available on projects, is the most interaction participants in Group C will have with other technical disciplines. For participants in Groups A and B,

the ability to have larger workshops is limited by a projects budget. However, informal brainstorming sessions and one on one chats do occur frequently amongst teams in the same office.

4.2.1.3 Self-Learning

The ability to learn from available reference material has been a mechanism all participants shared. This is generally driven by project work, where you encounter a situation in a project that may fall outside your expertise. If there is available time to do some research on the topic, practitioners would consider this before contacting another person. Especially if it is a policy issue which could be resolved by reviewing the guidelines and policies available on the IFC or World Bank websites.

There are also other projects which have published reports in the public domain and these can be accessed to provide reference or examples of topics which the consultant is not familiar with. As social impact assessment touches on various impacts which branch into their own management plans, a social scientist may not have experience with each and every management plan out there. By researching another's work on that topic, the practitioner can gain additional knowledge and apply that to their project. Sometimes, the practicality of these management plans requires project experience and then a more experienced practitioner in that topic can be consulted.

This technique was reported as general practice from all participants across the research groups however it falls outside the community of practice model. It is a powerful knowledge gaining mechanism for an individual but does not align with the group learning or learning through participation which is the cornerstone of the community of practice theory. This mechanism is considered the best tool for an individual to gain theoretical knowledge within the field of social impact assessment. Self-learning accompanied by participatory learning is considered the best combination of learning within this field of study. The limitation is available time to do adequate research but, in these cases, consultants put in the additional hours in order to improve their personal knowledge and position themselves to deliver a quality report.

4.2.2 Non-project Based Knowledge Sharing Mechanisms

4.2.2.1 Webinars and Technical Forums

Webinars are internet-based learning forums which are established for a selected group of people who are available online. They are a method of interactively disseminating information through a meeting, conference, recording, demonstration, training, or event. Most often, webinars are achieved by inviting participants to dial into a toll-free phone number and at the same time log onto a website so that they can see and hear the contents of the webinar. A webinar can also be recorded and referenced at a later time. This allows new participants to review the webinar as if they were actually in attendance (ReadyTalk, 2017).

Based on a ReadyTalk (2005) article accessed in October 2017, some reasons why webinars are so effective are:

- A webinar creates an opportunity for people to interact in a virtual space instead of giving a presentation in front of a group of people. There is a sense of reduced fear when interacting virtually.
- This is a chance for a group of people to voice their opinions, listen to each other, ask questions and feel comfortable knowing that others have the same concerns and curiosities.
- Webinars increase the ability for communication within a group of stakeholders and because of their affordability and user-friendly interface, they can be used more frequently. This increases the ability to share knowledge.

- A webinar is a great way to inform or launch a new idea, process or methodology to the rest of your peers within a particular field of study.
- Webinars create the platform in which employees can be trained through links to specific topics and materials that can be accessed and shared.
- By using webinars, everyone in your company can be reached without having to travel, or making participants travel to you.
- Webinars are a tool that can connect individuals based around the world without the need to travel. This becomes a cost effective tool for communication and networking within a company (ReadyTalk, 2017).

Webinars are mainly targeted at specialists within the same company and are topical. Based on the limitation to share confidential knowledge on projects, webinars are a tool for members of global companies to share new experiences or learnings from projects. In Group A, the global company has established online groups called technical communities or forums where members from across the globe can interact. These technical forums are connected via the Microsoft 360 Office software and is structured based on the technical discipline. It acts as a platform to share experiences or communicate issues and questions to the broader community.

Participants in Group A indicated that mainly seniors utilise this technical forum network. Previously there were more frequent online calls which included the social technical community and these were set up to discuss relevant topics to the discipline at that time. At the time this tool was utilised, the company had assigned a designated person to manage and set up the online meetings. When the company went through global retrenchments, the role for arranging these technical forums fell away as the person tasked with the role left. It has not been reassigned since and group discussions also fell away unless they were required for a project. Group A participants feel that it would be good to revive these technical communities once again. However, the seniors indicated that if they are tasked with the role of driving these forums, they would need to see some decrease in their chargeable time in order to spend non-chargeable time on the knowledge sharing aspect of the community.

Participants in Group B don't have technical communities as part of their organisations but are linked to the small network of social scientists within their companies via the normal mechanisms of communication like telephone calls, WhatsApp groups and emails. Webinars are held but these are infrequent and sometimes the topic is much broader than social impact assessment related themes. This group also mentioned the use of public online forums such as the Social Impact Assessment Hub website and LinkedIn for social scientists to post their questions and receive answers from other consultants in the field.

Group C participants are independent and may be invited to webinars from their global network of contacts which they have developed over their years working in the industry. They also attend conferences more frequently than any other group as this is the opportunity to network and interact with other specialists and clients in the industry. They also find the online discussion groups quite useful. A participant stated that, *"You learn from their experience where they have done projects or dealt with particular challenges. These guys write on the blogs from all over the globe so it is really international experience or advice that you get from there. Also helps you realise that the problems you have in your country are not necessarily unique to that country. A lot of problems are similar in other projects in other parts of the world."*

Webinars are useful for technical training or for presentations of case studies outside the confines of company circles. This mechanism has the ability to bring a larger network of social scientists

together for learning and sharing sessions. A webinar can be structured like an online conference, presenting papers or case studies that are publicly available. It is a much cheaper option to share information than conferences but it still relies on members using non-chargeable time to attend. Most scientists make time for these learning sessions if the topic is relevant and it is important to make these sessions structured and productive.

The existing technical forum mechanism which the Group A company has installed with their employees was said to be a good tool for gaining information from the company's social community. It was also reported that there has been a high turnaround of staff in recent years and the social scientists are not necessarily aware of the other members of the community. It was suggested that the technical forum be a platform to introduce team members and their areas of expertise to the wider global community of social scientists in Group A.

The use of technical forums or communities internally at global consulting companies was indicated as being beneficial for keeping the communication avenues open between the distributed social scientists within a company. Having access to internal technical forums meant that everyone in the community was aware of the work being done in other offices and could get to know the team members from across the globe. This form of communication was used more regularly in the past for the participants in Group A who worked at the same consulting firm.

This mechanism of interaction is generally an internal company tool as it is based on the communication software (Microsoft Office 360) installed by the company and the projects which are discussed are confidential to the company and a specific client. An external example of this digital mechanism would be a webinar forum which could be logged onto by individuals from other companies around the world. However, for the purposes of this research, the internal technical forum tool used by Group A will be discussed.

Some offices had knowledge sharing sessions over lunch time where there would be a presentation from one of the disciplines in that office. The purpose of these sessions was to create a forum where specialists could inform other employees of the company about their specific discipline. These forums were an excellent tool for other specialists to learn about another field and how it would relate to their own field of expertise.

Participants in Group A indicated that there used to be online calls where the social technical discipline across the globe would communicate their work load and projects. These were calls held mainly with senior members of the global office teams and were not as frequent as the separate regional communication. At the time, there was a designated person who managed this group and drove communication and scheduling of these calls once a financial quarter or every six months depending on availability. It was reported that the company had designated this person and allowed them a lower annual target in order to accommodate the additional administration the role came with.

Amongst the Canadian Offices in Group A, there was a similar conference call system. A participant stated their experience with these conference calls and why they felt it didn't work. *"Our Canadian offices used to have bimonthly conference calls which were well organised and minuted. They had a good representation of scientists and project managers across the country (about 12 people). This forum was more informative rather than used to transfer technical knowledge. The face to face interaction is a better form of exchange for discussing technical aspects. I am more comfortable with exchanges between people rather than on group calls with people I don't know. The large forum calls make it difficult to place a voice to a name especially if the person is not known to you. These calls*

weren't sufficient in sharing knowledge but rather a discussion on what the other teams are working on and the availability to share resources. When the lead organiser for the calls left the company, there was no one who volunteered to take over so the calls fell away."

