



PART V: CONCLUSIONS

CHAPTER 7

CONCLUSION AND TOPICS FOR FUTHER RESEARCH

7.1 CONCLUSION

Benefiting from the process of globalization and becoming an information and knowledge society has become the vision for many governments throughout the world. These countries foster the hope that this step will end their current and increasing marginalization and improve their economies by them profiting from all the advantages this society holds. However, as it has been demonstrated in this thesis, becoming an information and knowledge society is much easier for developed countries that already possess some of the prerequisite criteria, such as an efficient and effective ICT infrastructure. By investing in such an infrastructure, the interaction and exchange of data, information, and knowledge from the local knowledge system with the global knowledge system is enabled. Through this two-way flow of information, the other criteria the countries have to comply with are stimulated, making it much easier and faster for these countries to achieve their goal.

However, the developing countries cannot truly benefit from the process of globalization, as this process is reliant upon a sophisticated ICT infrastructure, which is inefficient or non-existent within these countries. For the developing countries that are still in the grip of this digital divide, the goal of becoming information and knowledge societies seem nearly unattainable. Due to the digital divide that is experienced by developing countries, combined with other barriers, such as the social barriers that include the overall health and education level of the citizens, citizens of these countries cannot take part in the interaction and exchange process. Thus, this interaction and exchange process cannot aid these countries to comply with the other criteria needed to become information and knowledge societies, and in this way, the progress of

developing countries towards becoming information and knowledge societies are seriously hampered.

How does the interaction and exchange of data, information, and knowledge between developing countries' local knowledge systems and the global knowledge system contribute to their development and positive participation in the global information and knowledge society? This is the research question that has guided this thesis. To get an answer to this question the author addressed the following issues:

- The author sketched the theoretical foundation of this thesis by providing a brief historical perspective of the Information Science domain. This provided a better understanding of concepts such as data, information, knowledge, global-, western-, and scientific knowledge as well as indigenous-, traditional-, and local knowledge as applied in this thesis, and the underlying relationship between these concepts. Furthermore, the phenomenon of the global information and knowledge society was discussed as one of the opportunities presented by globalisation (chapters 2 & 3).
- The author then analyzed the criteria of the information and knowledge society as discussed in chapter 3, and identified indicators that the stated criteria are constructed from. To investigate whether developed countries are information and knowledge societies, these indicators were applied to Norway (ranked first in the world according to the Human Development Index) and the USA, seen as the epitome of development. It was concluded that both countries comply with the stated criteria and are thus information and knowledge societies (chapter 4).
- The author followed the same method of investigation and applied the indicators identified in chapter 4 to two developing countries, namely Niger, (ranked last in the world according to the Human Development Index) and South Africa. It was concluded that both these countries do not comply with the stated criteria and, thus, are not information and knowledge societies. Furthermore, barriers were identified by the



author that inhibits these countries from becoming information and knowledge societies (chapter 5).

- Lastly the author discussed proposed solutions and recommendations that can be used to overcome the various barriers that inhibit the progress of developing countries becoming information and knowledge societies (chapter 6).

7.2 RE-ADDRESSING THE CENTRAL PROBLEM STATEMENT

This study aimed to answer the main research question, which asked: “How does the interaction and exchange of data, information, and knowledge between developing countries’ local knowledge systems and the global knowledge system contribute to their development and positive participation in the global information and knowledge society?”

This main research question is answered by the discussion of a number of secondary research objectives related to the topic, namely:

7.2.1 Research Objective 1 - To develop a better understanding of the concepts data, information, and knowledge as well as the relationship between information and development.

In chapter 2, the author elaborated and discussed, in detail, the concepts of data, information, and knowledge. During this discussion, the author defined data as: “unprocessed, uncontextualised, global knowledge that has no added value, interpretation, meaning or context.” This definition is important from the context of this thesis, as it was shown that citizens in developing countries do not have the necessary skills to understand this global information, and consequently, that it stays data to them.

Information was defined by the author as: “Processed, contextualised data that has added value and meaning due to the specific context within which it is used.” The citizens within developing countries need to add value to the data they do not understand by making it relevant to their specific situation.



The author defined the concept of knowledge as: “the product of the constant interaction and exchange between the tacit and explicit knowledge of developing communities and countries.” Through this constant interaction and exchange of the tacit and explicit knowledge, the citizens can come to an understanding of the information that concerns values, morals, and judgements.

The relationship between information and development was indicated by the author by discussing the diagrams of Boon (1992) and Heeks (2002). The diagram of Boon shows that information as a knowledge resource can make a direct contribution to the development process. Heeks (2002) extrapolates this relationship further by stating that education and decision-making contribute directly to development and that this decision-making relies on information, which, in turn, is converted into knowledge. He elaborates by introducing the concept of information communication technologies (ICT) that can, according to him, deliver information and knowledge. From the perspective and context of this thesis, the author agreed with Heeks’ view that ICT can deliver information but disagreed that ICT can deliver knowledge. As information is contextualised data that can be obtained from the internet, only information can be delivered through ICT, and not knowledge.

