

**The Development of a Curriculum Model for the
Teaching and Training of Information Ethics at
different educational levels in a multi-cultural
Southern Africa**

by
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WORDS OF APPRECIATION AND THANKS

All my life I have been privileged to work in a team – in some positions it was a matter of choice, while in other situations dictated by circumstances – but always to the benefit of all involved. Hence, my full acceptance that teamwork is one of the most powerful and rewarding tools in life.

Many of these teams were formally structured, whereas others were the result of like-minded people who cooperated on a voluntary basis and outside their scope of formal appointment towards fulfilling a shared goal and achieving shared objectives.

This study, its preparation, many of the guiding ideas, as well as an important part of the results can never be attributed to the insights of one person only – least of all this student. It would be overconfident and even arrogant to assume or claim that all these processes and outcomes have been the result of the vision of a single individual. In fact, I have been extremely privileged to work with the most competent colleagues, the best students, the most impressive researchers as well as the leading internationally acclaimed academic leaders and dearest friends in the field of Information Ethics. This study and its humbly envisaged contribution is indeed the result of teamwork in its purest form – thus my reference to *this* study and not *my* study.

In particular, I appreciate a number of personal life lessons that guided me towards this study. These include: patience and life-long learning from Former President Nelson Mandela, from Former President F W de Klerk I received the guidance of doing the right thing at the right time, Professor Johannes Britz who shown that respect to both friendship and professionalism are equally important. I also appreciate the continuous assistance by Dr Beverley Malan who guided me on the curriculum development path and the constant support by Professor Theo Bothma. Lastly I wish to recognise the contribution of each and every ANIE member from all over the globe as well as from inside the ACEIE office.

ACRONYMS

ACEIE	African Centre of Excellence for Information Ethics
ANIE	African Network of Information Ethics
AU	African Union
CEPE	Computer Ethics Philosophical Enquiry
ECLAC	Economic Commission for Latin America and the Caribbean
EGE	Electronics and Gaming Expo
EESC	European Economic and Social Committee
ICT	Information and Communications Technology (ICT)
ICIE	International Centre of Information Ethics
IFAP	Information-for-All Programme
NEPAD	New Partnership for Africa's Development
UWM	University of Wisconsin Milwaukee
WSIS	World Summit on the Information Society

**The Development of a Curriculum Model for the Teaching and Training of Information
Ethics at different educational levels in a multi-cultural Southern Africa**

Towards building safe Information Societies at all levels in Africa

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The Mandela Formula

The Development of a Curriculum Model for the Teaching and Training of Information Ethics at different educational levels in a multi-cultural Southern Africa

Towards building Information Societies in Southern Africa

Nelson Mandela was known for his wisdom, illustrated by various wise epithets, one of which is that there are few misfortunes in the world that one cannot turn into a personal triumph if you have the iron will and the necessary skill to do so. Interpretation of this insight suggests that most challenges can be addressed by personal behaviour and knowledge. This study is an attempt to apply this 'Mandela formula' to predicaments created by human behaviour in the digital world by focusing on personal conduct, knowledge and skills. In attempting to persuade selected target groups to behave properly and responsibly in the digital world, we hope to develop a generic Information Ethics model that will be particularly appropriate to digital citizens residing in Africa.

CHAPTER 1 – GENERAL INTRODUCTION

1.1 Background and reasoning

As early as in 2008, Howard Owens suggested that in an age when access to information was as open as a billion galaxies, each individual was responsible for handling information ethically. He also referred to the availability of information and compared it to the flow of a million Mississippi rivers (Owens, 2008). In 2015 this view was emphatically reiterated by Tony Bates (2015) who pointed out that, in the digital age, we are surrounded (indeed, immersed!) in technology. The rate at which technological change is occurring shows no sign of slowing down, and it prompts massive changes in the current economy. It affects the way we communicate and relate to each other and, increasingly, the way we learn (Bates, 2015), even though our educational institutions were built largely for an industrial age rather than for a digital era. Fact is, information has never been as cheap, as fast and as vast as it is today. Each of these characteristics implies both huge opportunities and challenges regarding the ways in which humans could use and/or misuse information.

The global information society is confronted with an increasing number of new challenges that have become an intrinsic part of the digital environment. Previously unknown challenges like hacking, cyber-crime, cyber-bullying, as well as problems caused by the use and misuse of digital-based social media, have spurred on information practitioners and researchers to detect and examine modern versions of old crimes, as well as completely new crimes. Emerging from their observations is the notion that there is a need for formulating principles to guide digital users' personal behaviour (information ethics). Such principles could guide human beings who, based on their digital profiles and activities, could be referred to as digital or cyber-citizens of the 21st century Information Age.

Practical engagement with social media, some of which unfortunately have an extremely negative impact, influence the daily experiences of individuals. While mass media and

instant news inform many cyber-citizens, hurried participation on electronic social platforms is costing many people not only their jobs, but also their dignity. Moreover, the use of official and private spy equipment not only threatens people's privacy but could also lead to the emergence of social problems like fake news, personal harassment and cyber-bullying. All these topics form part of the bigger new picture of human interaction in cyber-space and/or the digital environment. A possible negative result of damaging experiences and fear of cyber-challenges could be that people begin to feel unsafe and insecure on these information platforms: consequently, they may actively stop using available digital equipment. In doing so, they could be limiting their access to information and end up leading information-impooverished lives. This situation is also possible on the African continent.

It is, however, fair to question the truth of the mass media's claim that connectivity on the African continent is a high priority for both the private sector and government. Figure 1 shows the 2017 Seacom network with its connections to the African continent. (<https://commons.wikimedia.org/w/index.php?curid=20115866> By Quirk Seacom – 2017)

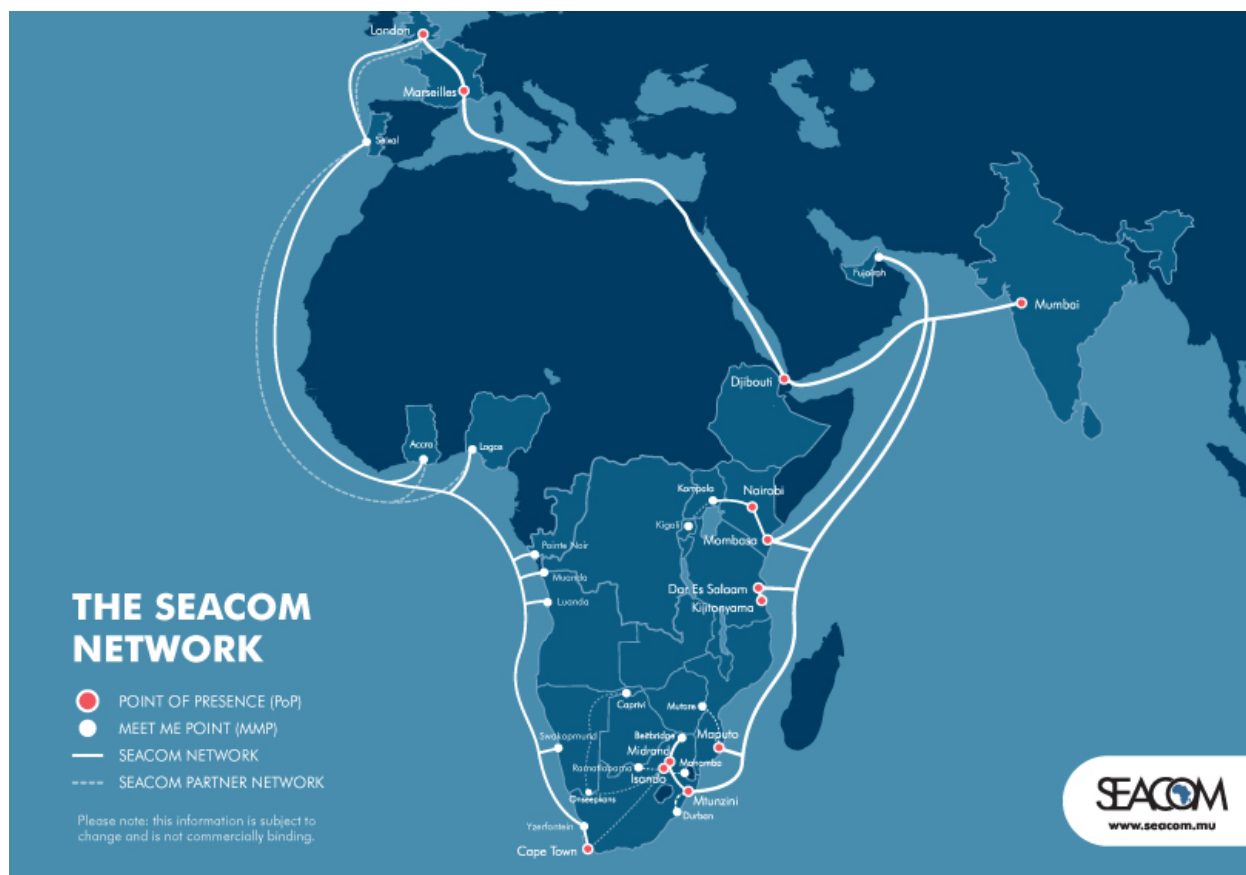


Figure 1: Africa connectivity by undersea cables

To be relevant, this study should take note of the factual information and communications technology (ICT) developments on the African continent and more specific the Southern African region. Both *with* connectivity and *without* connectivity the African continent will experience challenges. These challenges could include policy-related matters, legal challenges, economic problems, social justice matters and decisions on infrastructure priorities, access and accessibility, as well as the inadequate knowledge levels of ICT users. Unless the challenges are addressed, Africa may again lose out on the benefits brought about by the so-called 4th Industrial Revolution and its modern economic growth potential. One of the aims of this study is to prepare the African continent to be fully operational in the digital world.

Hence, this study focuses on Africa and outcomes specifically for the Southern African region. For all practical purposes, it could be said that Africa leapfrogged into the digital

technology era. Because of this, many of the traditional and economically deprived (rural) communities do not have the requisite guidelines or ethical frame of reference to guide their use of highly modern digital technology and/or to protect them as users against possible harm. However, various measures can be taken to address the absence of user guidelines and/or ethical structures. Such measures could include creating platforms for awareness and a better understanding of digital opportunities and challenges, introducing possible policy frameworks, and formally teaching information ethics to guide human digital behaviour in Southern Africa.

Human behaviour is known to be influenced by elements of trust, credibility and truth, which – together with factors like access and accessibility, knowledge and training, as well as privacy and ownership – constitute the fundamentals of Information Ethics. In order to enhance digital wellness and information ethics, the African Centre of Excellence for Information Ethics (ACEIE), in collaboration with UNESCO, have conducted various awareness workshops on information ethics in a number of African countries since 2012. These workshops will be discussed in full in subsequent chapters. What is important to note at this point is that it became clear during these workshops that there was an urgent need for more formal training on the nature, purpose and content associated with human behaviour on the internet and social media, in other words information ethics training. Subsequent workshops were used to test the validity of such observations and assumptions and to sharpen thinking on the topic of personal behaviour in the digital environment – and more specifically, information ethics.

1.2 Central statement of the problem and sub-questions of this study

In order to develop a curriculum model to teach Information Ethics in a multi-cultural Southern Africa, it is important to firstly create an understanding of what is understood by Information Ethics and the history of the concept. Secondly, since the study focuses on the development of a curriculum model to teach Information Ethics in a multi-cultural Southern Africa, it is important to understand the digital landscape of the geographical sub-region of Africa. Thirdly, the current digital status of the African continent needs to be

investigated and more specifically, global and continental influences on Southern Africa. The answers to these questions form part of the rationale for this study: if there is no need for ICT training in this geographical area, the study in hand will be of no value. The need for and readiness of the envisaged training will be influenced by the political will and policy frameworks to structure operational guidelines for information societies in Southern Africa. The available local, national and international policy frameworks that have an impact on Africa and particularly Southern Africa via infrastructure and global connectivity (satellites and undersea cables), should also serve as partial justification for the study and our pursuit of a multi-cultural information society in Southern Africa. The complexity of the multi-cultural environment in Southern Africa will need to be investigated from an ethical perspective.

Once policies and governing guidelines have been explored, the issue of cyber-crime and cyber-security will be investigated as justification for the need to emphasise appropriate human behaviour (ethics) to create a safe digital world. Human behaviour in the digital environment needs to be interpreted in the context of sociocultural elements, which include notions of Ubuntu, copyright, privacy and the sharing of information. These and other behavioural topics will then suggest answers to questions about the layout and structure of a practical and standardised training framework to teach Information Ethics in Southern Africa. Questions related to the framework will have to refer to training realities and methodologies most applicable to Africa and Southern Africa, and will have to solve problems within the existing model to manage information and cultural diversity in developing communities.

Finally, the curriculum model is aimed at addressing a number target groups on various learner/student levels. These target groups as described in Figure 3 of this study will include; pre-, and post graduate level in tertiary educational institutions, community leaders, voluntary workers, secondary school learners, primary school learners and children in the pre-school environment.

1.2.1 Central statement

The central research problem relates to the quest for developing a curriculum model to teach Information Ethics, particularly in a multi-cultural Southern Africa. The model will empower the citizenry in this region to be adequately aware, equipped and educated to address the ethical challenges posed by modern information and communication technologies.

1.2.2 Sub-questions

Based on the identified critical concepts, this study should by implication address the following four sub-questions:

1.2.2.1 What is Information Ethics and how has this discipline developed on the African continent at large and directly influenced Southern Africa?

In order to understand the relevance of a training framework, it is important to get a clear picture of the information infrastructure development in Africa and the ethical challenges it poses. Next, due to the inter-cultural nature of Information Ethics, it is essential to create an understanding of the role of culture in Africa, specifically as it relates to the identified ethical challenges. The second and third sub-problems can thus be formulated as follows:

1.2.2.2 What is the current status of information infrastructure and policy development in Africa and what are the main ethical challenges associated with these developments?

1.2.2.3 What role does culture play in multi-cultural communities towards understanding and interpreting Information Ethics?

1.2.2.4 The first three identified sub-problems form the basis of the last important sub-question namely: Why is an Information Ethics model needed in Southern Africa and what should the main elements of such a model be?

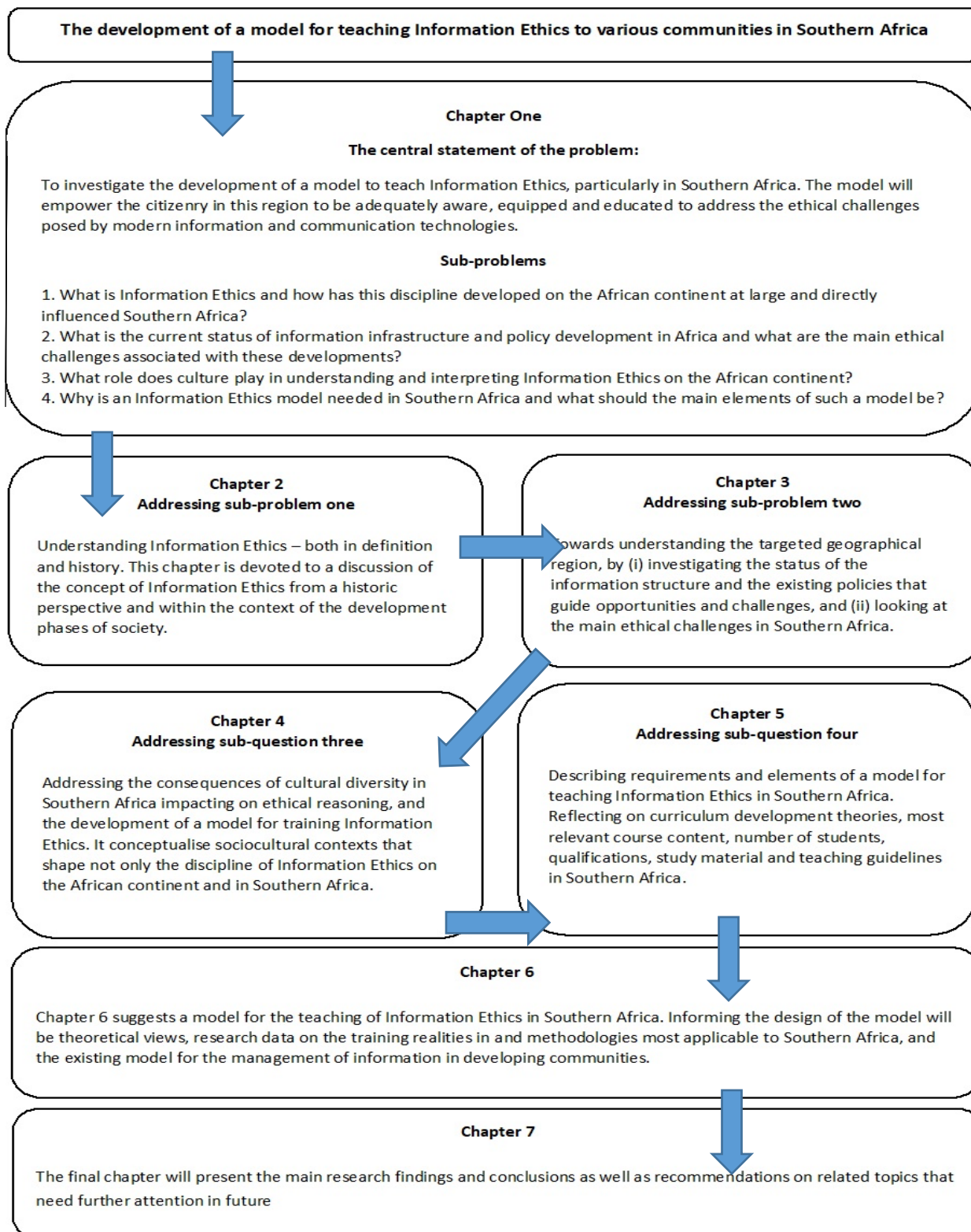


Figure 2: Illustrated summary of research problems

Figure 2 serves as an illustrated summary of the research problems in terms of the relationship between the central problem statement and research on the one hand and the research aim and objectives on the other. These are discussed in greater detail in Paragraph 1.3.

1.3 Research aim and objectives

The aim of this study was to gain an understanding of the development of Information Ethics in Southern Africa. Related to the achievement of this aim, three research objectives were identified:

- 1.3.1 Understanding and analysing, from an ethical perspective, policy frameworks and information infrastructure development in Africa as they also affect the digital environment in Southern Africa
- 1.3.2 Understanding the role of culture in multi-cultural communities towards the interpretation of Information Ethics issues in Africa
- 1.3.3 Developing a framework for training Information Ethics that can be used to address the stated ethical issues

1.4 Limitations and specific challenges of the study

Regarding the research question and research objectives, it is important to consider the time span between the theoretical elements of structured training development as a science, philosophy as the platform for information ethical studies, and the very young and vibrant learning environment of digital technology. In the course of the workshops, discussions, debates and inception of many of the ideas informing the structure of this study, an underlying tension was noticed between the time lines associated with the typical platforms of the core sciences (philosophy and curriculum design) and the digital era information science that forms the backbone of this study.

The design and development of structured training as a science started way back in 1918 when Charles Bobbitt argued that the purpose of schools is to fill the gap between knowledge and skills gained as part of community life, and knowledge and skills required

for the workplace. The processes he described to determine and fill the gap laid the foundation for much of the thinking around training design, even today. While theorists argue about the nature of structured training – whether to focus on process, product or outcome – they agree on the need for structure as the basis for teaching and learning (not only knowledge and skills, but also values and attitudes).

The purpose of this study is not to contribute to theoretical philosophy or to the field of meta-ethics. Neither does it focus on curriculum development theories. Rather, it is an attempt to borrow from these disciplines, as well as from processes associated with the field of applied ethics that could assist in the researcher's attempt to address the central statement and achieve the stipulated research aim and objectives.