Seniors have filled the role but it is difficult because they still have to meet their annual targets which means the organising of the group takes effort and time without a real value add. This has meant that technical discussions have taken a lower priority. It became a common observation from mid-level and junior Group A participants that the use of a technical community forum would be beneficial to them as they do not get enough exposure to the global team of social scientists or even other social scientists outside of their offices.

A senior scientist from Group A indicated that, *"I think we have a technical community culture here at the company. We (junior, mid-level and senior) are all involved but we have not taken advantage of that. I see the technical communities are fairly loose in how people want to structure them and there are some accountability mechanisms but we need to formalise the technical community more. Maybe if we see that a collective global team is worth committing to and by investing in that commitment we are going to truly help develop and grow our technical skills and people. Generally, for practitioners, we each have our own focus and objectives from our careers. Some members are keen on connecting globally because working together across regions and project provides more exposure in the field. Some practitioners are happy just focussing on really local projects so it is important that their objectives to develop knowledge and skills base is very geographically focussed."*

Another limitation to technical calls is trying to arrange them with the different time zones of people across the globe. The experience of a senior practitioner indicated that, *"We have always been challenged to find regular times for social practitioners globally to meet and talk. Part of the reason is the huge differences in time zones and people are busy. So, whenever we have had regular calls arranged, you get maybe half of the people showing up. I don't know what to do to improve knowledge transfer except that I'm a big fan of people working together on projects."*

Inevitably it has been geographical limitations to technical forums and calls which forces some people to engage in this at inconvenient times (out of work hours), so even though you arrange a call and invite all the members, there is still a poor attendance. This also speaks to the commitment of members within the community and the driving force of a designated leader to push this mechanism. If the technical calls are well structured and engage members in active discussions beneficial to their knowledge growth, more members would feel encouraged to participate.

4.2.2.2 Conferences

In terms of the transfer of learning for the purposes of progressing the social impact assessment discipline, there are forums, symposiums and conferences which allow for more technical knowledge sharing within the broader specialist global network. There are many conferences available but seldom do they speak specifically to the topic of social impact assessment. The global organisation, International Association for Impact Assessments (IAIA) regulates annual conferences and symposiums on various topics related to impact assessment. The World Bank and International Finance Corporation (IFC) also hold global forums to discuss topics relevant to their policies and guidelines. These conferences become costly as they could be at various locations globally and as a social scientist working in a global company or as an independent consultant, funds would have to be found by the individual to attend the conferences.

A Group C participant opinion on conferences was, *"I do find them useful. But I think in general, and this is largely based on the papers that I read coming out of IAIA is that they are not about*

developing a consistent practise. And I can say that even about the guideline for social impact assessment from the IAIA which came about a year and a half ago. It is not something you could hand to a consultant like I was ten years ago and say this is how you do social impact assessment. In other words, it has theory that is useful and provides parameters but it does not actually provide a methodology. I don't think it is sufficient and I certainly don't see that coming out of the publications, but that is another big reason to go to IAIA this year, to see if I am missing something that happens face to face, that I don't receive or pick up in their written publications."

Group A participants had differing views, based on the seniors, mid-level and junior's perspectives. If you found a conference that you would like to attend, you would have to provide strong motivation to attend. The mid-level members feel conferences would benefit their experience and provide an opportunity for them to learn more on the specific topic and they would like to attend conferences. However, they feel they are not at a senior level which would allow them to be sent on a conference by the company. It is perceived that conferences are more for the senior members. This is also felt from the junior members who had not even considered they could have that opportunity within the company.

A mid-level participant of Group A indicated that, *"Often times we don't have the budget to send people of my level to conferences unless you are presenting. I have not had many opportunities that way nor do I think the industry has a well-defined network here to hold technical conferences where impact assessment or social impact assessment is the main topic. The opportunities are fairly minimal because it's mostly mining stuff."*

A senior practitioner from Group A stated that, *"Approval to attend conferences from the company depends on the marketing opportunities and the clients that will be present. If I attend a mining conference, there are some interesting papers that are presented but our primary purpose for going is to meet clients and to let them know what we do. Anything you learn technically is secondary. I would also say that people go to the IAIA conferences in search of discipline leads who could be recruited to the company and to identify potential sub-consultants to work with. In my experience, the focus on technical is not really there because it is not supported. I do not go to anthropological meetings or conferences as they are very technical and academic and, in my experience, it is not the company's priority."*

A junior member of Group A indicated that, *"I would like to attend a conference, not to present yet because I have never been exposed to that. I think that it is internal budget constraints at the company that doesn't allow people to attend a conference. There is no just attending, you have to present otherwise other people will get to go."*

From a company's perspective, the resources to attend would not just be the cost of the conference and travel but also the cost of the person attending not being able to bill the hours during that time and generate revenue. There may be a training budget available at the company but this is usually allocated per division of the company and are generally limited. For example, if one person wants to attend an overseas conference (high cost) in a division and it would utilise more than half of the training budget, then there will be limited money available for any other members of the division to receive training that year. This is why conference attendance has to be heavily motivated and approved by division and business unit managers.

The Group B participants found conferences to be useful as long as they are aligned to the topics relevant to your field of expertise. Choosing the right conferences is important and there must be some value gained from the topic and papers presented. A Group B senior participant highlighted

this in his comment, *"We need to separate between two things. The one is the value and the other is the practicality of conferences. The most valuable interaction you will find is having conferences and seminars where you can have papers presented and can have practitioners mingle, network, discuss key issues and ask questions. These are where we see the most leaps of technical development within the field. The practical concern is the expense. Most practitioners don't have the funds or the time to attend these."*

The main response from Group C participants is once again the expense and time taken out of their work commitments in order to attend conferences. These independent consultants feel the revenue pressure more acutely as they are sole practitioners and working on projects without another social scientist to cover the workload to free them up for conference attendance. The other aspect is that as seniors they don't feel that the available conferences add sufficient value to the technical field.

A Group C participant commented that, *"No. I think, that they are not adequate. They are there and you can ask questions and sometimes people will help you. But in general, there is a pressure on, and because we are consultants and not academics, and learning is not necessarily highly prioritised as it might be in the academic world. I don't think that there is as much of a value on sharing mistakes or challenges. Consultants are pressured to explain that they can do everything so that learning dynamic of saying that this has been a real challenge and how do I solve it, is not something paraded in the forums and the mediums I communicate on. I will give you an appropriate example of that is, I think socio-economic baselines. I think these are generally very weak in most of the impact assessments I have seen and even ones that I have worked on. As a tool, as a building block, they are not done very well consistently. But I very rarely see anybody talking about how to improve them, or how to make them more effective or valuable to the overall purpose, which is to do a good impact assessment and good impact management planning. Almost every practitioner I know says that the baselines they receive or do, are very tedious or not very relevant and I think that is a big challenge but I can't find a forum where people talk about how to improve upon them which could be my fault, not necessarily criticising other people, but that is an example of a consistent problem."*

Conferences remain the best mechanism to interact with the larger international network of social scientists. Conferences specifically relevant for social impact assessment practitioners creates a good platform to share recent a breakthrough in approach and implementation milestones which are learning experiences for other practitioners. My own personal experience at an international conference broadened my understanding of the types of projects out there and how complex the social environment can be when working in different parts of the world. I was also able to experience presenting my own work at such a conference which furthered my growth and shared learning experience.