7.2.2 Research Objective 2 - To determine what is meant by local knowledge and global knowledge.

In defining global knowledge, the author established that although many authors use the term, very few, if any, of them actually define what they mean when referring to global knowledge. The problem is further intensified when looking for possible synonyms for the term ‘global knowledge’. When considering the terms ‘scientific knowledge’ / ‘western knowledge’ as possible substitutes, even more problems were encountered. These synonyms defined global knowledge as knowledge that is accumulated by systematic study and organised by general principals. The author disagreed with this definition as it is not only western knowledge that is accumulated by systematic study and organised by general principals, but also eastern knowledge. From the



context of this thesis, the author defined global knowledge as the usable content that is available on the internet and that is beyond a local and indigenous context due to numerous infrastructural, financial, social, and content barriers.

In contrast to global knowledge, the author discovered very many sources defining indigenous knowledge. This term is used by many authors, and is an extremely broad concept. However, the meaning of the term is by no means clear to everyone. In the literature researched, the terms indigenous, traditional, and local are used interchangeably as synonyms. In the context of this thesis, the concepts, 'traditional' and 'indigenous' knowledge were not used. Instead, the author preferred to use the concept, 'local' knowledge. Had the term 'indigenous' knowledge been used, the author could have become ensnared in political agendas. The author is also convinced that the term 'indigenous' knowledge lends itself more to the definition as defined by the World Bank, namely knowledge belonging to indigenous people. Thus, seeing that this thesis has focused on developed and developing communities where there are local people indigenous to a specific community, it was felt best to steer clear of this term. For these reasons, the author has used the term local knowledge in the thesis and defined local knowledge as "knowledge and/or skills that are specific to people or communities in a particular area and that is contextualised within this area."

7.2.3 Research Objective 3 - To develop an insight into the ideal information and knowledge society.

In chapter 3, the author discussed, and elaborated on, the evolution of the concept 'information society' based on the extensive literature study conducted. The author postulated that it is important to gain a better understanding of the concepts related to the information society in order to appreciate the value and importance of being part of such a society. The author further argued in this chapter that the knowledge society is not a new concept, but is a continuation from the information society, which emerged in the 1960s and gained widespread currency throughout the 1980s. It was



shown in chapter 4 that this notion of the knowledge society can be traced back to the early 1960s when scholars such as Machlup (1962) started to speak about a post-industrial society that embodied the same ideas as that of the current understanding of the information and knowledge society. Based on a thorough literature overview, the author came to the conclusion that many authors use the concept of the information society interchangeably with the newer concept of the knowledge society. The author disagreed with this interchangeable use and argued that the concept of the knowledge society is more advanced than the traditional view of the information society. The author postulated that the two concepts are interdependent upon each other and should thus not be used in isolation of each other but as a conjoined concept, namely, the information and knowledge society.

From the perspective of this thesis and with the above argument in mind, the author defined the ideal information and knowledge society as follows:

“A society that is reliant upon a sophisticated physical and ICT infrastructure for the improvement of everyday living and working conditions. It is also a society that values the importance of information as a key to economic wealth and prosperity and where there is an increase in information related activities, as well as an enhancement of human intellectual capability. The information and knowledge society ensures the freedom of information through the use of information and communication technologies. In such a society, modern information and communication technologies are utilised to achieve the interaction and exchange of information between the local knowledge system (tacit knowledge and explicit knowledge) and the global knowledge system (explicit knowledge) to create usable, relevant contextualised content and knowledge. This interaction and exchange of data, information, and knowledge will, in turn, ensure the respect of other people’s beliefs, values, norms and religions due to the increase, and availability, of information regarding these aspects.”

This definition of an information and knowledge society as defined by the author, acted as framework from which the criteria of such an information and



knowledge society was construed. These criteria was discussed in great detail in chapter 4, section 4.5.

By defining the ideal information and knowledge society and by identifying and discussing the criteria of such a society, great insight was gained into this concept by the author.

7.2.4 Research Objective 4 - To identify precise indicators of the criteria of the information and knowledge society that can be used as a measurement to decide whether or not a specific country has become an information and knowledge society.

In chapter 4, the author identified precise indicators for each of the criteria of the information and knowledge society, as mentioned above. These indicators where then applied to Norway and the USA as examples of two developed countries, as well as Niger and South Africa as examples of two developing countries. These indicators were discussed in great detail in section 4.5.

7.2.5 Research Objective 5 - To determine the role that the interaction and exchange of data, information, and knowledge between a country's local knowledge system and the global knowledge system plays within developed countries

Based upon the definition of the ideal information and knowledge society, combined with the identified indicators based upon this definition, a strong case was made by the author that the interaction and exchange of data, information, and knowledge between the developed country's local knowledge system and the global knowledge system, will assist the country to become an information and knowledge society.