1.5 Research methodology and design

Research findings are useless unless people believe in the truth and practical value of such findings. Much of the truth value is derived from readers' perceptions of the rigour, fairness and objectivity of the research process. Therefore, the description of the research methodology and research design is aimed at addressing these perceptions. As mentioned earlier in paragraph 1.2 a clear identification of the groups targeted for training on various levels is also relevant to the methodology and design of the study (see Figure 3).

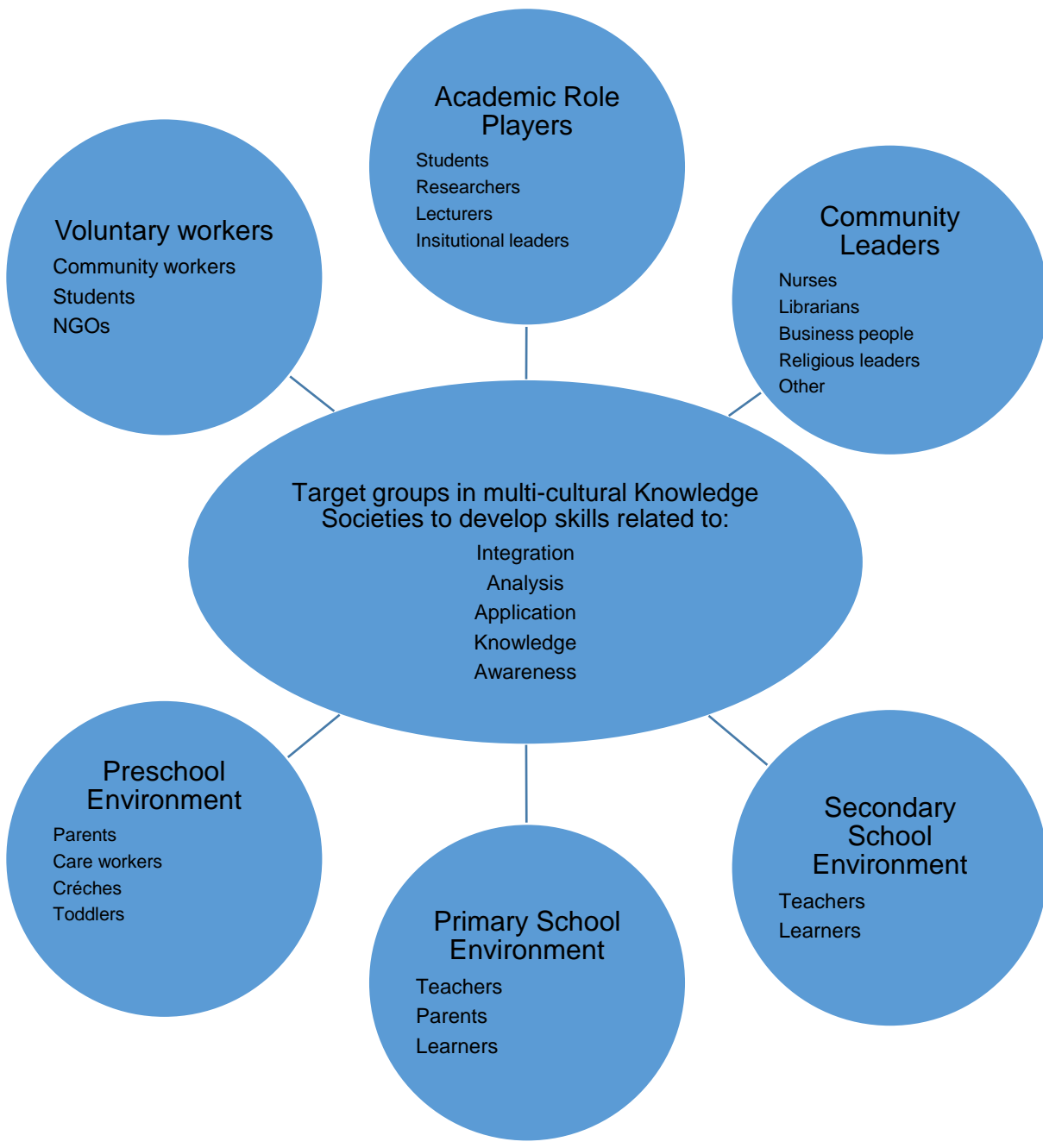


Figure 3: Groups targeted for Information Ethics training

What is important to note in advance is that, with regard to the proposed study, the researcher will use an interdisciplinary, multi-method approach and combine quantitative and qualitative data to answer the research questions (Swanson & Holton, 1997:93). Quantitative data will be collected by means of a structured/semi-structured

questionnaire. Qualitative data collection instruments will include focused workshops, individual interviews with lecturers, discussions with specialists, and focus group interviews with students (McMillan & Schumacher, 2001).

The functional role of the researcher is to design the research proposal, assist in the compilation of the questionnaire, administer the questionnaire, prepare and structure discussions and interviews, facilitate discussions, conduct interviews, organise and facilitate workshops. The method and technical detail for the design of a curriculum are based on decisions taken at the 2011 African Network of Information Ethics (ANIE) workshop and subsequent contributions by the University of Pretoria and the University of Zululand in particular.

1.5.1 Research methodology

Unlike basic or pure research, the purpose of this study is not to find answers to theoretical questions within a particular field or to gain a better understanding of the fundamental nature of social reality (Neumann, 2000:3). Rather, its purpose is to use existing knowledge to address the real-life problems or needs of specific stakeholders (Neumann, 2000:24). The study assumes that by making people on the African continent critically aware of and committed to the responsible and ethical use of information and information and communications technology (ICT), the development of Africa as a member of the 'global village' can be enhanced. Africans will then also become responsible cyber-citizens and conduct themselves in an ethical manner in the digital world. By definition, this is therefore an applied research study.

The type of applied research that tries to advance a cause while maintaining an equal power relationship between the researcher and research participants is known as action research. In this study, the researcher is trying to 'improve conditions' in Southern Africa by 'expanding public awareness' (Neumann, 2000:25) of information ethics and the role it could play in the further development of Africa as an ethically sound knowledge and information society. As is typical of action research in general, this study is explicitly political, rather than value neutral (Neumann, 2000:25).

Since the study also aims to raise awareness of the need to use information and Information and Communication Technologies (ICTs) responsibly and ethically, it has to consider differences in research participants' views on the opportunities and challenges posed by the information and digital age. It seems appropriate, therefore, to frame the research within a qualitative rather than a quantitative research paradigm. The term 'qualitative research', according to Patton (1990) and Hoepfl (1997), refers to any research conducted in authentic, real-world settings, where the phenomenon under investigation unfolds naturally, without the use of statistical procedures or other means of quantification.

Given the preceding definition of qualitative research, it follows that different qualitative research studies might have different foci and/or use different methods to collect and analyse data. Nevertheless, the primary purpose of all qualitative research studies is to gain an in-depth understanding of the phenomenon under investigation (Nieuwenhuis, 2007) by focusing on the lived and felt experiences of the research participants (Sherman & Webb, 1988). By framing their study in a qualitative research paradigm, researchers can uncover the multiple ways in which people construct meaning in challenging and controversial contexts (Denzin & Lincoln, 1994), or 'real-world settings' (Patton, 1990), thereby gaining useful insights into social, emotional and experiential phenomena. Such insights are critical to attempts aimed at the improvement or transformation of the lives or living conditions of groups of people. In addition, all qualitative research studies tend to produce findings that are applicable beyond the immediate boundaries of the phenomenon under investigation (Hollway & Jefferson, 2000; McMillan & Schumacher, 2010; Slavin, 1994).

Qualitative researchers typically analyse and interpret data at the end of each data collection stage, rather than at the end of the data collection process as a whole. Since one of the foci of this study is to first uncover and then to develop Southern African communities' awareness of information ethics and the role it could play in the enhancement digital Literacies of a globally advanced Southern African knowledge and

information society, this was an important consideration in the choice of a research paradigm. In fact, the iterative data collection and analysis process, typical of qualitative research, is a critical factor in the study since it enables the researcher to extrapolate and/or test insights emerging from interactions with a group of research participants against data generated in subsequent interactions with other research participants (Hoepfl, 1997).

Finally, because the intention of this research study was to support and contribute to the development of Africa as a globally competitive information and knowledge society, the final research report had to reflect the perspectives of the researcher and the research participants alike (McMillan & Schumacher, 2010) – something that is possible only in qualitative research.

1.5.2 Research design

According to Terre Blanche, et al (2006), a research design serves as the ‘bridge’ between the questions the researcher wants answered and the actions taken to find these answers. In this study the design serves as a road map that indicates which steps should be taken in the collection, analysis and interpretation of data if satisfactory answers to the research question stipulated earlier in the chapter are to be found.

Context-specific, real-world settings, according to Bester (2007), provide qualitative researchers with a complex, holistic picture of the phenomenon being studied. Given action researchers’ mission to raise critical awareness of a particular phenomenon to improve social conditions, data should ideally be collected in natural, authentic contexts (Neumann, 2002). Only then would researchers be able to construct a ‘reading’ or ‘portrayal’ of the phenomenon being studied by highlighting the ways in which people attach meaning to or make sense of events (Neumann, 2002).

An in-depth understanding of the context in which development projects are launched is crucial to the success of the project. Such an understanding, according to Bester (2007) and Peoples and Baily (2000), includes a sound knowledge of the community targeted

for development – knowledge of its nature (“urban or rural”), of the “dynamics of community life” (including its value system, its views on what is or is not a desirable life), of the “symbols that communicate meanings of common interest, and of different classifications of reality”.

According to Bester (2007), the fact that different groups use different languages to express their thoughts, feelings, attitudes and ways of being, implies that change agents also need to be sensitive to the language and communication protocols of the communities where they plan to work. In this regard it is especially important to be cognisant of the use of proverbs which (especially in developing countries) are vehicles for the expression of cultural wisdoms and values, metaphorical speech, alliteration and rhyme, and are transferred verbally from one generation to the next (Coertze & Coertze, 1996).

Potential change agents – including project managers and action researchers – should moreover be careful not to create the impression that they plan to impose their own value systems or culture on the target population. Rather, the changes to be brought about – while factual – should be perceived emotively by those on the receiving end as being congruent with their own culture and values. This is true even when change agents believe that the survival of the community depends on the extent to which it is willing to change in response to a changing environment that necessitates adaptation and/or the adoption of new ideas (Coertze, 1973).

The context within which this research study is located specifically focuses on the development of Southern Africa as a globally competitive knowledge and information society. The researcher has to date organised and facilitated numerous workshops and public discussions on Information Ethics across Africa in his capacity as the director of the African Centre for Excellence in Information Ethics (located in the Department of information Science at the University of Pretoria in the Republic of South Africa). In so doing, he already created a network of African academics, government officials and public servants who might be willing not only to continue their participation in the investigation

and study of information ethics as a phenomenon in its own right, but also to contribute to the evolution of Africa as a respected information and knowledge society. In addition to these research participants, and as part of its focus, a number of academics at African universities will be selected from a predetermined list of voluntary institutions that are currently involved or interested in teaching Information Ethics.

Since it would be impossible to cover all of Africa as a single case study, two Southern African countries – South Africa and Kenya – were selected as case studies. Both these countries have already shown an interest in information ethics and related matters through the attendance of delegates at international conferences and workshops on information-related matters, through participation in the African Network of Information Ethics (ANIE) and/or in the writing of academic articles for journals dedicated to information-related matters. Using purposive rather than random sampling (Johnson & Christensen, 2012; Nieuwenhuis, 2007; Slavin, 1994), the selection of two countries as case studies allows the researcher to study people in their natural setting or context. Such contextual case studies, typical of qualitative research, enable researchers to study and understand the characteristics of smaller ‘cases’ in sufficient detail to get a sense of the characteristics of the population as a whole.

1.5.3 Data collection

Data on the status quo of information ethics in the countries constituting the sample, as well as on their readiness to become information ethics advocates, was collected during a series of workshops organised by the researcher in his capacity as the director of the ACEIE prior to the commencement of the actual research study.

The mission of the ACEIE is to raise a critical awareness of information ethics issues. For this purpose, it has to date established the African Network of Information Ethics (ANIE) and developed an inter-disciplinary curriculum framework that could be used to create a Higher Education Information Ethics programmes and a Toolkit on Digital Wellness for schools and communities. These initiatives served as basis for the researcher’s interaction with selected research participants from the countries targeted for case study.

The workshops organised by the researcher served a dual purpose, namely (a) to raise participants' awareness of the importance of information ethics in information and knowledge societies, and (b) to collect data on the status quo of workshop participants' awareness of information ethics as a concept and a way of life. The researcher, being actively involved in organising and facilitating these workshops, had the opportunity to interact with workshop attendees as research participants on a face-to-face basis. Interaction occurred during the workshops, with the researcher and workshop attendees sharing with one another their knowledge and understanding of and experiences with the accessing and dissemination of information via ICT. The nature and types of interaction were dictated by the values and needs of the research participants (Ary et al., 1990). Consequently, procedures for data collection and analysis sometimes had to be adapted to accommodate the culture and values of research participants who represented the different countries.

While time-consuming, interactive and face-to-face data collection is critical for the trustworthiness of qualitative research findings because it compels the researcher to consistently and carefully consider his/her judgements about the significance and meaningfulness of data (Patton, 1990). Being both a facilitator and an active participant in information ethics workshops and conferences, the researcher was basically a participant-observer (Croll, 1986). The adoption of this role not only enabled him to better understand the meaning of social relations and social processes in the countries /cases concerned, but also provided him with valuable insights into hidden attitudes or views that might unconsciously be affecting research participants' unconscious behaviour (Gorman & Clayton, 1998).

Since the researcher raised specific issues for discussion during the course of the workshop and probed discussants for reasons and explanations whenever necessary, the face-to-face interactions that took place during the workshops could be regarded as semi-formal interviews. In addition, informal conversations/interviews took place during tea and lunch breaks, as well as after conclusion of the formal programme for each day.

On all of these occasions, research participants had the opportunity to narrate, in their own words, their experiences with ICT and the ways in which they and others use these technologies (Riessman, 1993); thus, breaking down traditional power relationships between researchers and research participants. Consequently, all parties – researcher and research participants alike – contributed equally to the generation, analysis and interpretation of data.

Due to the relaxed and trusting atmosphere resulting from this equal partnership, research participants did not feel threatened by the researcher's attempts to uncover the values or reasons that informed the ways in which they engage with information and ICT. In fact, it was probes (Wolcott et al, 2001) like these that generated data that was both rich and explanatory in nature and, at times, unanticipated by the researcher.

Given the qualitative and contextual nature of the study, not only data and views collected via interviews could be considered in the identification of patterns, but also data emerging from ethnographic observations of research participants' behaviour during the course of the workshops (White, 2005). Since these observations facilitate the triangulation of data towards the identification of significant patterns or themes, they are deemed critical to the trustworthiness of the research findings. To ensure trustworthiness, observational data, views and document analysis were supplemented and crosschecked by means of casual interviews (McMillan & Schumacher, 2001).

In addition to face-to-face interactions and observations, the researcher used project reports, workshop feedback forms, academic articles and e-mail correspondence as data sources, all of which increased his understanding of the subjective meanings attached to various dimensions of the phenomenon being studied (Johnson & Christensen, 2012; McMillan & Schumacher, 2010; Slavin, 1994).

1.5.4 Data analysis

According to McMillan and Schumacher (2001), qualitative data analysis is an inductive process: the researcher does not wait until all the data has been collected before he

begins to interpret it. Rather, he/she reflects on the meaning of what he/she has heard, seen and experienced during each data collection occasion, identifies patterns and themes, and uses subsequent data collection occasions to confirm or disconfirm these.

In the current study, the researcher analysed data and observations collected at each workshop before embarking on a subsequent one. Put differently, he moved back and forth between the collected and analysed data and observations so as to interpret and make sense of each data set before tackling the next workshop (Johnson & Christensen, 2012). This was particularly useful in the sense that it assisted the researcher to uncover the subjective meanings that research participants in the different African countries attached to the notion of information ethics (the social phenomenon being investigated).

1.5.5 Theoretical framework – grounded action research

Notwithstanding the choices made about the research paradigm and type as explained earlier, the study in hand was neither designed nor conducted within the parameters of a specific theoretical framework. Rather, the researcher wanted to 'build a theory ... faithful to the evidence' (Neumann, 2000:146) that emerged from data that had been systematically gathered and analysed throughout the research process (Strauss & Corbin, 1990:12). Even so, the interpretation of patterns emerging from the data and observations (during and after data collection and analysis), although interpreted in accordance with pre-determined criteria, was influenced by both the researcher's and the research participants' interaction with the research phenomenon, context, process and one another (Henning, Van Rensburg & Smit, 2004:20).

The researcher's understanding of the phenomenon being studied deepened incrementally during the course of the investigation and validated the notion that knowledge is constructed, acquired and communicated by people while interacting with one another (Cohen, Manion & Morrison, 2000:6; Henning et al., 2004:20); hence its tentative, intangible and dynamic nature. As the workshop facilitator, the researcher was also constantly aware of the fact that all participants communicated mostly not in their mother tongue, but in a second or even third language. This was important not only

because many of the ethical terms were perceived to be sensitive in terms of culture and local languages, but also due to the view that English was the 'compulsory' language of the digital world.

To conclude – the knowledge and understandings communicated in this research report were therefore not the researcher's alone; rather, everyone involved in and affected by the research process has been a co-constructor of the final product.

1.5.6 Trustworthiness

As indicated earlier, research findings are useless unless people believe in their truth value. Confirming the trustworthiness of research data is especially important in the case of applied research, because the latter is often regarded as less rigorous due to its pragmatic orientation. Applied researchers therefore must make the effort to spell out the steps they took to ensure that their research findings are worth paying attention to (Lincoln & Guba, 1985). This is especially important if the applied research is qualitative in nature. Unlike quantitative data, which is used to confirm or reject predetermined hypotheses, qualitative data is used to answer one or more research questions and it is the credibility, transferability and dependability of the processes and procedures followed to obtain these answers that serve as criteria against which its trustworthiness is judged (Kock, 1994:946, cited in Bester, 2009).

The present study satisfies the above criteria. Its credibility lies in the detailed records kept of collected data, its detailed descriptions of data analysis and its honest acknowledgement and description of challenges experienced in the data collection and analysis stages of the research. Its significance or value cannot, however, be determined as yet. Unlike basic research, which is deemed 'successful' when its research findings appear in a scholarly journal, the 'success' of applied research lies in the extent to which its results are transferable to other contexts and/or used by those who sponsored or commissioned it in the first place. Judgements on the significance or value of this study can therefore only be made once its findings have been used in the development of globally competitive African information and knowledge societies.

As indicated earlier, an interdisciplinary and multi-method approach that utilises both quantitative and qualitative data and observation collection processes was used to answer the research questions (Swanson & Holton, 1997:93). These processes included the completion of a questionnaire, face-to-face interviews and conversations, researcher observations and discussions with specialists (McMillan & Schumacher, 2001). The data collected from the workshops will further be listed, analysed and described in Chapter 5 of this study.

To address possible bias or subjectivity on the side of the researcher, the usual two-person interview format in which the interviewer initiates a conversation for the specific purpose of obtaining relevant information (Cohen & Manion, 1982), was complemented with focus group interviews (where participant groupings discussed or debated issues or topics related to the research study). In the focus group interviews and discussions data was generated on participants' feelings about digitally related behaviour. The inclusion of both interview types was one of the ways in which the researcher strove to minimise the effect of his own possible bias or subjectivity. Other ways were to analyse documents as a means of cross-checking data that had been collected during observations and in "casual interviews" (McMillan & Schumacher, 2001).