Conferences have been indicated across the research groups as the best mechanism to interact with the broader social scientist community from other companies and across the globe. Participants at different stages of their careers had differing perspectives on the benefits and limitations of conferences. Conferences are broadly themed and there may not be a specific conference which discusses social impact topics. They are scoped generally and may only provide a brief look at social aspects within a broader context.

A senior participant from Group A stated that, *"As a senior, I don't learn many things anymore at conferences but it is more as a business development approach. Depending on the focus, we send the seniors to these conferences but in terms of transferring knowledge, if we want the junior or mid-levels to know more about how to do things, I think we should focus more on sending them."*

The value of conferences as a mechanism for knowledge sharing is beneficial is focussed on the topics of social aspects related to impact assessment. For example, in-migration, land acquisition, loss of access to water, farming and hunting areas. Also included are broader areas like human rights issues, communities' safety and security from the presence of the development. These are complex issues and affect each project area in different ways. Learning skills on how to unpack these issues, how to formulate an approach to assess these on various projects and how to report on it are things a practitioner would gain value from. However, conference material is often not as specific as practitioners require.

If there are presentations of papers at conferences which speak to specific social aspects at a conference then it is useful for junior and mid-level practitioners to gain some value from the knowledge shared. However, the broader topics and the inter-relationship of how social components would fit into a bigger context becomes an environment where more experienced social practitioners can operate in. Therefore, some seniors feel that they may pick up some useful connections both through technical material and through networking with other professions. Other seniors indicated that they may not learn anything new but the opportunity to network and remain in contact with other social scientists makes conferences useful from an interaction perspective.

In recent years with the context of the global economy, the ability to attend conferences as an employee of a consultancy is limited by the financial constraints of the company. It has become a luxury to send staff to a conference especially if those staff members all from one group. In the instances where this does happen, very strong motivation has to be given in order to gain management approval. Generally, for seniors it is relevant to for potential networking and business opportunities; where as a good motivation for a mid-level scientist is if your paper has been accepted at a conference and you have the support of your direct senior but location of the conference and the cost to get there is still a limitation. Juniors are not even considered, however his is more to do with their own lack of confidence in their knowledge base rather than the restrictions of the company.

Another senior practitioner stated, *"Approval to attend a conference at the company depends on the marketing opportunities and the clients that will be present. If I attend a conference, there may be interesting papers presented but our primary purpose is to meet clients and to let them know what we do. Anything you learn from a technical perspective is secondary. In my experience the focus on technical is not really there because it is not supported."*

Juniors within a company do not have exposure to conferences and training courses which would enhance their knowledge. This is due to lack of money within consultancies to send many people to the same conference. Mid-level to senior people are given this opportunity and it is mainly for a business development platform rather than knowledge sharing. Conferences have only been attended recently by people who presented a topic relevant to their discipline.

Even though conferences are the best platform to meet other social science professionals and to network within a global community, there are more limitations to attending compared to the value gained from them. The question arises that would it be more beneficial as a knowledge sharing mechanism to send more mid-level and junior members to further their growth in the field as most seniors indicated the conferences are placed at a level they are already familiar with.

4.2.2.3 Mentorship Roles

Based on the organisational structure of the company, the senior review process aligns seniors with mid-level and junior members into a relationship which can be one of potential technical mentors.

Consultancy companies do have mentorship policies in house, where employees can choose their own mentors for career growth as well as technical growth. This was reported as a sound mechanism in theory but became lacking through application within the organisations.

Mentorship is also dependent on the individuals. Some senior practitioners have the natural characteristics of mentors and imparting knowledge and teaching come easily, for others it is not that easy. The senior review process in global companies offers juniors and mid-level scientists the avenue for mentorship even though it may not be a formal mentorship. Seniors do take on an advisory and guiding role on projects when there are mid-level and junior staff who would generate the reports.

A Group B participant who had worked at various global companies commented that, *"I have not officially (had mentors). I mean, I had managers and most of the managers I worked with were quite instrumental in my professional growth. Continually working with senior members of the team who are at the cutting edge of the field. So not formal mentorship but through the quality control process of document review, you end up learning a lot more. Mostly through written comments on reports, also electronic comments and that is usually followed up with a face to face discussion, where I could ask questions and understand the reasoning behind the comments. That is how most of it is done, written comments followed by a discussion."*

Group A participants also utilise the senior review structure as an avenue for senior mentorship and guidance on projects but participants stated that it was not formally structured. The relationship with seniors is generally open and if you have any questions they are willing to answer and assist you where needed. The limitation comes from the large global company structure where seniors have other responsibilities like project work, travel, management meetings and client meetings which makes their schedules very busy and sometimes they become inaccessible to the mid-level and junior staff members. That is when the electronic comments on report reviews becomes the mechanism for transferring skills and experience.

Group C participants and seniors in the field but continue to learn and grow through interactions with their peers. There is no formal mentorship with this group although they act as mentors to less experienced project team members where required on projects.

Technical growth through mentorship is not structured but rather an informal process between seniors, mid-level and junior scientists. This mechanism is reported to be another practical method for the work environment. Mentoring goes hand in hand with on the job training and learning through project work. It also creates different expectations amongst juniors, mid-level and seniors within Group A, B and C participants.

It was evident from across research Group A and B that junior and mid-level social scientists thought that there was some level of mentorship which they receive in the current setting of the company's they worked at but, they could not distinguish if it differed from the senior review structure of the organisation. In most cases it is the same line management, based on the company's organisational structure that the senior who reviews your work would also loosely be your mentor, as they were the person you would have the most interaction with on projects and be able to grow your experience.

From a senior scientist perspective, the mentorship takes on a different tone as they are already experienced professionals. Some seniors indicated that they either had a mentor through the growth of their careers and now they interact with other seniors to gain knowledge in other areas of

the social discipline where they may not have a lot of experience. This interaction is project driven so if there is no need to get another opinion, seniors in Group C go about their work independently.

The limitations with mentorship where it is aligned with the senior review process will be similar. Access to the senior scientist may be limited based on their schedule as there is more demand on their time with issues not always related to project work. Seniors will make time for the senior review process as it is mandatory for best practice but the ability to have a further discussion around review comments or aspects of the reports which are technical becomes limited. A Group A mid-level scientist, *"When things (at work) get really busy, that is when the knowledge transfer diminishes but that is also when you need it the most in some ways."*

Group B participants had a good mentorship system in their relative companies. They commented that it was more than adequate even if it was not a formal system. The mid-level and junior participants in Group B were satisfied with the level of mentorship they received and interestingly they expressed how lucky they were to have such relationships within their respective companies. This may be an indication that their previous experience in the industry left them unsatisfied with their access to proper mentorship.

Several of the Group B participants and one of the seniors in Group C, have specialized further as resettlement specialists within the social science discipline. This specialisation can only be learnt through on the job training and with an experienced mentor. Resettlement entails relocating project affected communities who have been displaced by the relevant project. The resettlement planning process is governed by the International Finance Corporation (IFC) Performance Standard 5 and the World Bank Standards on involuntary resettlement. There are further best practice guidelines on how to undertake a resettlement planning process which is adhered to by clients and consultants worldwide. Resettlement is a complex and costly procedure and deals with community loss and asset replacement. It is a process which continues for approximately two to three years based on the project and often demands many resources from environmental, social and construction engineering consultants. Being experienced in this process is a specialised skill which entails being involved with projects of this nature during your career.