In the author's further deliberations on the role of this interaction and exchange process, it was illustrated that this process contributed to the country complying with most of the identified indicators of the criteria of the information and knowledge society. For example, through the interaction and



exchange of local content such as local remedies, with data, information, and knowledge from the global knowledge system, alternative methods of treatment for specific illnesses could be suggested. As a result of this interaction and exchange process, compliance with the social criteria of the information and knowledge society could be stimulated by improving the health of the citizens within the developed country: one of the indicators of this criterion.

The role of this interaction and exchange process was thus identified as to assist the developed country to comply with the needed criteria to become information and knowledge societies. Thus if this interaction and exchange process does not take place, countries find it very difficult to comply and will it take much longer for the country to become an information and knowledge society.

7.2.6 Research Objective 6 - To determine the barriers that inhibit developing countries from becoming information and knowledge societies

In the author's deliberations on the information and knowledge society, seven wide-ranging barriers that can inhibit developing countries from becoming information and knowledge societies were identified. In chapter 6, the author argued that the seven criteria of this society, when not complied with, become barriers in the path of the developing country on the road to becoming an information and knowledge society. These barriers were discussed in detail in chapter 5, in section 5.6 and include:

- economic barriers;
- spatial and technological barriers;
- political barriers;
- social barriers;
- cultural barriers;
- physical infrastructure barriers and
- knowledge barriers.



7.2.7 Research Objective 7 - To determine solutions and recommendation that can be used to overcome the barriers that inhibit developing countries from becoming information and knowledge societies.

In chapter 6, the author discussed various solutions and recommendations to overcome the barriers that inhibit the developing country from becoming an information and knowledge society. These proposed solutions were summarised in table 6.2.

7.3 TOPICS FOR FURTHER RESEARCH

Based on the research done by the author for the completion of this D (Phil) thesis, the following topics are identified for further research:

7.3.1 Understanding the contribution that indigenous/local knowledge can make in becoming information and knowledge societies

During the research into the various existing initiatives concerning indigenous/local knowledge and indigenous/local people within developed and developing countries, it was clear that most governments have placed these issues high on their agendas. However, in most of these cases, it seemed as if these governments knew that these issues were important from a human rights perspective, but not why they were important. None of these placed these initiatives within a larger context, namely the contribution that these people and their knowledge can make with regard to becoming an information and knowledge society. It is the author's opinion that the contribution that the indigenous/local people can make is of the utmost importance, as it is the knowledge of these people that captures the cultural diversity of the specific country. This is necessary within the information and knowledge society if the society is to serve the cultural enrichment of all its citizens.



7.3.2 Identifying methods and guidelines through which local content creation for the social inclusion within the information and knowledge society can be stimulated and improved

During the research for the completion of this thesis, it became clear that various international agencies, such as the World Bank and UN, encourage the creation of local content by the citizens, especially in developing countries. However, these agencies never provide methods or guidelines for the governments of these developing countries, as to how they should carry out this creation of local content or what this local content should entail. The author is of the opinion that a guideline can be created to assist these governments in stimulating the creation of local content. These guidelines can include specific government incentives that can be used as a way to encourage this creation.

7.3.3 Understanding the role that existing libraries, community centres, health clinics and other established facilities can play in the sustainability of telecentres in developing countries, such as South Africa

In the telecentre movement there is a great deal of debate and research concerning where and how to establish telecentres to ensure their sustainability. Significant research has been done to identify challenges to this sustainability, as well as reasons why these centres fail. However, although many authors within the telecentre research field suggest incorporating these centres within the existing infrastructure of the community, these suggestions have not been tested. Specifically in South Africa, very few case studies have been conducted into the actual establishment of centres within such existing facilities and the subsequent monitoring of their sustainability over a long-term period.

7.3.4 Development of an information and knowledge society barrier index

In the writing and implementing of policies pertaining to becoming information and knowledge societies, is it necessary for the policy writers of these developing countries to know what specific barriers can be present under the broader categories identified by the author.

Based on the author's identification of the broad categories of barriers that inhibit developing countries from becoming information and knowledge societies, it is possible to develop an index to measure specific barriers that pertain to that category. Although it would be a good idea if an international index of barriers could be created, it would be of more use if this could be done within a specific community, or country. This index can be based on the following broad categories of barriers:

- economic;
- spatial & technological;
- political;
- social;
- cultural ;
- physical infrastructure;
- knowledge.

The development of such an information and knowledge society barrier index would, amongst other things, provide the specific government and policy makers with a place to start to overcome the necessary barriers so that they can become information and knowledge societies in future.

7.4 A PERSONAL FINAL WORD

In doing this thesis over the last 6 years, the author learned many valuable life lessons. One of the most important of these is to truly appreciate the small comforts and luxuries in life, such as clean drinking water, electricity and sanitation. This appreciation was born out of the authors' deep



disappointment to realise that in the twenty first century, these luxuries, which are often taken for granted, are still not available in countries such as Niger. Furthermore the author re-learned that the grass is not always greener on the other side. Although many South African professionals are leaving South Africa for the 'greener grass' in countries such as the USA, these countries also have their imperfections. Although South Africa still has far to go on the road to become an information and knowledge society, the author is more positive and convinced than ever before that this destination will be reached faster and easier than expected.