1.6 Current research and impacting policy statements

Since the study integrated a number of (until now) relatively unrelated topics, it was important to understand the assumption (for now) that these topics would have an impact on each other. Figure 4 briefly summarise the topics that serves as elements influencing the environment of this study. The relationship between the topics or fields were tested throughout chapters 3, 4 and 5 of this study. It seemed that at least four sets of elements could be identified as having an impact on the digital capabilities and operational environment of cyber-citizens. These environmental elements could be linked to digital infrastructure, digital policies, cultural differences, as well as the academic and educational environment

DIGITAL INFRASTRUCTURAL ENVIRONMENT	DIGITAL POLICY ENVIRONMENT	MULTI-CULTURAL ENVIRONMENT	ACADEMIC / EDUCATIONAL ENVIRONMENT
<ul style="list-style-type: none"> • Availability of personal ICT technology and equipment • Status of digital connectivity • Available internet connections • Broadband infrastructure • Availability of electricity 	<ul style="list-style-type: none"> • Political priorities • Approved policy frameworks • International agreements and best practices • UNESCO • WSIS • Cyber-crime policies • Cyber-safety 	<ul style="list-style-type: none"> • Impact of culture on behaviour • Elements of culture • Cultural practitioners • Multi-cultural influences • Cultural differences • Cultural discrepancies • Universal culture 	<ul style="list-style-type: none"> • Research projects • Educational systems • Educational policies • Available curricula • Teaching and learning objectives

Figure 4: Elements influencing the context of this study

1.6.1 Academic contributions

This study mainly emphasised an understanding of Information Ethics post 2007 to develop a curriculum to teach Information Ethics. However, awareness of teaching this subject was known to start as early as 1990. In August 2017 during a personal interview, Professor Johannes Britz shared with the researcher the historic point that the Department of Information Science at the University of Pretoria actually started teaching this subject under his guidance in 1990. Britz, who was a student of the well-known ethicist Professor Johan Heyns, interpreted various ethical principles and translated those into terminology relevant for Information Science. Britz recollected the academic processes to transfer concepts such as ‘social justice’, ‘access to information’ and ‘information poverty’ into an information science curriculum.

In addition to the Africa-based ground-breaking work by Britz and his colleagues at the University of Pretoria, the academic subject matter and themes of the Information Science curriculum was developed through various local and international debates over the past 30 years. One such event was the Computer Ethics Philosophical Enquiry (CEPE) that took place in 1997. The CEPE is selected for its timeous relevance as it followed almost

a decade after Britz and his team started to develop their teaching programme, and also about a decade prior to the establishment of the Africa Network for Information Ethics (ANIE) in 2007.

During the 1997 CEPE conference academics from several European universities discussed topics relevant to that time. A report on the CEPE is not relevant now, but the issues and topics that were highlighted then remain significant. The current study will determine whether progress was made (or not) in the development of pertinent subject matter and it will indicate the relevance of African-based research in making a local and global contribution.

The CEPE conference *inter alia* addressed the following topics: privacy; user and information bias; deindividuation; ethical decision making; security; anonymity; exclusion from information; markets' and governments' role in managing information; the concept of responsibility; access to people with disabilities; the ethical question involving humanoid robots; loss of respect towards humankind; and the problem of prominence of computers in culture and human judgements. Today, in reading this list of conference topics together with the list of topics mentioned by Britz, it seems that the information ethics debate is still as relevant as 20 and 30 years ago (*Computers and Society*, 1997).

The idea to organise a conference on Information Ethics in and for Africa emerged during an international symposium on Information Ethics in Karlsruhe, Germany, in 2004. The Karlsruhe symposium, organised by the International Centre for Information Ethics, focused on new and challenging ethical questions resulting from the use of modern information and communication technologies. Attended by both Britz and Capurro as leading international experts in the field of Information Ethics, the symposium discussions focused on themes such as privacy, access to information, intellectual property rights, quality of information, security, spamming, and advanced capitalism and the digital divide (information rich and information poor) (Capurro, 2007). During this symposium the following became clear:

- The African continent was not well represented. In fact, there was only one representative from Africa in attendance, Professor Johannes Britz, who happened to be one of the initiators of the proposed symposium (Britz, 2007; Capurro, 2007).
- Research was needed on ethical challenges associated with the introduction of modern information and communication technology on the African continent. Among the challenges mentioned were issues of privacy, the protection and promotion of indigenous knowledge, the archiving of African websites, intellectual property issues (high costs and strict international legislation), security issues (relating specifically to the war on terrorism), and spamming. Also mentioned as critical issues were the right to access knowledge and the ability of Africans to become part of the global information-based economy (knowledge economy and the divide between the information rich and the information poor) (Capurro, 2007).
- The lack of publications on the role of African philosophy in addressing these issues was a critical problem, since the bulk of available research on Information Ethics matters had been framed in one or more Western philosophical paradigms. Research on ways in which Africans' notion of Ubuntu could affect the formulation, interpretation and application of intellectual property right legislation in Africa was specifically mentioned in this regard (Capurro, 2007).

Informed by these observations, delegates at the symposium agreed to a proposal that the ICIE should organise a similar symposium on Information Ethics in Africa, an 'Africa Information Ethics' symposium, in other words. Being the first of its kind in Africa, the symposium would ideally focus on the new ethical challenges posed by modern information and communication technologies, as well as on the role that African philosophies could play in addressing challenges like these.

The International Centre of Information Ethics (ICIE), in close collaboration with various other institutions, accepted the responsibility to plan an international symposium on Africa Information Ethics, to be held on the African continent (Capurro, 2007) in Pretoria, South

Africa in January 2007. The symposium activities would have four outcomes as purpose, namely to:

- Publish papers delivered at the symposium as a special issue in the International Journal of Information Ethics
- Ensure that African scholars in the field of Information Ethics become part of the international scholarly community
- Plan follow-up symposiums to reflect on new developments in the field – with the focus on Africa
- Develop a related but distinct academic field of African Information Ethics

Delegates at the 2007 Pretoria symposium included academics, government officials and information practitioners. Key among these roles players were international organisations like UNESCO, governments of countries in Africa, and academic associates from various African universities (ANIE Report 2007). Their continuing contributions form part of the present study, as they committed themselves to achieving the mentioned objectives and outcomes in support of ethical behaviour in the information society.

The Pretoria symposium, which was aimed at specific activities to further develop Information Ethics as a science and a practice in Africa, indicated the need for some form of structured Information Ethics teaching. This need was explicitly addressed at a 2010 ANIE workshop on *Africa Information Ethics: The Road Ahead*. The purpose of the workshop, which took place from 15 to 16 January 2010 at the University of Pretoria, was to prepare a *Grant Proposal for the 12 Universities Teaching Structure and Proposed Joint Curriculum* (ANIE, 2012). Flowing from the development of the grant proposal was the imperative to reflect on the nature and content of such a curriculum. It was for this purpose that a follow-up ANIE Conference was held at the University of Botswana, in Gaborone, on 6 and 7 September 2010. This conference formulated and emphasised the need for research towards a curriculum to teach Information Ethics in Africa (ANIE, 2012).

Following the curriculum focus of the Botswana conference, a follow-up ANIE Workshop (4 and 5 July 2011 at the University of Pretoria, RSA) focusing on curriculum delivery,

and a wrap-up workshop (held at the University of Wisconsin Milwaukee (UWM), USA, from 22 to 27 September 2011) aimed at fine-tuning specific curriculum design and delivery aspects, were held. Both workshops were attended by academics representing different disciplines and fields of study from Africa and the USA.

What emerged from the 2010 and 2011 ANIE events as well as the UWM workshop, was the realisation that there was a direct relationship between the development of African information and knowledge societies and a critical awareness of the importance of Information Ethics, given Africa's increasing exposure to ICTs and the use of digital technologies. Implied in such exposure was Africa's responsibility to adhere to the rules of international Information Science and the ICT environment. Further indications were that training in the proper use of these technologies was needed. It is in response to these indications that the study in hand focuses on the ethical challenges that Africa faces in her exposure to and use of ICT opportunities and digital technologies.

Africans of all races, ages and genders need to understand the meaning and implications of principles like privacy, ownership of information, intellectual property, access to information, and information poverty. These and other elements related to Information Ethics form part of the focus of this research study and feed into the development of an African-oriented curriculum for Information Ethics (ANIE Report, 2011). Informing the aims and objectives of an information ethics curriculum for Africa is a commitment to ensure the inclusion of African societies in the so-called Global Information Society through the development of fully operational cyber-citizens. Implied in this commitment is the imperative to design, deliver and implement a standardised curriculum as a matter of priority.

The researcher embarked on this study to reflect on the processes involved in the design and delivery of a university curriculum on Information Ethics that will contribute to the building of information societies in Africa. Informing this reflection is Capurro's (2007) claim that (a) Information Ethics is a young academic field, and (b) not much has to date

been published on the influence that African philosophies have on the ways African societies and cultures deal with the impact of ICT and other digital technologies.

The assumed disjuncture between African philosophies, the challenges that ICTs and other digital technologies pose to African societies, and the ways in which those in Africa engage with these technologies, constitute a fundamental limitation in current research on Information Ethics in Africa. However, in addition to the mentioned work at the University of Pretoria since 1990, significant work in this regard already started at other institutions. In 2009, Professor Dennis Ocholla, based at the University of Zululand, published an article in which he attempted to answer the question: 'Information Ethics in Africa. Where do we stand?' Using the article to explore Information Ethics education as then offered by Library and Information Studies schools and departments at African universities, Ocholla wanted to determine a number of things: the extent to which Information Ethics was necessary; who determined the need to teach it; why should the subject be offered; who should be the students; how long should the education be; what should be included in the content (Ocholla, 2009).

The activities described in the preceding paragraphs indicate that all major role players agreed on the principle of informing and training new digital technology users of Information Ethics – to protect and guide them through the minefield of challenges that form part of the information environment. This orientation is critical not only in the training of professional information practitioners but, as stated by UNESCO (WSIS, 2003), training and protection must also be available to individuals, communities and even families. Although the basic content for teaching and training was listed and discussed on these occasions, no mention was made of a specific standardised curriculum to teach Information Ethics in an African context.

In referring to many of the afore-mentioned authors, Douglass (2012) stated that the study of information ethics education in Africa was relatively new and had yet to gain an empirical and normative footing. She acknowledged that the matter gained momentum in the previous three years (2010 to 2012), and based her observation on the theme of the

Third International Information Ethics Conference for Africa held in Botswana in September 2010. She suggested that the growing interest in Information Ethics education in Africa presented an opportunity, and possibly even a mandate, to take stock of the methodological developments to date, and therefore included a layout of published articles up to 2012 in her article.

From a current political perspective, the need for the type of curriculum in question is eminent, given that the use of digital technologies in Africa is growing rapidly. During his opening speech at the ICT Indaba in Cape Town on 5 June 2012 the then South African Deputy President, Kgalema Motlanthe, discussed the increase in digital technology users. He specifically referred to the need for policy development on the use of digital technologies, and to the inclusion of the 55% rural people on the African continent (Motlanthe, 2012). His alert was supported by Andre-Michel Essoungou (2011) who reported his research findings in an article titled, *Africa's rising information economy and ICT user growth*. Detailed statistics by the Miniwatts Marketing Group indicate, moreover, that by 31 December 2011 an estimated 139 875 242 people in Africa used the internet and that on 31 March 2012 more than 40 million people on the African continent used Facebook. These figures reflect about 13.5% of the population on the African continent. (Internetworldstats, 2012).

Because digital technology has started to affect the lives of millions of people in Africa, it should be the aim of all stakeholders and role players to – as a matter of urgency – prepare, guide, inform, warn and protect new users by raising awareness of information ethics and providing guidelines for the use of information. This study aims to do so by addressing the need for a standardised curriculum to teach Information Ethics within an African context.

1.6.2 Relevant statements on ethics and ICT policy frameworks in Southern Africa

Relevant to Southern Africa, the African Union in 2004 recognised information and communication technology as one of the elements critical to the development of Africa. Referring to ICT as a development tool in the hands of the African Union (AU), and to the continent's responsibility to use every opportunity for creating a better life and a more humane world for all, Dr Ivy Matsepe-Casaburri, former Minister of Communication in South Africa, proclaimed, "Gone are the days when people solved our problems for us and not with us". Her claim, made during the opening of the offices of the New Partnership for Africa's Development (NEPAD) on 7 April 2004 in Pretoria, reiterates the vision of the 2003 World Summit on the Information Society (WSIS) of an Information Society "where everyone can create, access, utilise, and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving the quality of lives" (WSIS Vision Statement 1, 2003). Informed by this vision, the present study is undertaken with to make an African-founded/-based contribution towards ICT for development – specifically the development of information societies and tools that promote the ethical digital behaviour of every ICT user.

Acknowledging the influence of WSIS 2003 and the subsequent WSIS policy statements, the researcher deems it important to study global views and policies as expressed by the United Nations (UN), the United Nations Education, Science and Cultural Organisation (UNESCO), the World Summit on the Information Society (WSIS) and the African Union (AU) as background to and basis for this study. Regarded as particularly relevant are the references these organisations made to ICTs and information management in general and to Information Ethics in Africa in particular. Through UNESCO, as an indirect organ of the UN, the WSIS presented itself as the global authority on information societies and related aspects. In this capacity, the WSIS provides international guidance by means of important ICT policies and statements that serve as principles for the economic development of countries in an ICT and digital environment. These guidelines are particularly important for the African continent, whose development is affected (albeit not explicitly) by the expansion of information societies, political and policy priorities, human

development, cultural diversity, training and educational structures and last, but not least, Information Ethics.

In support of the role of ICTs in the development of the continent of Africa (among others), the WSIS declares:

We are resolute in our quest to ensure that everyone can benefit from the opportunities that ICTs can offer. We agree that to meet these challenges, all stakeholders should work together to: improve access to information and communication infrastructure and technologies as well as to information and knowledge; build capacity; increase confidence and security in the use of ICTs; create an enabling environment at all levels; develop and widen ICT applications; foster and respect cultural diversity; recognize the role of the media; address the ethical dimensions of the Information Society; and encourage international and regional cooperation. We agree that these are the key principles for building an inclusive Information Society. (WSIS 2003 Vision Statement 19)

As this research will target the teaching of Information Ethics in Africa it is essential to note the WSIS views on the matter – especially its motivation of role players towards training and skills development as the route to participation in the development opportunities offered by ICTs. In this regard, the WSIS statement 29 declares the following:

Each person should have the opportunity to acquire the necessary skills and knowledge in order to understand, participate actively in, and benefit fully from, the Information Society and the knowledge economy.

Training responsibilities are further described in Statement 30: “the use of ICTs in all stages of education, training and human resource development should be promoted, taking into account the special needs of persons with disabilities and disadvantaged and

vulnerable groups”. The role of universities, as adult training institutions, is specifically addressed in WSIS Statement 31, which declares as follows:

Continuous and adult education, re-training, life-long learning, distance learning and other special services, such as telemedicine, can make an essential contribution to employability and help people benefit from the new opportunities offered by ICTs for traditional jobs, self-employment and new professions.

This statement ends with the pertinent remark that awareness and literacy in ICTs are essential foundations for development and job creation processes.

The African focus of this research will have to address the fact that Africa is considered a developing continent, comprising various countries categorised as globally least developed. These challenged areas are also addressed in WSIS Statement 32, which proclaims:

Content creators, publishers, and producers, as well as teachers, trainers, archivists, librarians and learners, should play an active role in promoting the Information Society, particularly in the Least Developed Countries.

In this regard, the cooperation structures between developed and developing countries are guided by Statement 33:

To achieve a sustainable development of the Information Society, national capability in ICT research and development should be enhanced. Furthermore, partnerships, in particular between and among developed and developing countries, including countries with economies in transition, in research and development, technology transfer, manufacturing and utilization of ICT products and services are crucial for promoting capacity building and global participation in the Information Society.

As indicated, in 2004 already, the role of ICT and the creation of Information Societies were recognised in the development of the African Union (AU) and the African continent. The WSIS Statement 34 too, expressing its particular view on the development of countries and Information Societies, declares that:

The attainment of our shared aspirations, in particular for developing countries and countries with economies in transition, to become fully fledged members of the Information Society, and their positive integration into the knowledge economy, depends largely on increased capacity building in the areas of education, technology know-how and access to information, which are major factors in determining development and competitiveness.

One of the remaining challenges to the coordination of development on the African continent is the vast number of peoples, cultures and traditions that need to be accommodated. UNESCO's Universal Declaration on Cultural Diversity and WSIS (2003) therefore acknowledge cultural diversity as the common heritage of humankind, indicating that Information Societies should be founded on and stimulate respect for cultural identity, cultural and linguistic diversity, traditions and religions, and foster dialogue among cultures and civilisations. Due to the importance of cultural diversity to this study, the topic will further be discussed in chapter 4 of this study. In addressing the challenges of cultural diversity, the 53rd Vision Statement by WSIS (2003) declared the following:

The creation, dissemination and preservation of content in diverse languages and formats must be accorded high priority in building an inclusive Information Society, paying particular attention to the diversity of supply of creative work and due recognition of the rights of authors and artists.

Furthermore, according to this statement, promoting the production of educational, scientific and cultural content is important, while the development of local content suited to domestic or regional needs is deemed critical in the encouragement of *social and economic development* as well as the stimulation of stakeholder participation, "including

people living in rural, remote and marginal areas”. To this aim, a number of activities were organised to take place in Africa. These activities and outcomes will be discussed in detail in Chapter 3 and Chapter 5 of this study but are briefly mentioned here.

One of the first recorded activities to investigate the state of training in Information Ethics in Africa took place in 2011. Attendees at the 2011 ANIE workshop in Pretoria, South Africa, defined Information Ethics as “a descriptive and emancipatory discipline dealing with the study of the changes in the relationship between people and the world due to information and communication technologies”. They declared, moreover, that in Africa “Information Ethics provides a unique platform to build an Information and Knowledge Society driven by critical reflection on ethos and values within the African Context while addressing opportunities and challenges unique to the development of African societies” (ANIE Workshop, 2011).

The sentiments expressed at this 2011 academic event reflect the contention embedded in the 2003 WSIS declaration on the ethical dimensions of the Information Society, namely that an “Information Society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature”. Statement 57 of WSIS “acknowledges the importance of ethics for the Information Society, which should foster justice, and the dignity and worth of the human person”. At the same time, it acknowledges that since the family is an important building block in society, “the widest possible protection should be accorded to the family and to enable it to play its crucial role in society”.

Explaining aspects of Information Ethics and guiding the global platform, WSIS Statement 58 declared that “the use of ICTs and content creation should respect human rights and fundamental freedoms of others, including personal privacy, and the right to freedom of thought, conscience, and religion in conformity with relevant international instruments”. WSIS Statement 59 explicitly cautions against dangers that should be addressed in the content of Information Ethics, and states that:

... all actors in the Information Society should take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs, such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings.

As mentioned earlier, it seems that, compared to the developed world, the developing African continent leap-frogged into the information age. Parts of the African continent have access to digital technologies far beyond the limited ICT access and availability of the previous century. While access to and the use of digital technologies create elements of opportunity, they also imply acceptance of certain responsibilities and an awareness of dangers to the users if not managed properly. Indications are however that there might be a gap in Africa between users' access to digital technology and their awareness of the opportunities, responsibilities and dangers associated with such access. Although information on the rights and responsibilities (like privacy, plagiarism, copyright, access to quality services, costs of services, etc.) is available, the lack of standardised teaching on these topics from an Information Ethics perspective at universities in Africa emphasises the need for further research.

Capurro (2007), reiterating the view that Information Ethics in Africa is a young academic field and that not much has thus far been published on the impact of information and communication technology on the African societies and cultures from a philosophical perspective, claims that there is no such thing as morally neutral technology. In support of this claim, he argues that technology influences human relationships and reshapes institutions, economies and our moral values, and that ethical perspectives should therefore guide the use of information technology. Regarding Africa, he recommends that African people, their leaders, and African educational and research institutions should critically reflect on the changes in their living environment and on ways to deal with these.

When referring to the first ever UNESCO-supported conference on Information Ethics in Africa (5 to 7 February 2007 in Pretoria, South Africa), the editors of the *Africa Reader on*

Information Ethics (2007) argue that it was inspired by the UN initiative on ICT, the Geneva Declaration adopted by the WSIS in 2003, and the implementation of Action Line C10 of the Geneva Plan of Action. They highlighted the fact that the specific objective of the conference was to study the ethical challenges of the information society facing the African continent and argued that the conference also acknowledged global trends in terms of Information Ethics.