A Group B participant who is specialising in resettlement planning commented on how she is learning and gaining knowledge in this field. *"I think the majority of it has been mentoring. My previous manager did a lot of work with me to make sure I understood what to do and why we are doing it. He also put us in the position of doing our own research so we read lots of papers. I had the opportunity to work with another senior practitioner who is one of the guys that are credited in the Handbook for Resettlement. He would say that this is the way we are going to do our livelihood programme and took the time to explain. I gained knowledge from the review process I went through with another senior specialist who was the lead social consultant for the IFC for many years, he made comments and took the time to explain the corrections. Through these discussions, you get to learn a lot because they took the time to teach you. Then there is also learning through making mistakes, which happens quite often."*

Adequate and valuable mentorship occurs when seniors are willing to take the time and teach the newer practitioners. Passing down information, knowledge and lessons learnt in their experiences are valuable avenues to grow the next generation of practitioners. This mechanism for growth in the field is a beneficial tool which is practical for organisations as it fits within their existing hierarchal organisational structure but is still very underutilised.

4.3 Chapter Four Summary

In this chapter we discussed what constitutes the social impact assessment community from the research participants and how they interact with each other to answers the first research question. The social impact assessment community can be defined as a community of practice as members who engage in common ideas, approaches and technical knowledge, related to the development and implementation of social impact and management strategies. This professional group of practitioners develop their knowledge through social relationships and participatory learning which aligns with Lave and Wenger's (1991) theory of communities of practice.

Lave and Wenger (1991) suggested that most of the learning for practitioners occurs in social relationships at the workplace rather than in a classroom setting, a concept known as 'situated learning' (Lave & Wenger, 1991). Social impact assessment practitioners naturally formed their own community as the technical discipline established and matured. They generated their own knowledge base through the formulation of guidelines and policies to outline the methodologies, approaches and tools to assess social impacts and to recommend appropriate management strategies for projects.

Wenger (1998) listed what he identified as the characteristics of communities of practice. I have compared these characteristics with the features found among the social impact assessment practitioners to show their alignment. The close resemblance of the social practitioner group with communities of practice illustrated in Table 4 below indicates that the theory can be applied to this technical group of professionals.

Table 4: Characteristics of communities of practice and how it is applied to the group of social practitioners (Wenger, 1998a)

Characteristics of Communities of Practice stated by (Wenger 1998, page 125, 126):	**Features of Social Practitioners from my own observations.**
"Sustained mutual relationships, harmonious or conflicting.	Frequent interactions with members of the same professional group.
Shared ways of engaging in doing things together.	Working on projects together as a team and utilising the same methodological framework of the SIA process.
The rapid flow of information and propagation of innovation.	Knowledge flow between social practitioners through frequent interactions on projects.
Absence of introductory preambles as if conversations and interactions were merely the continuation of an on-going process.	Knowledge of the project context and the SIA process means that practitioners can lead into discussions of problems and potential resolutions.
Very quick set up of a problem to be discussed.	Presenting a project context to other social practitioners for input into the process.
Substantial overlap in participants' descriptions of who belongs within the community.	Social practitioners can identify themselves amongst other technical disciplines generally by introducing themselves as social practitioners or social scientists to the project team.
Knowing what others know, knowing what they can do, and how they can contribute to an enterprise.	Social practitioners understand all the impact variables of a project even outside of the social ambit and can therefore identify their place as well as other specialists within a project team.
The ability to assess the appropriateness of actions and products.	The SIA process entails the ability to assess actions from the project and potential impacts

	of those actions. Practitioners should have this ability or are learning this knowledge through their work with senior practitioners.
Specific tools, representations and other artefacts.	Social impact assessment guidelines
Local lore, shared stories, inside jokes, knowing together.	Social practitioners share stories from projects they have worked on where there were learnings from the process they implemented.
Jargon and shortcuts to communication as well as the ease of producing new ones.	Practitioners have site specific, project specific and discipline specific jargon which they use to communicate amongst themselves.
Certain styles recognised as displaying membership.	Social impact assessments can have different styles as the process framework is not prescriptive. Practitioners adapt the process to the project but it is still recognisable as an SIA process.
A shared discourse reflecting a certain perspective on the world."	The social impact assessment process is the shared discourse amongst practitioners as well as the finer details of that process.

Social impact assessment practitioners identify themselves based on this acquired knowledge and set of skills which are learnt through years of experience working within the technical discipline. Even though there is an academic course available to learn the basics of social impact assessment, many practitioners feel that it is inadequate to equip one with the necessary skills to manage a social impact assessment process on a project without senior guidance and assistance. Individuals enter the discipline and grow their experience based on this knowledge transfer which can be gained through the various mechanisms discussed. Knowledge sharing within the social impact assessment field has evolved from its inception to the current understanding within the field today. Practitioners were instrumental in developing this knowledge and providing guidelines and frameworks within this field.

There is an existing structure of learning at environmental consultancy companies and it is suitable for sharing knowledge on the technical discipline of social impact assessment. The main method of the senior review process, brainstorming sessions and mentorship are the most practical as it is accommodated within the organisational hierarchal structure. This responds to the second research question and discusses each of these mechanisms and the application by the research participant groups. The use of the senior review process, project workshops and self-learning mechanisms can be installed within a project process and budget. Other mechanisms such as technical forums, conferences and mentorship are available at consulting organisations if the situation is favourable. This means that people have to be willing to drive these mechanisms in order for them to be successful in knowledge transfer.

5 Learning and Growth Challenges within the Social Practitioner Community

The challenges facing social impact assessment practitioners in the industry are broader than just the mechanisms for growth and learning within the discipline. There are challenges derived from the consulting company and then the broader industry challenges which poses limitations on growing the knowledge within the social impact assessment discipline.

5.1 Company Challenges

In global companies, the biggest challenge is maintaining a connected social scientist community wherever individuals are located in the world. This has its challenges such as knowing who the community are and their experience as well as arranging meetings across various time zones. Interaction within the global community is limited by geographic location.

Participants in Group A had this challenge with the social science community being distributed over different offices in Canada, South Africa and Australia. As most of the social scientists were spread across Canada with a good distribution of seniors, mid-level and junior practitioners, it is a challenge to maintain communication amongst the offices within the Canadian region. The Canadian mid-level practitioners indicated that they may get an opportunity to work with other practitioners in the country but have no interaction within the global community. Juniors in Canada indicated that they rarely get a chance to work with other offices in Canada and this depends on the available project work. If the seniors are busy and require assistance from juniors at other offices then those juniors get that exposure. Junior practitioners have not worked or been exposed to communication with the broader global community.

The lack of access or exposure for mid-level and juniors to the global community within the organisation is also a challenge. Mid-level and junior staff tend to interact mainly within their regional offices and the seniors act as gatekeepers of the project work and knowledge sharing across the globe. This is largely based on the way the organisation is structured and the responsibilities of seniors are to grow the business so project distribution and resource management goes through them.

There has been interest shown through this research in knowing all the social scientists within the company and having an idea of their experience in the different aspects of social science. It was expressed that a global technical community forum for all the social scientists in Group A be utilised more often. However, it requires the individual's participation and someone to drive the discussions. This remains a challenge at a global level to unite the teams but these technical calls or discussions seem to occur more often within regions or in offices face to face with senior reviewers.

A mid-level Group A participant stated that, *"How actively involved can people be when we've got such pressure to be chargeable and when we have so much work on the go. I would love to be more involved in technical communities but like, I don't know where you're supposed to find the time during the work day. I love the idea and I like that there is a way to reach out to practitioners globally, I think that is important, unfortunately there is not enough time to maximise the value that could be there. I do find the most effective way to transfer knowledge is through projects because then you have an operational and chargeable means to speak and gain knowledge from other practitioners. I think realistically, that's the most effective way it can happen."*

In the recent years when the company has been under pressure to meet revenue targets and the priority has been project work, it has been a challenge to implement any knowledge sharing

mechanisms which detract from business goals. Attendance at conferences and external training are considered a luxury and only approved if highly motivated by managers and division leaders. Practitioners focus is on project work and this focus means that less time and energy is placed on participating in technical forums or technical growth. Thus, financial constraints in the company due to global economic downturn has impacted on conventional knowledge transfer mechanisms.

Due to global retrenchments, there has been a loss of staff in the social discipline across the globe and the work has to be distributed to those who have remained. This added workload and pressure on individuals means practitioners work long hours and are not motivated to grow the knowledge within the field but rather to push out the required deliverables for projects as fast as they can but still with good quality. This focus on revenue targets and the loss of staff in key management of knowledge roles has impacted the flow and growth of knowledge within the field. With this focus, the global community has become more isolated working more within their regional silos than on global projects.

Global organisations are structured in such a way that teams of social scientists operate as silos within their spatial locations. Even with the modern technology of skype for business calls and instant messages, project work often does not get shared across operation units of the company. This management structure in based on financial goals where global regional units rely on the revenue from the work they can bring in within that region. Each region has targets they must meet per annum and this promotes secular mind sets to sharing of information across these regions. Considering that the social scientists want to have a global community within the company, this structure makes knowledge sharing very difficult and global communication mostly occurs by the senior leads across the regions.

5.2 Industry Challenges

Consulting companies within the broader social assessment industry undergo the same challenge of work pressure versus technical growth and integration of local communities to the global community. The priority on business goals detracting from external formal training is the same at other consulting companies. A senior participant in Group A commented that most social scientists who start working in the industry come from a fairly well-educated background so the level of external formal training which they might need is often not necessary. Formal training is not very useful or practical within the consulting business model where other alternatives such as senior review and more formal mentoring are mechanisms more suited to the industry.

With financial constraints on projects, the social process on a project has to be undertaken succinctly within budget which means fewer resources involved in projects. A Group B participant indicated how this becomes a challenge, *"The biggest challenge to knowledge transfer is budgets. Ultimately nothing is free so if you need advice on projects, you need to pay for it because everyone has constraints on their time and individual chargeable targets. This stifles the opportunity for shared learning and shared growth. Whatever you do in terms of knowledge transfer to external practitioners outside of your immediate company is very constrained by budgets. You have to do it effectively in your own time. So that is an issue everyone faces in the industry, everybody's time is valuable and everyone wants to get paid for their time. Obviously, you have your volunteers and I think there is a willingness from everyone to jump in and help within reason. It is difficult when you are in an industry, working long hours and then you need to still help someone else for free, for the love of the job or love of the community. There is a need for philanthropy which is very difficult to find in the industry at the moment."*

There is another level of social practitioner in the industry who consults to the World Bank and IFC and operates within the ambit of technical growth who are leading practitioners in developing new guidelines and updating existing guidelines on social aspects of development projects. These social scientists are seniors in the field with many years of experience and a drive to improve the technical aspects of social impact assessment. They are also the individuals who lead technical forum discussions at conferences around the globe. These consultants operate at a global level and network with other industry leaders to inform other fields about social impact assessment. They are the leaders in developing the technical field and disseminating this knowledge to the social practitioners operating within consulting companies.

Challenges within this global level of social consultancy is the ability to make best practice guidelines applicable and relevant for conducting processes at the project level. Being exposed to diverse projects allows practitioners to broaden their knowledge and experience base, and promotes the evolution of the social impact assessment discipline. However, due to the tight resources of social practitioners at global consulting companies and the available project work that can be tendered for, the standard type of projects is usually available. Competitiveness among global consultancy companies is evident in the industry and many companies rely on the expertise of their staff to win project work. This becomes a strong motivator for implementing a communities of practice model which would create diverse knowledge areas within specialist fields.

Another challenge of social scientists impacting the broader industry is the ability to inform other disciplines about social components required for a project and exactly what they entail. Most environmental consultants or project managers feel they understand what is required from the social specialists on a project and they do not place much emphasis on it. However, the social component of a project, if not undertaken appropriately, has the influence to stop an entire project. Clients are starting to see the importance of managing the social component and having good relations with their project affected communities so as to mitigate any unhappiness generated by their project.

A comment from a mid-level Group A participant indicated that, *"I think one of the biggest challenges is to have project managers and clients understand the differences from social requirements to the environmental sciences. We do need to have our own methods and flexibility because we are dealing with people and we don't fit into such pathways which are applicable to mainstream science. We have to change our methods to really focus on what the project issues are . We sometimes get stuck in standard methods but not looking at issues and effects and what mitigations and solutions we can develop with clients. We are also pretty confined to documentation that fits with their expectations."*

Group B participants also find the same challenges working with other specialists in the industry. A mid-level Group B participant indicated that, "*The biggest challenge is other specialists or specialisations lack of knowledge about social sciences and the impact that social aspects has on their scope of work in a project."*

The consulting industry is naturally set up as a competitive environment. Consulting companies would tender for the same projects and there is information which is critical to give a company a competitive edge. The ability to win projects is key in the business and companies are adapting to the changing economy and availability of high paying projects. With the global economic decline in recent years, companies in the industry have become increasingly competitive and sharing information across companies is not encouraged. This limits the flow of knowledge from a social practitioner perspective as you are sometimes not allowed to discuss technical learnings or

experiences across companies due to confidentiality agreements. Essentially knowledge is transferred through shared learnings on projects and the ability to share these case studies are hampered by confidentiality agreements between the clients and the consulting companies.

5.3 Chapter Five Summary

This chapter discussed the challenges experienced by SIA practitioners at a company level and potential issues which have been influenced by the situational context of the industry. The overarching factor which limits the existing mechanisms discussed in the previous chapter is availability of senior resources and the time and effort of members to participate in these learning mechanisms. This could be a reaction from the changes in the industry recently which has created a more competitive market for environmental companies and in turn has added pressure within companies to be more time and cost efficient.

In global companies, the biggest challenge is maintaining a connected social practitioner community wherever individuals are located in the world. The lack of access or exposure for mid-level and juniors to the global community within the organisation is also a challenge. This is largely based on the way the organisation is structured and the responsibilities of seniors are to grow the business so project distribution and resource management goes through them. In the recent years when companies have been under pressure to meet revenue targets and the priority has been project work, it has been a challenge to implement any knowledge sharing mechanisms which detract from business goals. Attendance at conferences and external training are considered a luxury and only approved if highly motivated.

At a global industry level, the biggest challenge is the competitive nature of environmental consulting companies to secure big projects. The project proposal and tendering process has been refined to give companies a competitive edge. Companies are striving to complete the same work they did in previous years in a more streamlined and cost-effective way. This has placed strain on the technical disciplines who are expected to complete the same amount of work for significantly reduced budgets. The pressure on billable targets and keeping projects within budgets are stressed throughout companies' right down to the individuals. Incentives for meeting targets are given and achieving business goals are awarded which further emphasises the priority on business development. Practitioners have to fit in knowledge sharing and growth of individuals within this broader business context which they find challenging.