Views expressed at the Pretoria Conference in 2007 suggest that the African continent, although growing fast, had at that point in time not fully embraced all the opportunities offered by ICT as an enabler for the development of information societies, and that researchers, scholars and students in related sciences did not yet fully understand the ethical impact of the use of digital technologies on the broader African community.

As part of its aim, this research study investigated some of the elements related to Information Ethics in Africa, its current status, as well as the way in which it is structured and developed in the African environment. By implication, a number of policies, frameworks and international management structures that have an impact on this kind of environment were also covered in the study (see Figure 4, page 31) for a graphic illustration of role players or stakeholders, elements and policies affecting the research environment).

1.7 Limitations of current research

Indications from the information presented thus far are that, while all relevant stakeholders and organisations directly and indirectly refer to the need for a curriculum to teach Information Ethics in Africa, neither a standardised curriculum nor any training guidelines are available as yet. Furthermore, besides the very early work done by the University of Pretoria, hardly any research has been done on current needs and training content structures at African universities on the teaching of Information Ethics. Additional aspects like the possible effects that such curriculum content and teaching might have on student numbers and the professional qualifications of lecturers should also receive

further attention. Finally, an overview of current literature, as summarised in the preceding paragraphs, suggests that what is missing is a thorough description and structure of a standardised curriculum to teach Information Ethics in Africa.

1.8 The purpose, value and contribution of this study

The significance of this study is linked directly to an urgent need for the development and structuring of an applicable and relevant curriculum model within the personal needs and broad policy frameworks of multi-cultural communities in Southern Africa, so as to teach them of the importance of safe information and alert them to safe access to such information. Based on the planned contribution and limitations of this study, a number of outcomes are envisaged.

As indicated earlier, the main objective of the present study is to develop a curriculum model to teach Information Ethics in Southern Africa. Hence, the study not only gives a historic reflection on recent contributions and research results, but also recognises current attempts to teach Information Ethics in Africa.

The researcher acknowledges that Southern Africa is susceptible to the normal challenges of a developing continent and multi-cultural rural communities. In support of its main objective, the study will reflect on the content and structure of a curriculum model that will contribute to the standardised teaching of Information Ethics in Southern Africa. This will be done in a way to include realities, policies, continental governance and current ICT projects, as well as to address both opportunities and challenges.

The outcomes of this study will further the development of a framework and methodology to motivate and guide all the diverse communities in Africa towards Information Ethics. Then, using emerging lessons and results, the African model will be presented as an exemplar or model for other developing communities and global regions facing the same challenges and objectives.

This study is also aimed at developing and implementing a practical curriculum framework with contextually relevant curriculum options as a means of teaching Information Ethics to various societies within an African context. At the same time, attempts will be made to standardise the meanings and significance of terms and concepts that are part of the broader definition of Information Ethics.

In addition to the anticipated direct and indirect outcomes of this study, the study aspires to observe and evaluate the objectives of the African Centre of Excellence for Information Ethics (ACEIE). One of the objectives of the ACEIE is to improve the quality of teaching of Information Ethics in Africa, not only regarding the structuring of current activities on the African continent, but also regarding the promotion of a focused approach to the teaching of Information Ethics by academic role players. More specifically, the study intends, through scientific research, to design a standardised curriculum for teaching Information Ethics in the African context.

To this purpose, the study in hand will reflect on activities and projects conducted by the ACEIE, established at the University of Pretoria (RSA) in 2012 in terms of a bilateral agreement between the University and the then Department of Communications in the SA government. In support of WSIS UNESCO activities in respect of Information Ethics in Africa, this Centre conducts research and coordinates activities aimed at the creation of stakeholder awareness and knowledge of Information Ethics matters. More specifically, the ACEIE aims to take the topic of Information Ethics to countries in Africa in a practical way by way of workshops. In this sense, the study might contribute to the development of 'healthy' information societies in Africa.

1.9 Chapter division

The thesis is structured around the identified sub-problems.

1.9.1 Chapter 1

The first chapter presents the background of and the rationale for the study, as well as the problem statement and related sub-problems that will form part of the focus / purpose of the study. The research questions guiding the study are again listed in the order in which they are addressed (See Figure 2, page 17)):

- What is Information Ethics and how has this discipline developed on the African continent at large, directly influencing Southern Africa?
- What is the current status of the information infrastructure and policy development that influences human behaviour and information ethics in Southern Africa and what are the main ethical challenges associated with these developments?
- What role does culture play in multi-cultural communities in understanding and interpreting Information Ethics in Southern Africa?
- Why is an Information Ethics framework needed in Southern Africa and what should the main elements of such framework be?

As per academic guidelines, Chapter 1 focuses on the current limitations (unavailability) of a curriculum model to teach Information Ethics in a multi-cultural Southern Africa, describes the research protocol and methods, and clarifies key concepts, terms and acronyms. In addition, the layout of the chapters, each with its focus and contribution to the complete study, is presented in summative form.

1.9.2 Chapter 2

To develop a training framework to teach Information Ethics in Africa and more specific in Southern Africa, it is important to firstly gain a clear understanding of what is understood by Information Ethics – both in definition and history. Chapter 2 is devoted to a discussion of the concept of Information Ethics from a historic perspective and within the context of the development phases of society – from gathering and hunting through agriculture and industrialisation, and up to what is now known as the information age.

1.9.3 Chapter 3

Since the focus of the study is on the development of a framework to teach Information Ethics in Southern Africa, it is important to gain a clear understanding of Information Ethics within the targeted geographical region, and to focus on its development and current status in Southern Africa. This defines the focus of Chapter 3. The chapter is divided into two parts, namely (i) the status of the information infrastructure and the existing policies that guide opportunities and challenges, and (ii) a discussion of the main ethical challenges – access to information; privacy; ownership; cost; power relations; etc. – which all contribute towards the creation of an ethical framework. Part of this discussion will concentrate on the policies and context of Africa as a digital continent. More specifically, this chapter describes the digital technology landscape and justifies the choice of Southern Africa as the focus area to teach Information Ethics.

Chapter 3 further describes the need for and readiness of the envisaged training framework, the political will and role of governments, and the policy frameworks to structure operational guidelines for information societies. Available local, national, and international policies, the role of governments, policy frameworks, and regional organs in Africa, as well as international influences by way of the UN, UNESCO, WSIS, IFAP, various selected academic institutions and universities, the Capurro-Fiek Foundation, ANIE, ACEIE and relevant private sector role players form part of the discussion in this chapter. Finally, the chapter will provide reasons for the discussion and interpretation of specific African countries that can be recognised as leaders in Africa.

1.9.4 Chapter 4

When developing a curriculum model to teach Information Ethics in a multi-cultural Southern Africa, it is important not only to unpack the ethical issues related to the digital and policy landscape (see Chapter 3), but also to understand the cultural diversity in Southern Africa. The consequences of the rich cultural diversity in Southern Africa will be discussed in Chapter 4 as it will eventually have to have an impact on the development of a framework for training Information Ethics (Chapter 6).

Cultural diversity and guidelines for personal behaviour, as well as a need to change human behaviour in the digital world will be highlighted in this chapter. In addition, Chapter 4 will investigate indicators towards the most suitable division of communities into focus areas for a curriculum to teach Information Ethics in Africa. Hence it follows that the chapter will include a discussion of Southern Africa's cultural complexity and its impact on ethical reasoning. The chapter will include the sociocultural contexts that shape not only the discipline of Information Ethics on the African continent and in Southern Africa, but also the different notions of Ubuntu, copyright, privacy and sharing of information.

1.9.5 Chapter 5

Following the description of Information Ethics, the unpacking of the digital landscape in Southern Africa and the ethical challenges in a cultural diverse region, the framework for teaching Information Ethics Southern Africa will next be discussed in chapters 5 and 6. Chapter 5 will outline the current status of Information Ethics teaching in Southern Africa. The focus of the chapter will be on matters related to training and curriculum development theories, most relevant course content, number of students, qualifications of lecturers, choice of involved African universities, textbooks, publications, readers, journals, public lectures and short courses. Information Ethics initiatives and activities at both the University of Pretoria and the University of Zululand will form part of this overview.

1.9.6 Chapter 6

Chapter 6 suggests a curriculum model for the teaching of Information Ethics in a multi-cultural Southern Africa. This chapter will describe what current research evidence indicates about the nature, purpose and roll-out of such a model in the geographical region concerned. Also informing the design of the model will be theoretical views, research data on the training realities in and methodologies most applicable to Africa, and the existing model for the management of information in developing communities. Chapter 6 will also reflect on cultural diversity (discussed in Chapter 4) and its impact on information ethics training in multi-cultural communities.

1.9.7 Chapter 7

The final chapter will present the main research findings and conclusions. Chapter 7 will reflect on the research questions and outcomes in terms of (i) the history and background to Information Ethics both as a theme and a definition, (ii) Southern Africa policy frameworks to enhance development in the digital world, (iii) the impact of culture and cultural diversity on creating ethical behaviour in the information and knowledge societies and (iv) guidelines for a curriculum model to structure digital-based training and internet-based schooling. Chapter 7 concludes with recommendations on related topics that need further attention in future research.

CHAPTER 2 – INFORMATION ETHICS WITHIN THE CONTEXT OF INFORMATION AND KNOWLEDGE SOCIETIES

2.1 Introduction and purpose

Human beings throughout the ages have not only had access to information needed for their survival, productivity and social interaction, but also had the ability to generate, process, use, store and disseminate it. What is different in the current Information Age are the “sources” and “sourcing” of information, the functions it serves (Toffler, 1980) and

the people who not only have access to it, but also the power to use it as they see fit. Access to information is no longer limited to those in power: it has become a “socio-economic right” (Introna, 2005). By implication, ordinary people have the right to participate on-line with others, mostly people they have never met. In doing so, they not only gain access to other people’s ideas, but are also able to freely share their own ideas and views with whoever is interested (Introna, 2005). In doing so, they also create opportunities for others to invade their privacy, monitor their talk, verbally abuse or denigrate them and, by implication, manipulate them or what they ‘post’ on the internet in unanticipated ways (Coenen et al., 2012).

Concerns about this possible abuse of ‘freely available’ information have stimulated debates on the need for some Information Ethics code or other. It is on the origin and development of such a code that this chapter focuses. More specifically, the focus is on the effect of the changes that the use of digital technologies has on people’s lives and on-line behaviour, the factors that have led to these changes, and the issues that have to be addressed in an Information Ethics code.

As indicated in Chapter 1, the focus of Chapter 2 is to contextualise and describe the history and our understanding of Information Ethics. This focus also addresses the second sub-question of this study, namely: what is Information Ethics and where does the concept arrive from? The chapter starts with a description of three revolutions, each of which radically changed the fabric of the Western World and eventually led to the emergence of what is now commonly referred to as the Information Age. Following this description is a comparison of various perspectives on the nature of Information Age societies, the opportunities available to them, and the challenges they have to overcome in order to utilise these. As the scene for the discussion of information has been set, the focus of the chapter shifts, first to the ethics of information in general, then to a description of Information Ethics issues, the origin and development of Information Ethics, and, finally a definition of Information Ethics. The chapter concludes with a summary of key points raised and an indication of what is to follow in subsequent chapters of this research report.

2.2 The Information Age

The term 'Information Age' is applied to the current, historical era that spans the first quarter of the twentieth century to date (Le Sueur, Hommes & Bester, 2013:65). Implied in this nomenclature are the value attached to the availability of information, the emergence of an information economy, the development of information societies, and the inter-connectivity of people and digital technologies. It could therefore be defined as a time or period during which information became easily accessible not only through publications and the manipulation of information by computers and computer networks (WordNet.princeton.edu), but also by the increasing use of and reliance on technology to generate, access, process, use and disseminate information (Kawooya, 2013:43ff). Put differently, the emphasis in the Information Age is on the centrality of information and/or the prevalence of information goods and services – on the economic and social spheres – as well as on the increasingly important role played by information workers in the economic sphere (Kawooya, 2013:43ff).

According to Toffler (1980:35), the emergence of the Information Age was caused by the “explosion of a metaphorical ‘information bomb’”. Sending “concussive shock waves racing across the earth, showering it with a shrapnel of images”, it drastically changed the way we, as people, “perceive and act upon our private worlds” (Toffler, 1980:167). Referring to it as the Third Wave of change to hit Western civilisation, Toffler postulated that, like the first and second waves, it would not only change the way we use energy, make, distribute and use things, but would also result in the inter-relation and inter-dependence of energy production, and distribution systems.

2.2.1 The First Wave / Agricultural Revolution

The First Wave, which effectively wiped out a civilisation comprising small bands of nomadic hunter-gatherers, gave rise to a new, “class-based” and primarily agricultural civilisation. Land was the basis of culture, family structure, politics, and the economy; hence references to this period as the ‘Agricultural Age’ (Toffler, 1980:35). Life, organised

around the 'village', was simple and relatively predictable (Toffler, 1980:167). Information was limited: a child growing up in this period built his/her model of reality on images received from a handful of sources – teachers, priests, chiefs, officials and, above all, the family. Very few adults ever saw a foreign city, and there was no such thing as television or radio to expose them to ways of life different from theirs. Their "info-sphere" was therefore limited to what was offered by nature and the few people with whom they came into contact (Toffler, 1980:167). The messages they received were usually in the form of casual speech — unconnected strings of ideas reinforced by various information givers – parents, family members, preachers, and other members of the same village/community. Consequently, their image of the world was extremely narrow in range.

2.2.2 The Second Wave / Industrial Revolution

The industrial revolution, Toffler's "Second Wave", changed all of this. The economic base of the new society was the mass production of food and goods. Since muscle power alone could not "mass produce", a "gigantic leap" in technology was needed. The "electro-mechanical machines" developed to satisfy this need could "hear, see and touch with greater accuracy and precision than human beings" (Toffler, 1980:40). Because the running of these machines required much more energy than those needed for farming, "irreplaceable fossil fuels" such as coal, gas and oil became the primary energy sources, shifting wealth and power from land owners to oil barons (Toffler, 1980:39).

The speedy mass distribution of factory-produced products also necessitated changes to the distribution system. "Railroads, highways and canals opened up the hinterland and 'palaces of trade' – the first department stores – replaced small village stores" (Toffler, 1980:41). Also new was the emergence of a technological "info-sphere" — telephones, telegraphes, letters, radio, newspapers and television – to enable communication and ensure the effective and efficient distribution of information over vast distances.

These changes affected not only the value systems on which people based their lives but also the way in which they viewed themselves. Gone were the days that the sun

determined their work day: they were now required to work from 'nine to five', either on a factory floor or in a department store (Toffler, 1980:129). Children attended "factory-style schools", where they learnt not only the three R's ('reading, 'riting and 'rithmetic), but also obedience, punctuality and the value of "rote repetitive work" (Toffler, 1980:43) in other words, skills and attitudes on which the smooth operation of industrial institutions and the sustainability of the industrial society rested. People's image of life and their perspectives on what was important were no longer determined by the "village" but by the mass media. Their lives were no longer determined by the 'rules' of nature but by machines. Nature was merely a resource to be exploited for industrial purposes, and people were no more than "cogs" in a "vast, interdependent economic, social and political" machine "whose motions were regular and relentless" (Toffler, 1980:129/130).

During this age, industrial, techno- and socio-spheres were completely intertwined, and economic production was integrated with private behaviour. Consequently, the number of channels from which the individual drew his/her picture of reality multiplied. Children no longer received their images primarily from nature or people, but from school books and from the mass media (newspapers, magazines, radio and, later on, television). While the voices of the Church, State, home, and school were still heard, it was the mass media, operating like a "giant loudspeaker", which shouted its message across regional, ethnic, tribal and linguistic lines. The images flowing in society's mind-stream thus became standardised: in fact, certain visual images were so widely mass distributed/ implanted in private memories that they were literally transformed into icons (Toffler, 1980:167-169).

2.2.3 The Third Wave / Digital Revolution

The digital revolution, which hit the Western World in the early 1970s, constituted the 'Third Wave', according to Toffler (1980:142/3). Its impact "sent the entire Second Wave economy into a shuddering down-spin", starting with the formation of OPEC (the Organisation of Petroleum Exporting Countries). The forming of this consortium literally 'choked off' the industrial world's supply of crude oil, the 'lifeblood' of industrialism. Since the manufacturing of '*en masse*' products were impossible without oil, new ways of doing

were, once again, necessary. A way out of this dilemma was offered by breakthroughs in new scientific fields (quantum electronics, information theory, molecular biology, oceanics, nucleonics, ecology, and the space sciences), and by sciences that focused not on electro-mechanics but on electronics, computers, generic engineering, as well as on the exploration of oceans and outer space (Toffler, 1980:151-160).

Key to the operation of the new “info-sphere” (Toffler, 1980) created by the technologies emerging from these fields, was the computer – a “combination of electronic memory, with programs that tell a machine how to process ... stored data”. The first computers were, however, very different from the desk-top and lap-top computers that can now be found in just about every office, government department and home in the Western world. That it would be possible to use a mobile phone as a computer, was not even considered – it was unthinkable. Operating as “stand-alone units”, they were used mainly for financial purposes. Subsequent developments first changed them into machines with sufficient capacity to be “deployed for a variety of tasks in corporate headquarters” and later into the “small, powerful mini-computers” with which we are now familiar. Currently they can do just about anything people want them to, making information from all over the world available to whoever has access to them, and opening up multiple opportunities for governments and other parties to track people’s movements, even over vast distances. Consequently, they have radically altered not only our “info-sphere”, but also our minds (Toffler, 1980:177/188; Preston, 2003).

As indicated earlier (2.2.1 and 2.2.2), the info-sphere in which previous generations lived and worked, primarily enabled them to communicate with other human beings. While still doing so, the current info-sphere also creates opportunities for machines/computers to communicate with each other and for human beings to communicate with the “intelligent environment around them” (Toffler, 1980:188/9). The new technologies – “microelectronics, computing, electronic communication, broadcasting, the internet, the World Wide Web, cell phones, digital photography, etc. – having become the “default technology” for most of the socio-economic activities in developed countries, affect the way we think about ourselves, our problems, and our life styles. Not only are they able to

“synthesise” information, but also, so it seems, to anticipate the consequences of actions taken by human beings at any particular moment (Toffler, 1980:183; Preston, 2004:35). People can, therefore, no longer subscribe to a localised ‘village’ or ‘decentralised factory’ ethic; nor can they “blindly accept the truths or dogmas propagated by those in power” (Toffler, 1980:184). Instead, every single person has to make his/her own life and work choices, based on the (often digital) information at his/her disposal.

Like its predecessors, this “Wave” is changing the whole fabric of society, steadily “demolishing” its economic bases as well as its societal and cultural structures. Not only the energy sphere but also the info-, psycho-, and socio-spheres have changed. The demassification of the media, the creation of ‘intelligent environments’, the transferral of work from factories and offices back to the home can all be ascribed to changes in the techno-sphere (Toffler, 1980:217). The speed at which images are processed and changed creates the impression that nothing is permanent. Assailed by temporary images (throwaway art, polaroid snapshots, and Xerox copies, for example), the overthrowing of scientific and psychological theories, the cracking of ideologies, the appearance and ‘vanishing’ of celebrities, contradictory political and moral slogans, people are being forced to constantly revise their own image files. Consequently, they begin to question the purpose of their very existence. They ask themselves, where do we, as individuals, fit into this new civilisation? How will we have to change? Will these changes (brought about by digital technology) mean the end of friendship, love, commitment, caring and jobs? How are we going to cope with changes to the deep structure of information on which our daily lives depend? (Toffler, 1980:169/177).