6 Discussion

I began this research project by investigating the existing mechanisms of transferring knowledge within the social impact assessment community and if these can be improved by aligning these mechanisms to the communities of practice theory and to the structure of an environmental consulting company. In so doing, I introduced the group of social impact assessment practitioners and how they can be defined as a community of practice based on their interactions. I then presented the existing mechanisms of knowledge transfer within the environmental industry as well as a discussion into the various limitations of these mechanisms. I further went onto discuss the challenges social practitioners face in their companies and in the environmental consulting industry. In this chapter, I will revisit the research questions which are:

1. How the social impact assessment community is formed and the interactions within this community.
2. Types of learning mechanisms already existing within the workplace for social scientists working within impact assessment.
3. Current limitations and challenges to the existing knowledge sharing mechanisms.

I will also consider how this research may speak back to the broader literature on communities of practice in terms of its implementation in organisations and the value this research can add to the social impact assessment discipline. The importance of the community of practice theory is to create the ability to transfer knowledge to other social practitioners and assist in building their competence and capacity in undertaking social impact assessment processes.

6.1 How the social impact assessment community is formed and the interactions within this community.

The research investigated the community of social practitioners operating within the social impact assessment discipline in the environmental consulting industry and investigated whether their knowledge sharing preserves the technical development of the discipline of social impact assessment. Participants were interviewed and asked to share their perceptions of knowledge sharing mechanisms within their company and the global industry. The interactions between social practitioners within a company and with the broader community were also assessed. Participants shared what they felt were challenges with technical growth and knowledge transfer in their own situations. Their functional characteristics, ability to learn and grow within the discipline can be aligned to the community of practice learning theory.

The research participants could be categorised into three groups based on the context in which they operate. Group A was social practitioners who worked for one global consulting company and were distributed among offices in Canada, Africa and Australia. Group B were social practitioners who worked for other global environmental consulting firms and Group C were independent social consultants who work on a project by project basis for different companies. It was useful to categorise the research participants in groups as it showed that practitioners working within a larger organisation had more support from their fellow social scientists in their organisation than independent consultants, even though independent consultants are at a senior level and have a broader network within the larger global community of social impact assessment practitioners.

Based on the organisational structure and the nature of the specialised field of social impact assessment, practitioners naturally and intentionally formed communities of practice within their workplace. Although these professional groups are not termed communities of practice by the

respective organisations, they meet the criteria of communities stipulated by Wenger (1998) and can be defined as communities of practice. These characteristics which define them as communities of practice was presented and discussed in Table 4 referenced in Section 4.3.

Professional groups of social impact practitioners can be defined as communities of practice as they display the above characteristics and more importantly, there is a significant amount of social learning occurring within these groups. New members learn from more experienced senior members through frequent interaction or 'mutual engagement' on projects. This research focused on the smaller communities of practice within organisations but there is a larger social impact assessment community worldwide who operate at both project level and at an institutional level by designing guidelines and policies to be implemented across the world.

For this research study, Lave and Wenger's (1991) theory of learning as participation in a community of practice does occur within these smaller communities in a global organisation and through the development of knowledge at the decision-making level of social practitioners who consult to the World Bank and International Finance Institution (IFC). Growth and evolution of technical knowledge may occur within organisations but the ability to share this knowledge outside of the company is limited.

Communities of practice in the organisational setting of consulting firms share knowledge through the company structure and existing avenues of communication. They function as small pockets of technical staff across the global company but are limited in their interaction based on geographical distribution. This means their daily, or more frequent interaction, is within the office-based teams. In essence the social impact assessment community works within smaller communities of practice across the globe.

Teams of social practitioners operate within global consulting firms and they share the progression of technical knowledge associated with the social impact assessment (SIA) discipline. There is an unknown number of SIA practitioners working within this discipline and operating at different levels of knowledge and experience. This includes newcomers to the field and current members moving forward in terms of experience. Passing on knowledge and experience from the senior practitioners to the junior practitioners ensures the progression of the discipline. Members who are encouraged to develop new approaches and techniques contribute to the evolution of current knowledge by publishing papers or presenting at conferences.

The social impact assessment practitioners operate as a professional community who share their expertise and developed experience with clients who require their knowledge for development projects. There are no formal qualifications which determines who social impact practitioners are, so practitioners specialise in social impact assessment from other avenues such as environmental, economic and sociology. They grow their knowledge and skills through working on projects and gaining experience through senior members' guidance. Practitioners share their passion for working with communities and maintaining or improving the livelihoods of project affected people. Through interactions with other social practitioners, collective learning occurs which defines this research group as an informal community of practice.

The main type of interaction between practitioners is face to face and occurs within smaller office-based teams. Communication with practitioners at other offices and around the world within the company are through internal online telephone calls (Skype for business software), emails and sometimes project meetings at the respective project site. Frequent interaction occurs between seniors and the mid-level and junior members of their office-based teams. It is a hierarchal approach

based on the organisational structure of the consulting company. Senior team members act as gate keepers to the knowledge development and sharing. They manage the workload within their teams and are responsible for the career growth of their team members. Seniors also interact more frequently with other social practitioners at other global offices in the company.

Geographical location of social scientists creates a barrier to knowledge sharing as communication and interaction channels globally are usually only through senior members. During the course of this research it was evident that the social scientists in Group A who worked for the same company did not know the other members of the social impact assessment team globally. The data collection phase of this research provided a networking opportunity for members to communicate with me and learn about the work I did in South Africa. I initially contacted the senior members who then referred me to the members of their teams. Some of the mid-level and junior scientists did not know there were social scientists in South Africa in the company. Through my research I found that even though there are geographical boundaries, the interactions within office-based teams are strong. The ideal case for beneficial learning and achieving company targets is to have a mix of one or two seniors, one or two mid-level and one junior practitioner within a geographical office structure.

Practitioners working at the same organisation are involved with locally based projects and the seniors who have more experience, work on the high-profile international projects. This is the reason that seniors get more international exposure than less experienced practitioners. Project budgets and company structure maintain this channel of interaction which limits the use of communities of practice as a knowledge management tool through the global company. The small office-based communities still maintain their frequent interactions and build stronger relationships.

The social practitioners at consulting firms are already structured in an informal community of practice, based on the organisational structure of grouping technical disciplines together. There is existing knowledge transfer occurring as new members of these company teams have to learn from their peers and seniors in order to undertake their work within the team. In this research, this social learning has been linked to the community of practice theory which can be used to improve practitioner's capacity and career growth.

6.2 Types of learning mechanisms already existing within the workplace for social scientists working within impact assessment

The research identified the current types of mechanisms used by practitioners to share knowledge within their companies. The best mechanism, which worked well with the consulting organisational structure and the projects, was the senior review process. This process is in place for the quality control of project report deliverables but is also used as a corrective and learning process between senior and mid-level or senior and junior practitioners. This is in line with the line management structure of the organisation and is included in project budgets so it is commonly used.

The technical forums and webinars are also useful mechanisms for knowledge transfer to the broader community of social impact assessment practitioners across the globe. They serve as a platform for all members to network amongst other social practitioners in the company who are operating in global locations. As long as these forums or webinars are structured to specific content, relevant for social practitioners, and that it is guided by a designated coordinator, these mechanisms can work well for the consulting company. However, Ardichvili, Page and Wentling (2003) considered the barriers to sharing knowledge within a community of practice especially online where all the members are not known to each other. They consider that members shy away from online forums due to the lack of confidence of practitioners to contribute to a global discussion and

the lack of a built network among the other practitioners. This mechanism may then be better within companies where the practitioners have an established relationship.