2.3 Information Age Societies

In the previous paragraph the reader noted Toffler’s (1980) reference to the questions asked by the 1980 info-sphere communities. They include the important question about what changes will take place and how people will fit into the envisaged info-sphere communities or information societies. While it is possible that the term ‘information society’ was already used before the first World Summit on the Information Society

(WSIS) in 2003, it was at this summit that it officially became part of Information Age discourse. Used to describe its vision of society in an ‘ideal digital world’ (Capurro, 2013:7), the WSIS intimated that all peoples in such a world should be able to “create, access, utilize and share information and knowledge, ... achieve their full potential ... and improve the quality of their lives” (WSIS Vision Statement 1, 2003). In other words, they should be technologically competent, use the technologies at their disposal in ways that pose no risks to themselves or others, and their governments should “take appropriate actions..., as determined by law, against abusive uses of ICTs” (WSIS Vision Statement 19).

Of particular significance in the WSIS Declaration is the reference to the ideal Information Age society as an *Information Society*. While this nomenclature is still in use, it is no longer the only term used to refer to Information Age societies. Competing with it are two others, ‘knowledge society’ and ‘knowledge and information society’. Why these changes? Do they indicate significant differences in people’s understanding of the digital world? Do they suggest that the forces driving such societies are different? Do they signify evolutionary changes to these forces in general? Have the original nomenclatures simply been “conflated”, as Holmner (2008) posits, due to “difficulties in talking about either [information and knowledge] in isolation from the other”?

One explanation could be that changes in the terminology reflect different stages in the evolution of digital societies. Implied in this explanation is the assumption that, although information is critical to the development of an information society, it is not enough: it also needs knowledge. Another explanation of the shift in terminology could be that the descriptors signify differences in the force driving these societies forward. Implied in this explanation is the possibility of societal co-existence, i.e. that all three societal types – the information society, the knowledge society, and the information and knowledge society – have equal value in the Information Age.

Since both explanations seem to rest on the assumption that, even though they are often used inter-changeably, the meanings attached to the terms ‘information’ and ‘knowledge’

differ. To determine whether or not this assumption is valid, the researcher decided to first compare different definitions of these terms before embarking on a description of different types of Information Age societies. The results of this comparison are presented in 2.3.1. Following it are descriptions of a typical information society (2.3.2), knowledge society (2.3.3) and information and knowledge society (2.3.4). Informing these descriptions are the perspectives and assumptions of theorists from fields such as Computer Studies, Library Science, Philosophy, Political Science, and Media Studies, to name a few.

2.3.1 Data, information and knowledge

Debates on the meanings respectively attached to the terms 'data', 'information' and 'knowledge' are not common. Neither is research on the nuanced differences between them and the impact that not being aware of them could have on a person's understanding and interpretation of events and circumstances. Whereas researchers, statisticians and those working in the information technology field are familiar with the term 'data' and with its meaning in their particular context, it seldom features in common parlance, being subsumed in terms like 'information' or 'knowledge'. What is not clear, however, is what people mean when they use these terms. Do they equate 'information' with 'raw data', with data that has been processed and "fitted into categories or classification schemes", or with classified data that has been "refined into more general statements"? (Toffler, 1990:18). Do they distinguish between 'information' and 'knowledge', or do they use them interchangeably?

These questions are central to discussions on the evolution from and/or the differences between an information society, knowledge society, and an information and knowledge society, since all of these have been and still are used to refer to societies that employ digital technology to access, generate and disseminate information and knowledge.

While Le Sueur et al. (2013:60) argue that knowledge and information are similar since both can be presented in "verbal, written, typed, painted, sculpted, animated, or digitalised

form”, Gadamer (1975) claims that they are not. According to him, it is not the amount of information a person possesses that makes him/her knowledgeable, but the extent to which the person concerned understands the information and is able to use or apply it. Britz (2013) agree with Gadamer that knowledge cannot be acquired without understanding, but Britz argues that understanding does not develop “by its own volition” – only through education or training.

Le Sueur et al. (2013), in line with the thoughts by Toffler (1980:167), stated that ‘information’ that could be presented in visual, auditory and tactile form does not equate with ‘knowledge’. Concurring with Gadamer (1975), Toffler argues that it is the “signals” sent out from the environments in which human beings live that constitute information. Some signals are simple, others complex or conceptual. Some are no more than precepts (“traces of information about the environment”), while others are “linkages that define relationships”. According to Rowley and Hartley (2008), what Toffler calls ‘signals’ are not information, but data. In order to become ‘information’, they argue, the ‘signals’ or data have to be “organised” and “structured” into categories that make them “meaningful, valuable, useful and relevant”.

While both the Oxford Dictionary of English and Roget’s Thesaurus (p.193) define ‘information’ and knowledge in terms of each other, Roget’s definition of the verb ‘to inform’ (p. 207) suggests that they may not be exactly the same. To ‘inform’, according to Roget, includes to ‘communicate’ or ‘convey knowledge of’. Implied in this definition are (a) the presence of both a ‘sender’ and a ‘receiver’, and (b) the nature of the ‘commodity’ that is being exchanged – not ‘information’ but ‘knowledge’. The question is, ‘Where and how did the ‘senders’ acquire this so-called knowledge?’ Did they simply pass on what they observed, read, or heard from someone else, or is it something – an idea, a theory, a proposition – generated by themselves?

If, as Gadamer (1975), Rowley and Hartley (2008) suggest, it is only when a person is able to make sense of information that s/he can be regarded as ‘knowledgeable’, one could argue that, in order to ‘convey knowledge’, the information at one’s disposal first

has to be processed, understood, internalised, and then disseminated and/or put to other uses. The final non-tangible 'product' could then be called 'knowledge'.

Toffler (1980), putting it somewhat differently, posits that it is during the identification of relationships between seemingly disparate signals that people begin to think more holistically. It is at stage that they are able to construct their own image or 'mind-model' of reality. Not only does the construction of such a 'model' signify that a person has developed the kind of understanding that constitutes knowledgeability, but the model serves as a navigation tool that helps the person concerned to navigate his/her way through the challenges encountered in the process. In a subsequent publication (1990:18), Toffler argues that knowledge, thus conceptualised, not only encompasses images, data, and information, but also subsumes "attitudes, values and other symbolic products of society" (Toffler, 1990:18). However, since knowledge is not only expandable but also inexhaustible, no one can ever claim to be completely knowledgeable about anything (Toffler, 1990:10).

Indications from these definitions are that it is knowledge, not information, that enables people to develop to their full potential and to ensure their own well-being (Britz, 2013:16), and it is knowledge, not money, that is the "fundamental cure for poverty" (Capurro, 2007:12).

2.3.2 The Information Society

If, as argued in 2.3.1, the dissemination of information is not the same as imparting knowledge, one could argue that the development of information societies – that is, societies that can access and disseminate information – is a prelude to or first step in the development of a full-fledged knowledge society. Put differently, the first step to becoming an information and knowledge society is to develop from an agricultural, industrial or 'agri-industrial' society into an information society. This basis laid, the second step is to develop into a knowledge society and, finally, into an information and knowledge society.

If there is no difference in the meanings of the descriptors ‘information’ and ‘knowledge’ as applied to societies, one could argue that the name change is no more than a cosmetic exercise. If that were the case, though, why change it again, to include both these terms? Does this change suggest that the sustainability of digital societies depends equally on a solid knowledge base and on the courage to continuously ‘update’ the base in response to new information made available by its information practitioners, academics, researchers, government officials and citizenry?

What cannot be denied, though, is that the nomenclature ‘Information Society’ creates the impression that information is the cornerstone of the Information Age; that it is critical not only to human survival, but also to economic prosperity. In other words, in an Information Society, the “physical, mental and economic survival” of its citizens would depend entirely on the availability of, access to, and exploitation of information (Martin, 1988).

In such a society, information would be “part of every human enterprise”. The most valued commodity or ‘product’ would be information. In that people would be able to buy and sell it, it would not only *stimulate* the economy, it would *be* the economic currency. The generation and dissemination of information goods and services in the economic and social spheres and the “prevalence of information workers in the economy” (Kawooya, 2013:43) would be the norm rather than the exception. By implication, wealth and power would be vested in those who are either perceived as the ‘most informed’ and/or those who have the ability to generate, access, and disseminate information.

2.3.3 The Knowledge Society

When knowledge replaces either manufacturing/industry and/or information as the key “capital generator”, it becomes a ‘knowledge society’ (Toffler, 1980; Britz, 2013:16). In such a society, knowledge would refer not only to the ‘what’ but also to the ‘how’, ‘when’, ‘where’, ‘when’, ‘who’ and ‘why’ of decisions, plans, and actions. The emphasis would be on the use, production and exporting of knowledge, rather than simply on its acquisition.

By implication, 'knowledge workers', who are not only able to analyse, synthesise, re-synthesise and evaluate existing knowledge, but also to generate new knowledge, would be a knowledge society's greatest asset.

Since the economic base of a knowledge society is the "generation, sharing and use of knowledge, rather than the processing of raw materials" (Le Sueur et al., 2013:96), technological and scientific advances would increase. The key goal in a knowledge society would be the acquisition of knowledge that would result in improved procedural and production processes (Roberts, 2009). Because of this, the production, distribution and use of knowledge and information, high-technology industries and the development of a highly skilled labour force would be the prioritised (OCDE, 1996). The generation of ideas would be much more important than physical prowess; the development of new technologies would be more important than the processing of raw materials. However, it is the location and sharing of knowledge that would be the most characteristic feature of such a society (WorldBankGroup, 2003).

2.3.4 The Information and Knowledge Society

According to Toffler (1990:82), the first indication that a knowledge society is changing into an information and knowledge society is when its knowledge workers start using interrelated, contextualised data as information and/or as the basis for theoretical models and knowledge 'architectures'. Further indications are the establishment of new 'networks of knowledge', the linking of new concepts in ways formerly unanticipated, the forming/emergence of new hierarchies, and the generation of new theories, hypotheses, images, languages, codes and logics. Not only established ways of doing will start changing, but also the ways in which those embracing new ways of doing view the world, create wealth, and exercise power. Emerging from these "gigantic upheavals in the knowledge base[s]" will be an information and knowledge society with the potential to become a "super-symbolic economy" (Toffler, 1990:82).

A key feature of an information and knowledge society, one that can be distinguished from its predecessors, is the nature of the workforce, with the bulk of employers and employees being engaged in the processing of information (Le Sueur et al., 2013) and/or the generation and application of new knowledge. Other characteristics are its reliance on sophisticated physical and ICT infrastructures for the improvement of everyday living and working conditions; the value it attaches to information, knowledge and enhanced intellectual ability as a key element in the creation of economic wealth and prosperity, and the utilisation of modern ICTs to facilitate interaction and exchange of information between its local knowledge system (tacit and explicit knowledge) and the global one (explicit knowledge) in order to create usable, relevant and contextualised content and knowledge (Le Sueur et al., 2013:66).

2.4 The ethics of information

The term 'ethics' is typically used either in relation to a code of conduct which indicates the kind of behaviour regarded as appropriate in specific professions, institutions or organisations, or as the nomenclature of a specific academic field or sub-field of study. In the latter case, according to Roget's Thesaurus, it refers to the "science" or "philosophy" of "morals" (Roget, 1952), often in fields like Philosophy and Theology. Regardless of the field of study, the focus of ethics is the critical analysis of and debate on what it is that should be considered good and bad in terms of the way in which human beings live their lives and relate to one another (Britz, 2013:1; Le Sueur et al., 2013:59; Rossouw & Van Vuuren, 2013:3).

What is considered 'good' or 'bad' in the formal study of ethics differs according to the theory or philosophical perspective informing the field of study concerned. In Medicine, for example, which has the preservation of life as purpose, a doctor's conduct would be regarded as unethical if s/he supported euthanasia. In Religious Studies, what would be regarded as unethical would be determined by the specific religion concerned. In Ethics as an independent field of study, however, there is no definitive answer to the question of

right and wrong behaviour: what is regarded as 'good' or 'bad' will vary in terms of the position propagated in the philosophy/theory being studied at a specific point in time.

2.4.1 Philosophical views that guide ethical thinking

Although this study's main aim is not to reflect on philosophers or the various philosophical views, it is important to recognise the interface and interaction between philosophy and ethics. Towards recognising this relationship, it is significant to differentiate between *normative ethics* and *applied ethics*:

- Normative ethics looks at norms and standards that guide decision making and behaviour. It informs decision making in the sense that it indicates what is considered right or wrong and hence influences behaviour. It provides a set of principles that are either internal (i.e. formation of character such as found in Virtue Ethics) or external (looking at consequences as is found in Utilitarian or Consequentialist Ethics) (Oruka, 1990, King, 2004, Mautner, 1996).
- Applied ethics applies the principles investigated in normative ethics. For example: business ethics deals with ethics in the business, corporate and professional environments; ethics of law is concerned with ethics in the legal profession; medical ethics addresses ethical issues that arise from medical practices, etc. (Oruka, 1990, King, 2004, Mautner, 1996).

In this instance then, Information Ethics is an example of applied ethics since it is concerned with the sphere of Information and Communication Technologies (ICTs), the life-cycle of information and social justice concerns brought about by ICTs. However, when confronted with an ethical dilemma, one uses normative ethics to guide one's decision making. By applying these norms or standards, different ways of reasoning provide insight and possible solutions. Listing some influences, Floridi (2013) confirms that ICTs have severely impacted on many aspects of human existence. He mentioned entertainment, work, communication, education, health care, industrial production and business, social relations, and conflicts as areas directly touched by ICTs. He then listed a number of information ethical matters that included; privacy, ownership, freedom of

speech, responsibility, technological determinism, the digital divide, online pornography as topics of Information Ethics. This he names the new philosophical areas of research that investigates the ethical impact of ICTs on human life and society (Floridi, 2013)

Specific information ethical considerations have to be taken into account in respect of the digital environment and the implementation of ICTs in developing countries. A global dialogue on information ethics is necessary to discuss “issues such as privacy, secrecy, intellectual property, online communities, mobile phones, robots, human enhancement, ambient intelligence, ICT implants, information overload and e-waste”. Ethics theories were developed over time, each with its core focus on reasons and motivations for human behaviour. These behavioural theories include the following:

- The development of one’s moral character through the habituation of virtuous behaviour (Virtue Ethics)
- The “golden rule”: “Do unto others as you want them to do unto you” (Deontological Ethics)
- Behaviour and thinking that is aligned with one’s duty towards community (Deontological Ethics)
- Behaviour which, as a study of possible consequences, endeavours to maximise happiness/pleasure for the greatest number of people or to attain maximum utility (Utilitarianism)
- The fair and equal treatment of people, regardless of social, economic, racial, or cultural standing (Social Justice/ Original Position)
- The behaviour of an individual towards another individual or group, evidencing ethical and natural caring as a main characteristic (Ethics of Care) (Oruka, 1990, King, 2004, Mautner, 1996, Fischer, 2017)

It is therefore clear that as supported by the depiction of ethical theories there are three major focal areas when questioning moral behaviour (Dick, 2002). (see Figure 5):

- The motivation of the decision maker, i.e. one’s duty towards others, fair treatment of others, etc.
- The character of the decision maker, i.e. rational, responsible, etc.

- The consequences of the decision, i.e. maximisation of pleasure, utility, etc.

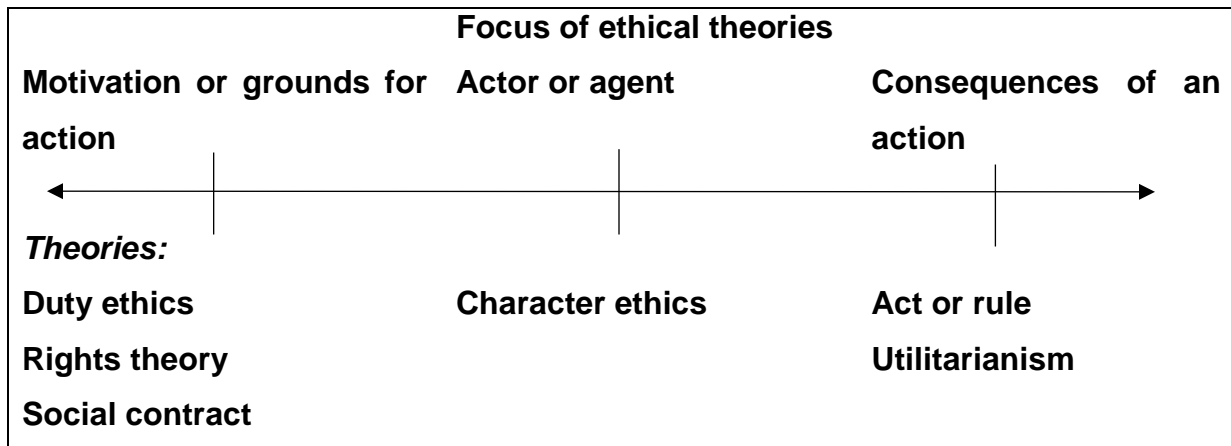


Figure 5: Depiction of ethical theories

Towards inculcating an appreciation and understanding of normative ethics theories – both in students of Information Ethics at the University of Pretoria and in civil society in South Africa – the ACEIE focuses on six major ethics theories:

- Virtue Ethics
- Deontological Ethics
- Utilitarian Ethics / Consequentialism
- Ethics of Care
- Social Justice/ The Original Position
- Ubuntu Ethics

Critical discussions concerning these theories are grounded in the Ethics Pyramid as adopted by Fischer, 2017 (see Figure 6). According to Rossouw and Van Vuuren (2013:5), the Ethics Pyramid seeks to balance three concepts: 1) the good, 2) the self and 3) the other.

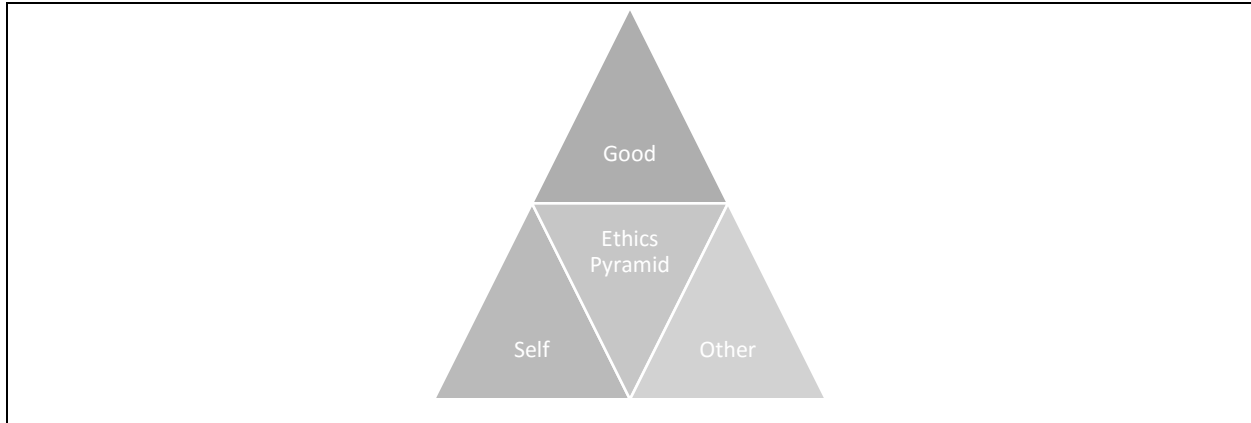


Figure 6: Ethics Pyramid

The aim of ethical decision making and resultant behaviour involves the balancing of these concepts. In order to achieve the “good”, the needs of the “self” and the “other” must be considered. If the “self” is neglected for the good of the “other”, it leads to self-less decision making. In itself, a sense of altruism is not negative, but in applied ethics and in practice it is most probably not attainable and sustainable in the long term. Similarly, when neglecting the “other” for the good of the “self”, one’s behaviour is characterised by selfishness. By doing so, the nature of ethical behaviour – and hence the impact of decision making within society – is questioned. Therefore, it is imperative to balance the needs of both sides towards attaining the “good”. However, one should not forget about the “good” in the process of balancing the needs of the “self” and the “other”. Since ethics “concerns itself with what is good or right in human interaction” (Rossouw & Van Vuuren, 2013:4), the attainment of what is right and good must not be neglected.