Conferences are still the best mechanism for shared learning in the global community of social practitioners at all levels of the discipline. This includes seniors working as sole practitioners at project and policy levels and smaller community of practice members from consulting companies globally. This platform is where technical work and new discoveries in the field can be shared and explored through further research. As a mid-level scientist in this industry, my experience at an international conference gave me a different perspective on the work I do and renewed my passion for the discipline by seeing the work done by other leading members of the broader SIA community. Even though my research found that the cost of conferences is a limiting factor, it should still be explored as a mechanism to enhance the growth of mid-level and junior practitioners.

The use of mentorship as a mechanism of knowledge transfer is a more personal approach to learning and can be the most meaningful. This mechanism follows the apprenticeship model which Lave and Wenger (1991) utilised to develop the community of practice theory. A mentorship model built into the existing organisational structure of an environmental consulting firm is a powerful tool for personal growth and career development. By fitting within an existing structure, it does not require additional resources or cost from the company. This research identified that this mechanism is in place at companies, even if it is not done through a formal process, there are informal avenues of mentorship occurring within communities globally. Companies can be more active in formalising this process to ensure knowledge transfer and growth of new members within a community of practice. Individuals should also be more attentive in driving these relationships for the progression of the discipline.

Based on the perceptions of social practitioners, the existing mechanisms for knowledge sharing are adequate but each requires more commitment from the companies and individuals in order to enhance them and optimise their benefits. This is also the basis for sustaining successful communities of practice, maintaining the wiliness of individual members to participate in community learning and continue to energise and inspire each other in new areas of knowledge. Companies can explore and investigate their current mechanisms further to find ways of improving them or aligning them with more suited knowledge management strategies which meet their own objectives and current capacities.

6.3 Current limitations and challenges to the existing knowledge sharing mechanisms and how these can be resolved.

The limitations discussed earlier in this research are based on the current industry context which environmental companies are experiencing at the time of this research. This is a fluctuating trend with companies in this industry and at the moment the focus on achieving business goals and targets are prioritised. This filters down to the smaller communities of practice operating at consulting companies and influences the way their time is structured and how their projects are run.

According to the theory, communities of practice add value to companies in several important ways. They drive strategic growth, new business avenues, resolve challenges, transfer best practice, develop professional practices and assist companies in recruitment and retention of talent. Communities of practice are evolving and gaining traction in companies that manage knowledge (Wenger & Snyder, 2000). In the environmental consulting industry, the trade is technical knowledge and specialised opinions on environmental and social solutions for clients of development projects. The community of practice knowledge management model which Saint-Onge and Wallace (2003)

implemented could be applied to an environmental consulting company but the requirement for additional resources and time within the current climate may outweigh the potential benefits.

Particularly when environmental companies are operating with business models which have recently been adjusted to accommodate the reduced availability of work in the industry. Most international companies have restructured their organisations to streamline productivity and increase profit margins. This restructuring has been felt by all of the research participants across all the companies they work for and even the individual consultants have noticed a reduction in project workload. These changes have created a highly competitive industry where project budgets have been reduced for the same work which was previously quoted. With this evolving industry environment, the implementation of a community of practice knowledge management strategy may not be beneficial to consulting companies at this time.

There are existing mechanisms for knowledge transfer which are deemed to be adequate as a certain amount of knowledge transfer is still occurring. This may not be as fast as some individuals would like but, on the whole, the current mechanisms suffice for the purpose of knowledge progression in the discipline of social impact assessment. Even with the communities of practice model, the success of a community relies on the commitment and drive from the individual members to participate in the interactions of the community. Also, the current organisational hierarchy lends to knowledge transfer rather than reduces it. Having a set structure for senior review aids in knowledge transfer and creates avenues for mentorship.

All the mechanisms for knowledge transfer previously discussed have limitations associated with the current company and industry climate. However, this climate is fluctuating and there will be periods where the work pressure is less and therefore more accommodating for career growth priorities as it had happened in the past. The one aspect in which a challenging work environment does expose is the individual's ability to learn, is by being put into challenging project situations and having to resolve them with minimal guidance. This learning by "being thrown in the deep end" is a steep learning curve which can increase an individual's experience without any additional mechanisms. The basis of this learning is mainly through self-learning from the available literature and previous case studies.

The purpose of this research literature was to investigate how knowledge is produced, shared and developed within the social impact assessment community within the global environmental consulting industry. I discussed the use of existing mechanisms which are working adequately within the consulting context but these can be improved by individual companies in order to optimise mechanisms which work within their organisational context.

The research also showed that the social impact assessment practitioners' function as a community of practice with their shared repertoire of project experience and the use of specific jargon, tools, documents (international policy guidelines). In other words, the practice of social impact assessment is shared among members of the community. Therefore, the community of practice learning model which is discussed in the literature chapter of this research could be applied to these professionals in order to facilitate a more cohesive knowledge sharing process among the global SIA community.

However, the application of the community of practice model within the organisational context in which these professionals work, may not be relevant, due to the additional resources and time required to implement such a model. Knowledge transfer is already occurring without the benefits of the community of practice model and the requirements to maintain this model in the workplace may

outweigh the benefits at this time. In the future, when the environmental industry climate stabilises, a further look at implementing this model could be undertaken.

Also, when considering the company and industry limitation and barriers to sharing knowledge within the broader SIA community, it becomes more complex to implement community of practice on such a large scale of unknown practitioners. There have been no attempts to document or register SIA practitioners globally so we cannot identify the current global community members nor has there been any attempt to share knowledge on SIA and market global forums to the extent needed for a successful, functioning community of practice.

7 Insights from the Research

This research propagates that social impact assessment practitioners do operate as a community of practice within environmental consulting companies. This is true based on the investigation into how social practitioners form a professional group where learning occurs between senior, mid-level and junior practitioners. The interaction amongst social practitioners also relates to the dynamics of community of practice such as having mutual engagement or interaction on projects, joint enterprise through the relationship of social impact assessment teams working together at a company and the shared repertoire of the social impact assessment discipline.

Social practitioner communities in consulting companies, are formed by the organisational structure of the company, and do not emerge officially as communities of practice but are rather self-made by individual members seeking relevance in the discipline of social impact assessment. Individual practitioners further their understanding and application of social impact principles through the diverse projects in which they are involved. By doing so, they gain competence in this complex discipline and are able to build the capacity of other external role players involved in projects such as environmental specialists, government officials, private companies and project stakeholders.

The understanding that social impact assessment practitioners formed a natural community of practice at consultancy organisations makes me consider the options to sustain this community and improve the knowledge transfer which occurs naturally. My career was an example of learning through participation and knowledge transfer through this community. I developed my knowledge in social impact assessment through the mechanisms of senior review, mentorship, self-learning and conferences. I realised that I have gained a variety of experience and learning through the many mentors I have worked with over my career. I wanted to delve deeper into understanding how to build the capacity and knowledge of other social practitioners who are new to the discipline and are put in a position where they have to defend the necessity for the SIA process on projects. I have conducted this research to assess whether other practitioners in the social impact assessment discipline also experienced knowledge transfer and growth through their careers.

The research I have done in this thesis lays the groundwork for environmental consulting companies to consider their knowledge management strategies. Through the discussions with social impact assessment practitioners, I have highlighted some areas of concern for the growth and transfer of technical knowledge in social impact assessment. Even though these practitioners are normally a small group of specialists at a large company, they have concerns with the existing learning mechanisms and their perceptions explored in this research can be extrapolated into other technical disciplines at consultancy organisations. I have focussed on social practitioners but large consulting companies have technical groups of ecologists, hydrogeologists and engineers who all operate in their own specialised communities.