These considerations lead to the very practical question of ‘How do we then guide our decision making towards attaining the good?’ Indeed, with many universalists but also relativist theories within philosophy guiding these answers, it becomes difficult to hone the ability to succeed in ethical decision making. The aim of the ACEIE and lecturing staff at the Information Science department of the University of Pretoria is to equip students and civil society to answer this question by applying a variety of theories. By the habituation of asking certain questions, the individual should be guided to make the best decision within each unique situation; hence this is a more pragmatic approach.

As stated before, this study does not aim at contributing to the science of philosophy but rather to reflect briefly on a few theories. Below follows a brief overview of three of the theories directly relevant to this study.

(a) Virtue Ethics

According to Aristotle, ethical virtues need to be exercised in order to build the personal character or one's *ethos*. One becomes just, by doing just actions. Aristotle argues that virtue cannot be presented as a course or a lesson to be taught in a classroom. Interpreting Aristotle this way, it implies that one cannot create guidelines for being virtuous. Virtuosity only comes to fruition when a person with the innate ability to be virtuous acts out and practises virtuous habits. Success therein is limited neither to internal factors (such as ability) nor to external factors (such as practice), but is rather exemplified in the synergy of both factors. Practice of a virtuous character develops abilities that are similar to exercising to become a better athlete (Oruka, 1990, King, 2004, Mautner, 1996, Fischer, 2017).

Virtue Theory was formulated in the 4th century B.C. by Aristotle (384 to 322 B.C.) in his *Nicomachean Ethics*. Everything in life has an ultimate goal, also known as *telos*. For humans, our *telos* is *eudaimonia*, roughly translated as happiness or fulfilment. However, this is not a common, superficial happiness, but rather one characterised by a life well lived – in pursuit of knowledge, riches, etc.

For Aristotle there are four preconditions to the attainment of *eudaimonia*: i) social environment; ii) friends; iii) material provisions and iv) the self. The self then is further cultivated by virtues, 'an activity of the soul, implying a rational principle'. This is where the 'mean' is introduced; i.e. for rashness and cowardice, the mean would be courage. Therefore, the mean is found between an excess and deficiency of something. Virtue Ethics therefore has its locus within the domain of investigating what is deemed a moral character. The rational, moral character is then used as a guideline for one's ethical

decision making and behaviour. To attain one's *telos* or goal towards living a life of fulfilment, Virtue Ethics is not guided by national and international laws and policies. Instead, it is the individual's character which is the guiding principle: "if a person is a good person, then his/her decisions and actions ought to be good". It becomes imperative for the individual to make moral behaviour and habituation of virtues a central characteristic of his/her identity and habits.

In the case of virtue ethics, individuals should ask 'how'. One then proceeds by applying the Golden Mean, namely 'Ask what the virtuous man would do'. The virtuous man is the man who has taken control of his life, cultivated natural dispositions, and acts in accordance with these virtues (Oruka, 1990, King, 2004, Mautner, 1996, Fischer, 2017).

(b) Deontological Ethics

To proceed, it should be noted that deontology derives from the Greek root words, *deon*, which means duty, and *logos*, which means the study of or science of something. In applying Deontological Ethics in ethical decision making, one considers the choices that are morally required, forbidden, or permitted. It considers one's duty towards others when making a decision and guiding one's behaviour.

The representative of this theory is Immanuel Kant who lived from April 1724 to February 1804. Although Kant's postulation of this theory goes much deeper than what is depicted here, cognisance must be made of the fact that course content does acknowledge the depth thereof. Considering the pragmatic approach of this endeavour, our focus is only on the basic tenets. To achieve this, presentations refer to the 'universal moral law', which is further elaborated on in the 'categorical imperative'.

The universal moral law, as a maxim for one's decision making, manifests in the thought experiment that if something can be made universal, it can be deemed as ethical. It should

be underscored that “an ought cannot be derived from an is” (Rossouw & Van Vuuren, 2013:75). Just because something *is* the way it is, it does not imply it *ought* to be that way. One of the core principles in this theory is that it can be applied by anyone, notwithstanding their background, culture and education. Since this decision making is achieved by a rational principle, it can be done by anyone.

In the case of deontological ethics, individuals should again ask “how”. One then proceeds by asking: ‘If my decision were to be made a universal law, would the outcome be right and ethical measured by how others would be affected?’ (Orika, 1990, King, 2004, Mautner, 1996, Fischer, 2017).

(c) Utilitarian ethics

The representatives of this theory are Jeremy Bentham (February 1748 to June 1832) and John Stuart Mill (May 1806 to May 1873). The utilitarian ethics theory basically argues that actions are judged according to their consequences; hence it is also translated as Consequentialism. Regarding the principle of utility, for which Mill regards the ultimate goal as happiness, he states that “Actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain or the privation of pleasure” (Rossouw & Van Vuuren, 2013:80). One must not simply consider the short-term consequences of a decision, instead long-term considerations are extremely important when considering pleasure or pain of the greatest number of people; such as issues relating to justice, education and health care. In so saying, Utilitarianism is also referred to as *Consequentialism*, since it seeks to forecast, either through measurement, planning or a thought exercise, what the short- and long-term consequences would be of a decision or act.

In the case of utilitarian ethics, individuals should ask “how”. To answer this, one must proceed with a “cost/benefit analysis or calculation to determine the right course of action”. Immediate, foreseeable and indirect effects should be included to maximise utility or pleasure for the greatest number of people. In conclusion, the utilitarian and

consequentialist principle is the one that states that the resultant ethical decision and behaviour “is the one that produces the most happiness in comparison to every other available option in that situation” (ACEIE Report, 2017).

(d) Other behavioural theories

Other behavioural theories referred to by the ACEIE include a social justice, rights-based motivation (am I interfering with the rights of another person?), the Ethics of Care based on one’s natural inclination to care for others, and the ethical theory from Africa – Ubuntu (I am because we are).

2.4.2 Information ethical relevance of the mentioned philosophical views

The deontological position, for example, is that there are certain duties that all humans are bound to perform (Rossouw & Van Vuuren, 2013) in terms of their “moral obligation” and that the extent to which and/or the manner in which these duties are carried out, signifies whether or not the person, society, profession or organisation is acting ethically or not. Any action that uses another person as a means to her/his own ends would therefore be regarded as unethical, since it implies that s/he either disrespects or at least does not recognise the other’s “inherent value and dignity” (Britz, 2013:2, citing Kant). Applied to the ethics of information, this would mean that every person involved in the generation, processing and use of information has the obligation or duty to do so responsibly. By implication, information should not be used in ways that show disrespect to or undermine the dignity of any of the parties involved.

The consequentialist position is somewhat different. According to this theory, it is not the intention informing an action, but its outcome that determines whether or not it is ethical. Informing this theoretical position is the question, ‘For whom is the outcome good?’ Put differently, ‘Who benefits from the action?’ If benefits are accrued by the person who performs the action, the outcome is a reflection of “ethical egoism”; if both parties benefit equally, the outcome reflects a spirit of “ethical utilitarianism” (Britz, 2013). Whichever of these two outcomes is regarded as the ‘better’ one in any particular situation would determine whether or not the action itself was ‘ethical’ (Fallis, 2007). With regard to the

ethics of information, the implication is that the final information product – the outcome of the information process – should benefit as many parties as possible. The generation, use and dissemination of information that is false, sub-standard, or promotes dissension or fear would therefore be regarded as immoral or unethical.

Whereas “reasoning and moral justification” (Britz, 2013; Mutula, 2013:29; Velasques, Andre, Shanks, & Meyer 2010), rather than a person’s own (subjective) value orientation determines whether or not an act is ethical or not in an academic ethical debate, this is often not the case in real-life situations. In these situations, what is right or wrong is usually based on or informed by the values and beliefs ingrained in the person/persons concerned – through education, cultural association and/or life experience (Britz, 2013).

In societal contexts, according to Ocholla (2013:21), ethics serves three purposes: to “promote what is good in people”, to “avert chaos”, and to “provide norms and standards of behaviour” that are “inclusive” rather than “exclusive”. Regardless of their cultural, religious, racial, gender or other differences, all human beings are therefore morally obliged to treat all other human beings justly and with the same respect that they would show to those belonging to their own inner circle, community, society or nation (Fallis, 2007; Mutula, 2013; Velasques et al., 2010). The dilemma is that what is regarded as just and/or respectful, differs from culture to culture. In some countries, for example, capital punishment is regarded as just; in others, it is regarded as a human right violation. In some cultures, polygamy is regarded as natural, in others as a travesty. The same applies to information: in some countries freedom of speech means exactly that; in others, it means that a person can say or write what s/he likes, as long as it is politically or religiously acceptable.

The need for some or other ethical code related to the use of information (while increasingly being highlighted in Information Age debates) is not an entirely new phenomenon. In ancient Greece, freedom of speech and expression was highly valued, first as an oral feature in the ‘agora’ (marketplace), and later in writings – Plato’s “dialogues” (Britz, 2013:3); the Christian ‘epistles’ comprising the New Testament in the

Bible; and Martin Luther's written declaration on what he perceived as the Church's misrepresentation of Biblical teachings being cases in point. However, while everybody theoretically had access to oral information, access to written information was limited: written texts, in Hebrew, Greek or Latin, were accessible only to "scholars" and/or the clergy, since most populations were illiterate at the time.

In 1452, with Gutenberg's invention of the printing press, the situation changed. Not only did his invention enable the mass production of written texts, it also created new opportunities for the translation and distribution of texts. Thus a 'book culture' was established which, until the advent of digital technology gave all and sundry not only access to information but also the opportunity to share their own ideas – on social, political, religious and other matters – in written form, with people all over the world. Access to and the accessibility of written information became even easier when libraries formerly established by the Church and/or the nobility were opened to the public after the French Revolution that took place from 1789 to 1799.

Accompanying the increase in the power of the pen, which had become mightier than the sword, came attempts from those in power – first by the Church and later by governments – to exert some form of control over the generation, dissemination and use of information. Those who proclaimed truths about Christianity that did not sit well with the Church were persecuted, prosecuted, tortured and put to death on the basis of their being 'heretics'. Those whose religious orientations were seen as undermining the Christian faith were slaughtered, with government approval, in religious 'crusades' against the 'infidels', and those who used the media to 'satirise' those in power, were prosecuted, fined and/or imprisoned for undermining the power of the State.

Laws regulating the right to 'copy' another person's work, known as copyright (laws) were introduced in Britain in the 18th century, primarily as a means of curbing/restricting the monopolies held by printers and/or to provide authors with some form of short-term legal protection (Britz, 2012:3). With the ever-widening scope and application of these laws, the term 'copyright' was replaced or supplemented by a new legal concept, namely

“intellectual property right”. Whereas copyright laws regulated the creation of intellectual products only, intellectual property rights laws also regulated access to and the distribution of written texts (Britz, 2013:3).

These restrictions are still in place, regardless of the fact that the United Nations declared freedom of speech, freedom of access to information, and freedom of the press as universal and basic human rights in 1984, and the inclusion of these rights as principles informing the constitutions of ‘democratic’ nation states (Britz, 2013:3). Whereas copyright and intellectual property laws have the protection of writers as purpose, other laws are aimed at the preservation of traditional/cultural values or morals. The censoring of information, such as deleting pieces deemed ‘unsuitable’, ‘inappropriate’, ‘immoral’, or ‘politically incorrect’ from texts, banning the release of texts in their entirety, placing embargoes on the release of information, and/or denying the public access to information regarded as ‘sensitive’ or ‘need to know, are examples of these.

Since the advent of digital technology in the early 1970s – which operates as a “cluster of inter-related systems”, effectively blending “micro-electronics, computing, and electronic communications” with one another (Preston, 2003) – the external control of information has become virtually impossible (Rucker, 1988; de Mul, 2003). Because it can “unbundle” information from its “original physical carriers” in a matter of seconds, digital technology is able to “simultaneously” reach and interactively engage twenty-four hours a day (Freeman & Louca, 2002, cited by Britz (2013:5). Once something has been posted on the web, which is a ‘public space’, it becomes common property and can therefore be manipulated by whoever has access to it (Freeman & Louca, 2002). In the process, people – irrespective of their being senders or recipients of the information – are also being “unbundled” (Britz, 2013:5), with no regard for their privacy. Moreover, once something has been posted on a website, it stays there forever (Freeman & Louca, 2002). This is true for both information shared in wording via text and also information shared in pictures via digital photos.

Britz (2007) refers to some carriers of information. These carriers refer to tools that include books, art, writing and pictures. He explains the specific role of digital cameras as technology with the ability to capture pictures and share those pictures on a large scale. His interpretation supports the views of De Mul (2003:156) who emphasised the ability of the camera to picture reality in an objective image. Britz (2007) concludes that modern ICT, including the camera and the computer, contributed to a digital picture of reality that can be shared objectively within a short space of time with one individual or many audiences. Towards realising the aims of this study, such digital tools and subsequent abilities directly address both the accessibility of and access to objective information.

According to Preston (2003), this “ubiquitous” invasion of “most facets” of our human existence “radically changed our way of living ... and the way in which we do things” and especially, with the integration of information with the digital technology, the way that we share information. Not only has the sharing of (volumes and continuous) digital information introduced new power relationships, it has also created “a new and unprecedented form of dependence”. If we are to retain our humanity, and the freedoms associated with it, debates on the need for and nature of an Information Ethics code appropriate for the Information Age have become a matter of the greatest urgency. This relatively new form of communication as part of a digital culture will further be discussed in Chapter 4.

2.5 Origin and development of Information Ethics

Since the impact of the Gutenberg press in 1450, it was undeniably the invention and use of the computer – a “combination of electronic memory with programs that tell a machine how to process ... stored data” (Toffler, 1980) – that served as the impetus towards the development of what is now referred to as ‘Information Ethics’. These “stand-alone units”, originally used chiefly for financial purposes, were over time further developed into machines with sufficient capacity to be “deployed for a variety of tasks in corporate headquarters”, and later, into the “small, powerful mini-computers” (not only desk- and

laptops, but also mobile phones with internet access) that have now become a familiar feature of most offices and homes.

The 2003 WSIS Declaration on Information Societies not only speaks to people's technological competence but also to the ways in which people should and should not use information communication technologies (ICTs). Premised on the purpose and principles of the Charter of the United Nations and the upholding of the Universal Declaration of Human Rights (UDHR), the WSIS Declaration emphasises that while free access to the technologies of the digital world (broadband and/or computer networks) is critical to the economic development of governments, businesses and individuals, it should under no circumstances be used for abusive purposes.

Concerns about possible abusive practices motivated Wiener (1948:27/8; 1950, cited by Byrnum, 2000), an MIT professor, in as early as 1948 to raise concerns about the impact that computer technology might have on society and human behaviour. Comparing computers to the human nervous system, he warned that they might in the long run be used as a means of "reading artificial sense organs", ... the "performance of motors or solenoids", and "automatic control", akin to the fictional Big Brother depicted by George Orwell.

While Wiener coined the term 'computer ethics', he did not define it. This, according to Byrnum (2000), was the prerogative of Walter Maner, a researcher and academic, who described it as "a branch of applied ethics which focuses on the study of ethical problems cultivated by computing technology". Using conferences, workshops and public platforms to raise awareness of the need for computer ethics, it was Maner who made the term part of the common discourse on computer matters. It was also Maner who developed the first university course on and guide for the teaching of computer ethics. (Byrnum, 2000)

It was, however, only in the early 1970s, with the dawning of the Information Age, that 'techno-rebels' (Toffler, 1980:161) like Weizenbaum (1976) gained momentum and increasingly raised concerns about the potentially harmful impact of computer technology

on social values and human behaviour. These rebels, most of who worked in the computer industry and therefore realised the opportunities for the beneficial and harmful use of computer technology, no longer focused only on the benefits and dangers inherent in the use of computers for economic gain and/or military clout. They increasingly warned against the potential effect that computer use could have on the ecology, society and humanity as a whole (Toffler, 1980:161). Arguing that the “fragile biosphere of Planet Earth” could be destroyed by the irresponsible use of computer technologies, they urged people not to become so dependent on these technologies that they would eventually rule their lives. In addition, they advocated the development of technologies that were environmentally and human friendly, and that could be used to advance the lives not only of those with economic or political power, but of all people (Toffler, 1980:163). By implication, as Hammond, Keeney and Raiffa (1998) intimated, people not only had to be educated about ethical issues and trained to “make ethical decisions and take ethical actions” when using ICTs, but every single ICT user should accept responsibility for honing his/her “own sense of ethics”.

The publication of an article on Information Ethos and Information Ethics in 1988 referred to ‘information ethics’ and stimulated debates on information ethics in Europe. A subsequent article by Hauptmann (1991), informed by these debates, suggested that Information Ethics as a topic should be incorporated into fields of study across the academic spectrum. It was only in 1995, though, that an entire conference – the ETHICOMP conference – was dedicated to a discussion of Information Ethics. Held in Leicester (in the United Kingdom), it formed the basis for a subsequent alliance between the organisers of this conference and the organisers of the CEPE (Computer Ethics: Philosophical Enquiry) conference. Together, these two parties provided a forum – spanning well over a decade – for the discussion of computer-related information ethics.

UNESCO, signifying its support for the promotion of Information Ethics at all levels of society, not only invited experts and significant role players to attend and present papers at Information Ethics conferences and at various Information Ethics education and training events, but it also hosted the first ever World Summit on the Information Society

(WSIS), which focused on the 'Ethical Dimensions of the Information Society'. According to Sturges (2009:247), it is the visibility of Information Ethics at events like these that eventually distinguished it from other disciplines and established it as an “emerging discipline” in its own right. Moreover, the compilation of conference papers in print form, as well as the opportunity for presenters to reshape their papers into articles that could be published in academic journals ensured that perspectives on and suggestions regarding the promotion and study of Information Ethics were available to academics who were unable to attend the conference. It also stimulated ongoing research on and a greater understanding of Information Ethics, both as a way of life and as a field of study.

It was probably to maintain interest in, stimulate debates on, and promote research into Information Ethics and related issues that the International Centre for Information Ethics (ICIE) was established in 1999. Founded by Professor Rafael Capurro, the ICIE was the first organisation dedicated to the promotion of Information Ethics. Given its mission to promote scholarship in this field, scholars and practitioners in Information Ethics and related fields are all eligible for membership (Froehlich, 2004). Information Ethics courses offered at this Centre stimulated an increasing interest in the merging of disciplines on issues related to the internet, and gradually changed Information Ethics into a multi-threaded phenomenon (Froehlich, 2004). Indications are that the ICIE contributed significantly not only to a greater awareness of Information Ethics, but also to increasing debates on related issues by those involved in fields such as computer studies, information management, information systems, and information policy (Froehlich, 2004). Also, as evidenced in the quality of papers delivered at the conference on ‘Ethics of Electronic Information in the 21st Century’ held at the University of Memphis (Tennessee), the expertise of Information Ethics theorists and practitioners was greatly honed through the ICIE conferences and symposia (Sturges, 2009).

Even so, it was only after the WSIS 2003 and 2005 Action Line C10 formulated a Plan of Action regarding information societies that the term ‘Information Ethics’ gained the prominence (Ocholla, 2013:30) it deserved. While the term itself was not used, the Geneva Declaration of Principles emphasised the “importance of ethics for the

Information Society". The need for protecting human rights required from information societies to accept full responsibility for the way in which digital technologies are used and/or abused and to ensure that the necessary mechanisms be put in place to at least limit the abusive use of these technologies.

What was clear from the Geneva Declaration (WSIS, 2003) was that it was no longer appropriate to assume that Information Ethics was a topic that should be limited to the Library, Computer (and Information) Sciences. Neither should the focus be solely on the theoretical dimensions and practical applications of computer science or on the consistency or not of a programming language. Instead, Information Ethics should be regarded as something that affected all aspects of human life. This message was reiterated in October 2004 at a symposium on Information Ethics at the Centre for Art and Media in Karlsruhe (Germany). Included in the 45 delegates from 19 countries from across the world were scholars and practitioners respectively schooled in computer science (informatics), computer engineering, library and information science, software engineering, philosophy, law, and management (Froehlich, 2004). The primary aim of the symposium, which took place under the auspices of the ICIE, was to give delegates the opportunity to share their expertise in and perspectives on Information Ethics with one another. What was obvious from delegates' presentations was the importance of reflecting, from an inter-cultural perspective, whether it was necessary and viable to consider the 'localisation' of the internet (Froehlich, 2004).

While not restricted to these disciplines, it was in the Library and Computer Sciences in particular, as well as through the ethics that informed various professions, the promulgation of media laws and the development of policies on the use of information that a more comprehensive understanding of the term 'Information Ethics' was developed. In this regard, according to Froehlich (2004), the most renowned and influential contributor to the uncovering of ethical challenges in librarianship was Robert Hauptman. Not only did he write extensively on ethical issues (Hauptman, 1988), but it was also he who, according to Froehlich (2004), first identified censorship, privacy, access to information, balance in collection development, copyright, fair use, codes of ethics, and

problem clients as some of the problem areas in librarianship. Although a focus on ethical issues was not an explicit part of library and information science, ethical issues related to the use of the library and/or information typically formed part of other courses. A course on referencing might, for example, have included a discussion of the ethics of referencing, such as ascertaining the accuracy of cited information and/or acknowledging cited sources.

Later, when “courses devoted solely to ethics emerged in America, the focus shifted from ethical issues in librarianship to a broader concern of ethical issues in information science, information technology and information in society” (Froehlich, 2004). Specific Information Ethics issues were first highlighted in a 1980 article written by Kostrewski and Oppenheim. Titled “Ethics in Information Science”, their article highlighted topics such as the need for confidentiality of information, bias in information provided to clients or consumers, the quality of data supplied by online vendors, and the use of work facilities as generic Information Ethics issues (Kostrewski, 1980).

The promotion of Information Ethics in Africa, informed by the successes achieved in its promotion through conferences, workshops and training events, followed much the same protocol. A key event in this regard was the first international conference on information Ethics in Africa to be held in Pretoria, South Africa in 2007. Hosted by the University of Pretoria under the auspices of UNESCO, and funded by the then Department of Communications (DoC), later renamed as the Department of Telecommunications and Postal Services (DTPS) in the RSA, it was attended by academics and policy developers from Europe, Northern America and various African countries. Not only was it the first time that Africans could interact with their counterparts in the rest of the world on Information Ethics, but it was also the first time that academics and policy makers in Africa had the opportunity to speak openly to each other on these matters.

Resulting from this conference was the founding of the Information Ethics Society in Africa (IESA), the creation of a digital Africa Network for Information Ethics (ANIE), the establishment of the African Centre of Excellence for Information Ethics (ACEIE), the

launching of “*Innovation*”, an academic journal dedicated to the publication of research articles and papers on Information Ethics, and the development and implementation of an Information Ethics Curriculum for Higher Education. Since then the ACEIE, in its capacity as the administrative secretariat of the IESA, has convened and co-convened numerous Information Ethics conferences, organised and facilitated provincial Information Ethics workshops across Africa, assisted African countries to launch their own ANIE ‘chapters’, and developed a Digital Wellness Toolkit for schools and communities. Much of the successes achieved through these ventures could be ascribed to the ACEIE having established sound relationships with various private sector companies, government departments and/or ministries across Africa. Details regarding all of these activities are described in Chapter 5. Suffice it to say here that an awareness has successfully been established of Information Ethics, both as an academic field of study, a research focus and a way of life in Africa as a whole.

2.6 Information Ethics issues

According to Capurro, Britz, Bothma and Bester (2007:10), there is no such thing as morally neutral technology. Since all technologies create new ways of doing as well as new ways of being, they tend to affect existing value systems and beliefs either positively or negatively, and often replace it with their own (technological) culture and values (Meshabi, 2013:42; Mutula, 2013:31). It follows that any discussion of Information Ethics issues must at least take cognisance of the ways in which modern information communications technology has changed the information and knowledge landscape, as well as the attitudes, values and behaviour of the people whose lives are affected by it (Britz, 2013:4-5). More specifically, discussions should focus on contentious issues – contentious because views on them differ in terms of culture, geographical location, literacy levels, and the development status of the country or region concerned.

Key issues not yet addressed in this chapter, but of seminal importance in the promotion of Information Ethics and the sustainability of information and knowledge societies, include matters arising from access to and accessibility of information; plagiarism;

copyright; privacy; safety and security; information poverty and overload; e-waste; and tensions arising from the perceived imposition of global/Western philosophies and values on inhabitants of other parts of the world.

2.6.1 Access and accessibility

Access to and the accessibility of information feature prominently in Information Ethics debates. ICTS are now a common feature of most people's place of work and, increasingly, of most homes, schools and places of higher learning. Information Communications Technology provides access to information through telecommunications, including real-time communication options (Le Sueur et al., 2013:64).

Unlike pre-digital information technologies, e-mail, web-cam and interactive TV, modern information communications technologies are able to simultaneously reach millions of people, allowing synchronic interactivity and the customisation of needs. In doing so, they enable people from all walks of life to acquire information on just about anything, at any time of the night or day; they create opportunities for individuals to register for on-line courses offered by local or international institutions of learning; they make looking and applying for jobs easier with websites dedicated to this purpose; they contribute to the forming of virtual relationships by enabling users to interact with users in other parts of the world; they help users to maintain verbal and visual contact with distant family and friends by 'skyping'; and they enable power shifts by creating opportunities for ordinary citizens to participate in online political activities (their use in grass-roots protest and liberation and peace movements being cases in point).

Pre-digital information technologies did not have the ability to simultaneously reach millions of people. Using ICTs rather than print media to generate, access or disseminate information is much faster and cheaper. Because of this, not only the nature, scope and definition of information has changed – 'everything has become information' (Britz, 2013:5).

With information in everything and carried by all digital equipment, it is relevant to again note the warning by Froehlich (2004). He argued that due to the introduction of the World Wide Web, sharing of information has become so quick and easy that issues of credibility of information have now also become a common concern. This concern is especially pertinent in the assessment and evaluation of websites' credibility, especially those that purport to provide information.

In addition to theoretical discussions related to access and accessibility, the practical questions related to these matters are also relevant. These practical questions include the detail of government policies, legislation, and the overview of clauses in countries' constitutions. Other practical questions relate to the position of access to information via sign languages for people with hearing disabilities and Braille documents for people with visual disabilities. Hence, the digital landscape and policy environment in Africa will be discussed in the next chapter.

2.6.2 Privacy, plagiarism, copyright and intellectual property

Because ICTs have become cheaper and therefore more affordable and accessible to ordinary people, they have profoundly changed previous notions of privacy and access to information. Nobody's ideas are their own property anymore; thus, previous notions of privacy, plagiarism, intellectual property and copyright on the one hand, and freedom of speech on the other, have been changed fundamentally (Meshabi, 2013:40).

In addition, the way in which privacy is conceptualised also differs. While it is closely related to the self in Western cultures, in others (like the Buddhist cultures) it relates to the "non-self", with privacy as an adjunct of compassion being quite plausible (Hongladarom, 2007). In yet other, African cultures, for example, privacy relates to the "collective self". Consequently, understandings of, social perceptions of and/or interpretations of privacy will be different (Nakada & Tamura, 2005; Capurro, 2005; Capurro et al., 2013), as will be the laws aimed at its protection.

Given these differences, it is not surprising that the breaching of privacy in online environments is pervasive. In 2012, for example, the *Daily Nation* carried an article claiming that companies producing many of the most popular smartphone applications for Apple and Android devices routinely gather the information in personal address books on the phone. In some cases, they store it on their own computers before transmitting it, without the knowledge of its original 'owners'. Facebook, Twitter, Foursquare, Instagram and others were reported as 'uploading' either users' contact phone numbers or e-mail addresses to their servers for matching purposes. These applications often perform this action without seeking permission or informing the owner of how long they plan to store the data. In 2012, Path iPhone App users were surprised to learn that the address book contacts of their e-mail addresses and phone numbers had been uploaded and stored on Path's servers. Moreover, Google announced plans to review its privacy policy that would legitimise releasing information of its clients to third parties without their clients' consent (Google, 2013).

Social media providers, being aware of the dangers inherent in the use of social media, expect users of their services to adhere to some basic standards of ethical behaviour, but according to Mutula (2013:35), the mechanisms they have in place to enforce compliance to these standards remain weak. Facebook, for example, has a *Statement of Rights and Responsibilities*, as well as a *User Privacy Policy* in place, which governs their relationship with users and others who interact on their social media platform. The privacy policy provides guidelines on proper interaction between users on the one hand and the ways in which Facebook may collect and use clients' information and content. In terms of its agreement with users of its site, Facebook has the exclusive, transferable, sub-licensable, royalty-free, worldwide licence to use any content posted on its site (Facebook, 2012). Although the intellectual property licence theoretically ends when a client deletes the content of his account, it stays on the site unless those with whom it was shared also delete it and existing back-up copies have been erased. Facebook says it relies on client trust to protect other users' rights and to enhance safety (Facebook, 2011). It also does not allow u/13s or sex offender convicts to use its services, but there are no explicit ways of ensuring this or verifying the integrity, honesty, reliability or

accuracy of the information they receive from users (Facebook, 2012). To safeguard themselves against possible litigation arising from a breach of their users' rights by other users, the policy guidelines of all the major social media platforms explicitly indemnify them, as service providers, against liability.

Concerns by users about the ways in which social media networks engage with users' information are reflected in a threat by the 2011 hacktivist group 'Anonymous' to bring down Facebook. Hacktivists, ardent supporters of WikiLeaks, in a decoded voice on a YouTube video, warned users that "everything they did on Facebook stays on it, regardless of the user's privacy settings, that deleting their accounts were impossible and that changing the privacy setting to make their Facebook accounts more private was a delusion" (Mutula, 2013:30-31, citing Arico, 2011). This then emphasises the important role of policies related to cyber-security and cyber-safety. (The topics-related policy statements will be addressed in Chapter 3.)

2.6.3 Safety and Security

The safety of clients, as well as the security of technological devices, is also a key Information Ethics concern. Chien-Pen and Chen (1999), for example, having conducted research on the impact that the use of computer networks and telecom systems has on their security, identified an increasing occurrence of hardware theft (supposedly as a cost-saving measure); infringements on software copyright; security system break-ins; viruses; the use of ICTs to view "objectionable" or "obscene" material; and the "downloading of music from the Web" (also a copyright violation). Carbo and Almagno (2001:157) focused on the consequences of increased access to networks and systems, and found that the easier it was to access them, the greater was the likelihood of software copyright infringements and hardware theft.

Computer security system break-ins and the dispensing or spreading of computer viruses could also, according to Carbo and Almagno (2001), be ascribed to ease of access, misunderstandings, inadequate consideration, or refusal to acknowledge "many critical

issues related to information access”. Informed by these findings, they recommended that people who use ICTs should be informed about the “possible and real consequences of their actions”, and taught to “reflect on the ... choices they may make and (on) how best to use” the technology at their disposal (Carbo & Almagno, 2001). While of the opinion that ICT users should develop a “sense of ethics” that would enable them to “make ethical decisions and take ethical actions”, Carbo and Almagno (2001:51) cite Hammond, Keeney and Raiffa (1998), but have a sense that this will not happen. Instead they surmise that it might well at some future stage be necessary for service providers to “limit” internet access to “certain groups”.

Although the digital surveillance of public spaces and the use of new technologies to track the movement of individuals through radio frequency identification (RFID) or ICT implants (ETICA, 2011; EGE, 2005 & 2012) are purportedly supposed to ensure the safety and security of users and their equipment against unintentional or intentional dangers (Capurro, 2013:9), it could also be regarded as a threat to the autonomy, anonymity and trust-forming basis of democratic societies. There have already been attempts by overzealous governments and organisations to restrict access to social media, especially when they believe such new ICTS are being used for political agitation against the government in power.

A case in point was the beating of Ahmed Maher Ibrahim, a 27-year-old civil engineer, by Egyptian government officials in 2008 for using Facebook to support calls for a general strike on 4 May, President Mubarak’s 80th birthday. From an Information Ethics perspective, security ‘abuses’ like these need to be closely scrutinised and monitored (ETICA, 2011; EGE, 2005 & 2012). If not, new technologies (especially social media) open the door to numerous risks, including breaches of confidentiality, conflicts of interest, and misuse of organisational resources (Lindsay, 2010; Mutula, 2013:30/31).

This discussion will further be extended in Chapter 3.

2.6.4 Information poverty and information overload

Although, according to Britz (2013:71-79ff), information and knowledge poverty is nothing new, there is still little agreement on what the term actually means. Attempting to clarify its meaning, Britz approaches it from three inter-related approaches – an information connectivity approach (focusing on connectivity to modern information and communication technologies); a content approach (focusing on the role that the unavailability of information plays in the creation of information poverty); and a hermeneutic approach (focusing on the ability to apply meaning to and benefit from information). Informed by the outcome of this investigation, Britz (2013:75) concludes that information and knowledge poverty can only be understood in relation to the availability and accessibility of quality and relevant information that is appropriate to the survival and other needs of a person or group. Since the accessibility of information is closely related to an individual or group's ability to assign meaning to and use the information accessed, overcoming information and knowledge poverty is a matter of education and concern about the attitude of individuals towards the value of information – not only economically but also socio-culturally.

Defining information and knowledge poverty as a “situation in which individuals and communities within a given context do not have the requisite skills, abilities or material means to obtain efficient access to information, interpret it and apply it appropriately”, Britz (2004:199) argues that the existence and functioning of an effective information infrastructure and the resources necessary for the satisfaction of human needs are essential. Moreover, unless information about these resources is unbundled, it will not be possible for potential users to gain access to either the resources or to the information they need.

Some of the indicators identified by Britz (2013:77-78, citing Repoet, 2003) as quantitative signifiers of information poverty are the number of telephone lines per hundred people, access to the internet, literacy levels, access to cable television, the number of personal computers and cellular phones in homes, and the frequency of social media usage.

Qualitative signifiers that focus on the information-related behaviours and life experiences of individuals and groups include the way in which people value and react to information, their ability to understand their own information needs, their knowledge of where and from whom to obtain the requisite information, and their ability to evaluate, put to effective use, communicate and share information and skills in the creation of new knowledge.

The shift from information and knowledge poverty to sufficient information and knowledge requires the bridging of what is commonly referred to as the digital divide, a “popular concept or phrase used to explain the inequality of information access and use, largely with respect to ICTs within or between individuals, families, communities, nations and regions” (Van Dijk, 2005, Ocholla, 2013). Factors causing the digital divide include (but are not limited to) education and income levels; unemployment; infrastructure; values assigned to information; and the cost of access to information (Lievrouw, 2000; Norris, 2001; Webster, 2002; Van Dijk, 2005:75; Ocholla, 2013:26). Also, according to Habermas (1989) “lack of access to and/or use of modern digital technologies [is] users’ inability to access the kind of information for human development and prosperity, and/or deficiencies in the quality of available information”. Deficiencies in the quality of information are often the result of restrictive policies and legislation; censorship; the cost of digital equipment; access; online education; and inability of people to understand, process and attach meaning to available or accessed information in various contexts and situations (Lievrouw & Farb, 2008; Introna, 2005).

Information overload, which represents the other side of the information spectrum, could be just as detrimental to individual and societal development as information poverty. Indications are that the younger generation in particular is becoming increasingly ‘addicted’ to ICT and ‘virtual’ online interaction. Too much information could also increase users’ stress levels, and thus have a negative effect on their physical and psychological health. It is therefore crucial, according to Capurro (2005; 2013:10), that the time spent on ICTs be limited. Users should create so-called ‘cellphone -free time’ and/or spend time in cellphone-free and WiFi-free zones in order to protect themselves from the necessity of being permanently available.

2.6.5 e-Waste

Unless ethically managed, e-waste – the dumping (disposal) and recycling of ICT devices – could have major consequences not only for the environment, but also for human health and wellness (Feilhauer & Zehle, 2009). What is even more alarming is that developing countries, Africa being one of these, is being used as dumping grounds. The ethical perspective on this issue, according to Capurro (2013:10), is derived from Foucault's theory on the art of living. This theory draws a distinction between technologies of production (that enable the production, transformation and manipulation of things), sign systems (that permit the use of signs, meanings, symbols or signification), technologies of power (that determine the conduct of individuals and submit them to certain ends of domination), and technologies of the self (that permit individuals to transform themselves) in order to attain a certain state of happiness, purity, wisdom, perfection or immortality (Foucault, 1988:18).

2.6.6 Global and inter-cultural Information Ethics

Included in information ethical concerns are information poverty, information overload, digital divides, gender discrimination and censorship (Ess, 2009; Himma & Tavani, 2008). These concerns are about tensions that arise from calls for universal Information Ethics on the one hand and inter-cultural information ethics on the other. In the field of Information Ethics, these issues are regarded as objects requiring ethical scrutiny, not only with regard to universal rights and principles, but also with regard to the acknowledgement of and respect due to cultures other than those of the Western World (Capurro, 2008; Capurro et al., 2007; Hongladarom, 2007; Capurro, 2006).

Whereas the WSIS Action Line C10 holds that the values that information societies should adopt are 'universal', there are those who perceive them as an attempt to 'globalise' the world, assimilating and, by implication, destroying not only the values of non-Western nations, but also their languages and cultures. Even though Mutula (2013:30) argues that

the focus of universal values is on the promotion of the common good and the prevention of ICT abuse, Capurro (2013) and Ocholla (2013:21, 26) warn that historical and geographical singularities give rise to different kinds of theoretical foundations and practical options. They also argue that it is inevitable that the “global penetration of the internet and the mobile phone”, which are fast merging into a single device. Hence Mutula (2013:30), while advocating universal values aimed at the promotion and protection of the common good, also advocates for values that support the respect, preservation, promotion and enhancement of cultural heritage and diverse forms of digital and traditional media.

The key issue here is whether it is possible for different human cultures to survive/flourish in a global digital environment without risking isolation (Capurro, 2007; Capurro, 2013:10). This tension, according to Scheule, Capurro and Hausmanniger (2004) should not be considered merely as a problem of technical access to the internet, but also of how people can better manage their lives by using new interactive digital media while avoiding the danger of cultural exploitation, homogenisation, colonialism, and discrimination. Individuals and societies need to become aware of different kinds of ‘assemblages’ between traditional and digital media to be able to relate them to their needs, interests and cultural backgrounds (Scheule et al., 2004; Orig & Collier, 2005;). Concepts like hybridisation and polyphony should be taken into account when envisaging the possibility of a freer, more peaceful world, which is the WSIS vision of an inclusive information society.

That these issues do not merely constitute an academic point of debate is signified in a 2007 Microsoft report prepared by Harper, Rodden, Rogers and Sellen (2008:57). In it they warned that by 2020, “new technologies” could promote “new forms of control or decentralisation, encouraging some forms of social interaction at the expense of other, and promoting certain values while dismissing alternatives”. According to this report, the iPod, for instance, could be used to instil a culture of “urban indifference”, the mobile phone could be used to promote “addiction to social contact”, and the Web could be used to “subvert traditional forms of governmental and media authority”.

The conclusion of the Microsoft report addresses what lies at the heart of Information Ethics. It emphasises not only the importance of interpreting the cultural implications in terms of a “wider context” than the “technical capabilities” of “neural networks, recognition algorithms and data-mining”, but also the importance of remembering that “computer technologies are not neutral – they are laden with human, cultural and social values”. Consequently, they could be designed and/or used to undermine or promote the way in which different cultures utilise them.

Capurro (2013:110) warns that the primary task of digital Information Ethics is to serve as a critical and ongoing “interdisciplinary and intercultural ... reflection on the transformation of humanity through computer technology”, and it “emphasizes the value of inclusive, inter-cultural information and knowledge societies”. To this purpose, he refers to an address by Roosevelt, delivered on 27 March 1958, at the 10th anniversary of the United Nations’ Universal Declaration of Human Rights. Asking where universal human rights actually begin, Roosevelt (cited by Capurro, 2013:12) intimated that they start in “small places, close to home, so close and so small that they cannot be seen on any maps of the world”. They represent “the world of the individual person, the neighbourhood he lives in, the school or college he attends, the factory, farm, or office where he works”. As such, this is where “every man, woman and child seek equal justice, equal opportunity, equal dignity without discrimination” (Capurro, 2013:12).