By viewing knowledge transfer and learning through the lens of the community of practice theory, this research establishes avenues for the use of this model at consulting companies. The community of practice model with the different stages of community of practice as described by Wenger, McDermott and Snyder (2002), discussed earlier, forms a useful tool to drive strategic growth, new business avenues, resolve challenges, transfer best practice, develop professional practices and assist companies in recruitment and retention of experts. For environmental companies it could be implemented to drive growth, open potential business avenues, alleviate challenges, assist in the transfer and development of professional practices. It can also aid in the recruitment and retention of valuable employees which is a challenge the industry is facing currently.

I used community of practice theory as a learning model for the social practitioner group as we naturally or instinctively formed a community of practice in the workplace as defined by Wenger (1998) and we experienced the type of social learning through participation as described by Lave and Wenger (1991). The literature review highlighted the benefits of community of practice in organisations. The organisational hierarchal structure at these companies unintentionally creates pockets of communities of practice but the function of these communities or the learning that occurs within them come from the drive of individual members. Members learn through the exposure they receive through project work and their interaction with senior members.

The limitation of applying the communities of practice theory to consulting companies is the time and resources required to sustain these communities. Roberts (2006) also suggests that maintaining communities of practice within business organisations that have an accelerating pace of change is difficult. Pace of change relates to restructuring and downsizing within the current business environment which is what most consulting firms have experienced in recent years. Roberts (2006) reiterates that there is a degree of trust and mutual understanding within communities which require time to develop (Roberts, 2006).

Consulting companies who are experiencing a reduction in project work results in restructuring within companies to be more cost efficient in the global industry. The demand on resources and time to implement the community of practice model at this stage in consulting companies would not be viable while companies are cutting away perceived unnecessary processes and positions. The implementation of community of practice would require a few dedicated resources (shared leadership within a community of practice model) to manage and facilitate frequent interaction among community members as well as identify gaps in key knowledge areas which require additional development and allocate resources to gain the experience and knowledge in these areas to bridge these gaps. The time needed for gaining additional knowledge by individual members who also have billable hour targets to achieve makes it difficult to adopt the theory at this stage.

The companies operating within the industry experience a high turnover of staff which also makes implementation of the community of practice model difficult. A successful community of practice is based on a strong bond of trust amongst its members which is built through frequent interactions over time. With the loss of existing members and the introduction of new members creating disruptions to the community, it becomes challenging to implement the community of practice theory within this context. However, the community of practice model should be considered to improve knowledge management when the industry stabilises and companies' focus returns to a balance between business targets and technical growth.

This research did describe social practitioners as a community of practice and as such their characteristics and principles align with the community of practice theory. Even though there are challenges to implement the community of practice theory in consulting companies at this time, based on this research, I have found that consulting companies can still make improvements to their existing knowledge transfer mechanisms to support the growth of their technical communities. The senior review process, mentorship model and self-learning process are the most practical mechanisms currently for knowledge transfer. This research proposes that the ideal case for beneficial learning through these existing mechanisms and achieving company targets through senior review and mentorship is to have a mix of one or two seniors, one or two mid-level and one junior practitioner within a geographical office structure.

Technical growth cannot be forced within a community of practice as Wenger and Snyder (2000) state that communities operate independently from management. This differs in consulting

companies as the seniors belong to a branch of the organisational management structure and they are instrumental in driving interactions within their offices, nationally and through international avenues of the company. The research participants felt that a senior member could drive the arrangement of learning sessions and the material to be discussed within the technical community. This aspect of one person managing frequent interactions and knowledge sharing mechanisms falls outside of the community of practice theory which speaks to a model of shared leadership and no fixed management structure. However, sustaining a community and the flow of communication and interaction is still incumbent on the individual members within the organisation's technical communities. There is a need to establish more frequent technical discussions with the company's broader network of social practitioners and not isolate geographically located practitioners.

As a social practitioner who is passionate about the continuance and evolution of the SIA discipline, I feel this research will add meaningfully to grow and sustain our technical community. I know that other practitioners feel the same way and will continue to network and share their experiences in order to build capacity and knowledge about social impact assessment to new members of the discipline as well as to other technical disciplines. This research also adds to the growing body of literature discussion on communities of practice as it looks at implementing a community of practice model within a consulting business model where time is money and fixed management structures breed efficiency. The value from aligning the community of practice theory with my group of research participants is the legitimisation of the learning processes occurring amongst social impact assessment practitioners. Through my study, I have shown that community of practice intrinsically exists within the environmental consulting industry. By maintaining these naturally formed communities of practice, consulting organisations can improve knowledge generation and transfer within the industry.

An important learning from this research is that geographical boundaries to knowledge sharing within global consulting companies are still prevalent and dissemination of knowledge pathways to other social practitioners at other offices within consulting companies has to be improved. The research participants are aware that this is a limitation to strengthening the knowledge base in companies and they proposed a designated leader to drive this networking. However, according to the traditional model of communities of practice in order to cultivate the existing community of social practitioners, leadership should be distributed in order to sustain the community's interaction.

Wenger, McDermott and Snyder (2002) also states that a mature community of practice often finds areas where it collectively needs to develop more knowledge. Identifying knowledge gaps can be a very healthy process. Some communities keep track of ongoing development areas and focus technical meetings, web sites or task teams on these topics. In this way, the community's ability to learn continually grows (Wenger et al., 2002). Social impact assessment practitioners are identifying knowledge gaps on a continuous basis but the articulation and discussion on these gaps are not widely distributed due to company and geographical boundaries. Many seniors within a consulting company will explore new knowledge areas within their company and on the projects where they have accessibility. There is still the challenge of stewarding knowledge over geographical locations within global consulting companies and among the global community of SIA practitioners.

This research focused specifically on the communities of social practitioners at global consulting companies whose main interface are impact assessments on projects. There is still the wider network of global social practitioners where some members interact with the development of guidelines and approaches to social impact assessment. This larger global community do not function as a community of practice as there is no platform where all members can interact. There are however, a small group of experts in the SIA discipline who are the thought leaders on

developing SIA guidelines and methodologies. They have published papers and books in the efforts to share this knowledge to the broader global community. They are continually investigating new knowledge areas and their focus is on the progression and evolution of the SIA discipline. This is noteworthy and this group validates the SIA practice and takes on the stewardship role of the global SIA community. However, the generation of this knowledge and its distribution lies in the hands of this self-declared group of individuals who in essence become gatekeepers to this knowledge.

Wenger, McDermott and Snyder (2002) state that "when communities of practice mature and enter the stage of stewardship, the focus of the community shifts from sharing tips and advice toward the broader goal of stewarding knowledge. One of the ways many communities take charge of their domain and follow a clear learning agenda is to commission project teams to explore a new topic area, create guidelines or identify different approaches to a practice. These teams usually report the results of their work to the community as a whole" (Wenger et al., 2002a, pg 111, 112). This stewarding of knowledge becomes difficult to achieve at the level of practitioners who formed the participants of my research but it is occurring at other areas of the discipline.

The findings from this research has identified that social impact assessment practitioners' function as a community of practice and that environmental consulting companies can support the cultivation of these communities by improving their existing mechanisms for knowledge transfer. This research has also created awareness of the discrepancy of sharing knowledge within consulting companies and with the broader global SIA community. Each comes with their own challenges but the main aspect to sustaining communities of social practitioners still requires individual members' commitment and drive to exact changes to ensure the sustainability of the technical social impact assessment community.

Currently, there have been no attempts to document or register SIA practitioners globally so we cannot identify the current global community members nor has there been any attempt to share knowledge on SIA and market global forums to the extent needed for a successful, functioning community of practice. In terms of future research, more investigation can be done into addressing the process of sharing knowledge within the broader SIA community and if knowledge generation and transfer can function with the community of practice principles.

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