While Roosevelt’s address was delivered long before the widespread use of digital technology or the appearance of Information Ethics debates, its conclusion underlines the premise on which Information Ethics rests, namely that “unless these rights have meaning there (close to home), they have little meaning anywhere. Without concerned citizen action to uphold them close to home, we shall look in vain for progress in the larger world.” By implication, according to Capurro (2005a; 1996; 2013:12), the main task of Information Ethics as a field of study and a code of conduct, is to create an awareness of challenges and options with which digital technology presents modern-day societies. According to him, it presents Information Age citizens with the opportunity to “transform themselves

and their relations in and with the world ... while taking care of historical, cultural and geographical singularities” (Capurro, 2013).

2.6.7 Ethical codes

According to Metcalf (2014), ethical codes are mostly written in response to conditions that present themselves in practice from time to time. The most influential ethics codes are hard-won responses to major disruptions, especially medical and behavioural research scandals. Such disruptions re-open questions of responsibility, trust and institutional legitimacy, and thus call for the codification of new social and political arrangements (Metcalf, 2014). From this article it seems that, in practice, the expectation of change should be observed in describing ethics. In the digital environment, this change could originate from changes in behaviour and the changes in available digital technology.

2.7 Defining Information Ethics

In the previous paragraph the development and historical overview of Information Ethics and the identification of the main informational ethical issues were discussed. It is now important to define the relevance of Information Ethics means to this study.

While ethics is a concept that has come of age, the term ‘Information Ethics’ is fairly new in literature. It was first used in discussions on ethical challenges posed by the increasing availability and use of ICTs, and later also with reference to information-related issues highlighted at the 2003 and 2005 World Summits on Information Societies (WSIS). Key among these issues are changes in the relationship between people and the world, due to information and communication technologies (Action Line 10 of the WSIS Plan of Action).

Eventual familiarity with the term could be ascribed to the “rapid increase of societal debates on ethical issues” since the appearance of the internet (Capurro, 2013). Indications from debates, research and articles on Information Ethics are that there is a relatively consensual understanding of what it is, why it is important, and how it should be

promoted. Even so, definitions of the term differ. In the first instance, it depends on the theoretical perspective, philosophical orientation and/or value system of the person/s defining it. In the second instance, it depends on the object of the definition – Information Ethics as a concept, a code of conduct, or a field of study.

The sometimes radically different meanings ascribed to the term have contributed markedly to the evolution of a global understanding of Information Ethics as a concept and, eventually, as a new academic field of study. Originally derived from computer ethics (Wiener, 1948; Maner, 1978; Weisenbaum, 1976) and librarianship (Hauptmann, 1988, cited by Froehlich, 2004), the term ‘Information Ethics’ was used to refer to the “philosophical foundation of computer ethics” which again according to Floridi in 1999 served as basis for the “moral principles” informing the “problem-solving procedures in computer ethics”, as well as the “professional codes of conduct, rules, guidelines, advices, instructions or standards” of “computer or information-related legislation”. (Froehlich, 2004)

Definitions of Information Ethics as a concept focus on the growing availability and use of ICTs and resultant changes in the relationship between people and the world (ANIE, 2007). These definitions form the basis of a discourse that focuses on moral questions related to the life cycle of information, that is, the generation, gathering, organisation, storage, retrieval, and use of digital information (Britz, 2010).

Concluding from the various views and definitions, it is clear that in information and knowledge societies, Information Ethics describe the preferred human behaviour that will ensure safe access to safe information for all.

2.7.1 Information Ethics as a code of conduct

According to Britz (2010), the extent of and the ways in which Information and Communication Technology (ICT) supports the different information life cycle activities in society and the workplace play a pivotal role in the shaping, understanding and defining

of Information Ethics (Britz, 2010). In this context, Information Ethics could be defined as the “broader domain of professional ethics”, encompassing the ways in which professionals – that is, “the creators/distributors of information products and services, information mediators (including librarians)” – and the general public “engage with, respond ... and react to ... ethical issues arising from the use of digital technologies” (Britz, 2010).

2.7.2 Information Ethics as a field of study

Traditionally focusing on “moral questions relating to the life cycle of information as it pertains to its generation, gathering, organization, storage, retrieval, and use”, Information Ethics as an academic field of study has expanded to also include “the broad examination of issues related to privacy, security, access to information, intellectual freedom, quality and integrity of information, as well as intellectual property rights” (Britz, 2007). As a branch of applied ethics, it studies what is “morally good or bad, specifically in the context of the handling of Information, and the Information Age” (Le Sueur et al., 2013). Informing it are three dominant Western ethical theories that together demonstrate the difficulties and contradictions arising from the conceptualisation and contextualisation of ethics (Ocholla, 2013, referring to Fallis, 2007; Ocholla, 2009; Ocholla, 2010; Britz & Buchanan, 2010).

As both a “descriptive and emancipatory discipline”, Information Ethics explores, analyses and evaluates changes brought about in the “relationship between people and the world” (Capurro, 2008:2011) as a result of information and communication technologies. More specifically, it examines the effect that these technologies have on people’s privacy, security, access to information, intellectual freedom, as well as on the quality and integrity of information (Britz, 2010; Le Sueur, Hommes & Bester, 2013). Descriptive theories are particularly suitable to the exploration of the power structures that influence attitudes towards and traditional ways of using information in different cultures and epochs. It is, however, the inclusion of emancipatory theories that should enable scholars and students to critically evaluate these. Used together, the two theoretical positions create opportunities for scholars and students to explore and evaluate not only moral or life-

world values, the creation of new power structures, and myths in the information and communication field, but also hidden contradictions and intentionalities in information and communication theories and practices, as well as the development of ethical conflicts in the information and communication field (Capurro, 2008).

2.8 Conclusion

As indicated earlier, the aim of Chapter 2 was to contextualise and describe the history and our understanding of Information Ethics. The chapter therefore addressed the second sub-question of this study, namely: what is Information Ethics and where does the concept arrive from? The chapter described of three development revolutions, each of which radically changed the fabric of the Western World and eventually led to the emergence of what is referred to as the Information Age. Towards further answering the sub problem the following were captured; a description of Information Ethics issues, the origin and development of Information Ethics, and, finally a definition of Information Ethics.

One of the conclusions is that the meanings ascribed to '*information*' and '*ethics*' in debates on Information Ethics and related issues have significantly affected people's understanding of and attitudes towards the need for some form of information ethics that accommodates both universal and localised ethical theories/philosophies, cultures, values and practices. Consequently, there is not a conclusive definition of Information Ethics yet. In some instances, the focus is on the 'narrow' definition of Information Ethics; in other instances, the focus is on a broad definition of the same.

Narrow definitions focus on the impact that digital technologies, ICTs in particular, have on society and the environment. The focus of these definitions is therefore on ethical issues related to the use of the internet, digital information and communication media (Capurro, 2013), as well as on the responsible use of ICTs in information society as enunciated by the WSIS (Mutula, 2013:29). In a broader sense, it is concerned with information and communication beyond digital media (Capurro, 2013:9).

From the above it seems that defining Information Ethics for the African environment is not an easy task. Firstly, such definition should be objective not only for Africa, but it must reflect universal acceptance. A second requirement would be that it should consider a culturally diverse sensitivity within the digital environment. The third condition for such definition is that it should allow for change and development, as the need for ethical behaviour matures and grows with the digital technology.

In Africa, Information Ethics is a developing set of guidelines to steer the personal behaviour of digital citizens in their interaction with other digital citizens and communities. These developing guidelines must be clear and acceptable to all. One should add that such guidelines will, within the growing digital environment, have to be formulated and shared to ensure compliance towards safety and comfort for all digital citizens when digital development includes communities.

Chapter 3, which follows, describes the digital landscape in Africa, Chapter 4 deals with the notion of inter-culturalism, and Chapter 5 discusses the challenges that have to be overcome in the promotion and development of Information Ethics as a way of life.

The design of the Information Ethics university curriculum, the Digital Wellness Toolkit for Schools and Communities, and the conceptual curriculum model – a framework for the teaching of Information Ethics in Africa (which emerged from these) – are presented in Chapter 6, the final chapter of this research report. Informing it is a clarification of Information Ethics definitions sent to the researcher by Britz (2007). In terms of this clarification, the “broader domain of professional ethics is of importance” as it conceptualised Information Ethics as “the ways we as professionals engage with, and respond and react to ethical issues”. Key main stakeholders that are affected by this array of ethical issues represent three groups: the creators/distributors of information products and services; information mediators, including librarians; and information users. Information and communication technology (ICT) supports the different information life-

cycle activities, and plays a pivotal role in the shaping, understanding, and defining of information ethics.

CHAPTER 3 – THE SOUTHERN AFRICAN DIGITAL LANDSCAPE: ADDRESSING CHALLENGES TOWARDS AN INFORMATION ETHICAL PERSPECTIVE

3.1 Background

The main purpose of the previous chapter was to better understand the concept of and history of Information Ethics. This understanding is vital to the objective of Chapter 3, namely to interpret the realities and challenges related to Information Ethics as part of the digital environment in Southern Africa on the following levels: physical infrastructure, policy frameworks, human capacity and socio-economic structure.

The broad aim of this study is to develop a curriculum model to teach Information Ethics in Southern Africa. This chapter therefore aims to understand the elements and challenges that make up the Southern Africa digital context or landscape – a context that does not only describe the status quo of ICT infrastructure in the region but also attends to the political will and policy framework to ensure that infrastructure is used resourcefully. To observe the Southern Africa digital landscape, this chapter attends to four focus areas. The first is to establish an overview of Africa (as well as Southern Africa) as a connected continent. This overview will attend to the current state of the African digital landscape, with reference to selected African countries. As the African digital landscape is influenced by certain global factors, the chapter will also give an outline of relevant aspects of the international landscape. These factors include global tendencies, international policy guidelines and available global digital infrastructure. Various influential international organisations (for example the ITU) are involved in managing these aspects and the study will focus on the role players and elements involved. In order to find influences from Africa's international position as a connected continent relevant for this study, specific countries have been selected to represent particular relevant examples of geographical reference (Egypt); policy frameworks (Ruanda); connectivity (Kenya); Botswana (economic strength); and South Africa (part of the geographical focus area of this study). The second focus of this chapter attends to the challenges that the region faces by being digitally connected. The third focus attends to the need for and role of governments in

addressing the challenges. The last part addresses the ethical challenges that could result from a lack of skills and training in the use of ICT and the need for a curriculum model to teach Information Ethics.

3.2 Introduction

Article 19 of the Universal Declaration of Human Rights by the General Assembly of the United Nations in Paris on 10 December 1948 confirmed that the freedom and capacity to receive and communicate information is a basic human need and right.

The freedom and capacity to receive and communicate information underwrites our ability to have access to information in all aspects of our lives – our work lives, studies, entertainment, personal relationships, lifelong learning endeavours, health, history, culture, language, the exercising of our rights, and participation in democratic activities (Bindé et al., 2005). According to Bindé (2005), the documented principles adopted during the WSIS in 2003 and 2005 are intended to strengthen the links between a person, his/her broader society, as well as the cultural and economic dimensions of information access and use.

For a practical curriculum of teaching Information Ethics in Southern Africa to emerge from the current study, it is important to understand the historic development of the concept of Information Ethics. This was explained in Chapter 2. Having grasped this insight, it becomes essential for the reader to further understand the influence of digital infrastructure in the educational as well as socio-economic development of the African continent. The digital infrastructure has a direct impact on our freedom and capacity to receive and communicate information. It is crucial to create the context for understanding the ethical challenges in Digital-Africa and its information societies towards developing a curriculum to teach Information Ethics in Southern Africa.

3.3 Context

Many popular remarks in the digital environment aim at either motivating or scaring people. However, some of these remarks emerge from interesting statements that

(although they have no proof) can lead to noteworthy results if they eventually come true. For instance, it is remarked that by 2018, half of the world will be connected to the internet and by 2020, 34 billion devices will be connected to the internet – which implies more than four devices for every human on earth. By 2020, 24 billion IOT (Internet of Things) devices will be installed, with even agricultural companies using sensors to collect data for precision farming, insurance companies tracking customers' driving habits for usage-based insurance, and utilities companies remotely monitoring their customers' power usage. During this time, urban planning for connected cities will become more important and by 2020, 6 billion IOT devices will be used by cities for digital services that include personal services ranging from leisure to smart houses and the now known self-driving cars.

If one considers for a moment the possibilities and impact of these visions, then some urgent attention is needed to direct this digital world and its cyber-citizens, their behaviour and eventually their cultures. This order will only be possible when relevant and practical policy frameworks exist and are accepted to be beneficial to all cyber-citizens.

The question is now, what does the digital landscape in Southern Africa look like?

In evaluating the digital landscape, one should observe the available digital infrastructure as well as the political willingness that can be predicted from its digital policy frameworks. When either the digital policy frameworks (reflecting the so-called political will) or the digital infrastructure lacks, digital readiness can be assumed to be merely academic or speculative discussion. This study will inter alia use the criteria of the International Telecommunication Union (ITU) to serve the purpose of a measurement structure.

3.3.1 An overview of global and African connectedness

In discussing the Southern African digital environment, it is essential to know context and influence of both the global and the African digital perspectives on the Southern African region.

3.3.1.1 *An international perspective*

In the paper “The Knowledge Society and Global Dynamics in Education Politics”, Jakobi (2006) discusses the impact of the knowledge society as an enabler for national policy reforms. The paper confirms that, globally, countries and governments should share policy frameworks and best practices, as well as positive results with each other. Important in this article is the finding that global organisations are fundamental to this process, as they provide an arena where successful policies can be discussed and diffused.

Further to this, Castells (2000) reminds us that the element that defines the present technological revolution is not knowledge or information itself, but rather the application of knowledge and information to knowledge generation and information/communication processing devices as linked to digital networks. These digital networks seem to bring the focus to elements that define the digital landscape. ICT offers unprecedented rights for cyber-citizens towards freedom of expression, information and communication, as well as knowledge creation and its use for individual and social development. The outcomes of the WSIS (2003 and 2005) translate this into an obligation for states and the international community to ensure that every citizen enjoys such opportunities.

Building on these ideas, the Internet Society (2016) confirms that policies for telecommunications cannot be formulated at national or regional levels alone. International institutions such as the World Trade Organisation (WTO), the International Telecommunication Union (ITU), the World Intellectual Property Organisation (WIPO) and the Internet Corporation for Assigned Names and Numbers (ICANN) are influencing the rules for global participation (Handbook, 2016). It correctly states that, with globalisation of communications, global ICT entities will increasingly determine the frameworks for effective participation in public policies for knowledge societies. This is particularly important for the African continent and other developing countries and emerging economies. In support of this approach, Mansell (1999) assessed the potential opportunities and risks that information and communication technologies hold for developing countries. Towards sustainable development, Mansell (1999) analysed the

United Nations Commission on Science and Technology for Development (UNCSTD) Working Group on ICT and its Development Report and concluded that developing countries would be in a better position if they established national or regional ICT strategies.

In accordance with the study by Menou and Taylor (2006), it is important to apply a standardised format for measuring and comparing ICT-related standards and achievements – also in Africa. This measurement will have to include ICT products and services, ICT infrastructure, ICT supply, ICT demand by business, ICT demand by households and individuals. Such work was done by the Partnership on Measuring ICT for Development, an initiative to improve the availability and quality of international comparable ICT statistics that produced useful tools to measure the information society. This initiative also contributed to the World Summit Information Society monitoring tool, as well as to the awareness and credibility of ICT statistics (<http://www.uis.unesco.org/Communication/Pages/partnership-for-measuring-ict-for-development.aspx>).

The ICT Development Index (IDI) is a composite index that combines 11 indicators into one benchmark as a measure that can be used to monitor and compare developments in ICT over time and between countries. The IDI was developed by the International Telecommunication Union (ITU) in 2008 in response to requests from ITU Member States to develop an overall ICT index and it has been published annually since then. The main objectives of the IDI are to measure the level and evolution over time of ICT developments within countries and the experience of those countries relative to others; progress in ICT development in both developed and developing countries; the digital divide, i.e. differences between countries in terms of their levels of ICT development; the development potential of ICT; and the extent to which countries can make use of them to enhance growth and development in the context of available capabilities and skills (<http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf>). The ITU refers to an ICT development process as well as a country's development and progress towards becoming an information society in a three-stage

model of which the first two stages reflect the IDI model. In the ITU model, Stage 1 is about ICT readiness – reflecting the level of networked infrastructure and access to ICT; Stage 2 is about ICT intensity – reflecting the level of use of ICT in society; and Stage 3 is about ICT impact – reflecting the results/outcomes of more efficient and effective ICT use (ITU, 2014).

With the same objective in mind, the Organisation for Economic Co-operation and Development (OECD) identified 15 ICT indicators drawn from various publications and databases and produced by the OECD's Directorate for Science, Technology and Innovation (<http://www.oecd.org/sti/sci-tech/36177203.pdf>).

The mentioned OECD indicators for the Information Society are contained in the Guide to Measuring the Information Society (<http://www.oecd.org/internet/broadband/oecdkeyictindicators.htm>). The OECD hopes that the Guide will become a standard reference for statisticians and others working in this field. Important for this study is that the Guide is expected to assist newly participating countries to start or further develop information society measurement programmes. The Working Party on Information Security and Privacy (WPISP) also promotes a global, coordinated approach to policy making in these areas to create a credible standard of measurement. These indicators are updated annually and currently reflects the

following:

- Access lines and access paths in total or per 100 inhabitants for OECD countries;
- Mobile subscriptions in total or per 100 inhabitants for OECD countries;
- Trends in telecommunication revenue, investment and access paths;
- Broadband subscriptions per 100 inhabitants in OECD countries;
- Percentage of fibre connections in total broadband;
- Households with access to a home computer;
- Internet in selected OECD countries;
- Broadband in selected OECD countries;

- Broadband connectivity, percentage of enterprises in each employment size class; and percentage of all enterprises;
- Employment of ICT specialists across the economy, as share of total employment;
- Telecommunication services revenue in total for OECD; Mobile Telecommunication services revenue in total for OECD countries; and Telecommunication infrastructure investment in total for OECD countries;
- Value added of ICT sector and sub-sectors; Business R&D expenditures in the ICT sectors; and Employment in the ICT sector and sub-sectors;
- Specialisation in ICT-related patents, 2000-02 and 2010-12; and top 25 combinations between ICT and other technologies in patent applications, 2000-02 and 2010-12;
- Trade in ICT goods with reference to both gross exports and value added;
- Top 250 ICT firms, 2000 and 2011;
- Labour productivity of the ICT sector and total economy, 2013;
- Growth in total labour productivity growth accounted for by the ICT sector, 2001-13;
- Contributions of ICT investment to GDP growth, 2000-09.

Another international platform was the World Summit on Information Societies (WSIS) as a unique two-phase UN summit that began with the goal of achieving a common vision. It was also committed to building a people-centric, inclusive and development-oriented Information Society where everyone can create, access, utilise and share information (WSIS, 2015).

The first phase of the WSIS took place in Geneva in 2003, while Tunis was the venue for the second phase in 2005. The WSIS positioned itself as a key event in the history of the internet. It recognised that not only governments should have a say in the development of the internet's future, but also businesses, civil society, engineers, academics, and everyone who can play a role in its future. It also defined a set of targets,

recommendations and commitments to build an inclusive, people-centric and development-oriented Information Society (WSIS, 2015).

A recent global reference was created in December 2015, where the United Nations General Assembly reviewed whether sufficient progress has been made in achieving the WSIS goals over the past 10 years and considered the future of the WSIS process beyond 2015. This is often called the “WSIS+10 Review” and culminated in a high-level meeting on 15-16 December 2015 at the UN Headquarters in New York.

The draft resolution submitted to the President of the General Assembly (United Nations, 2015) called for closer alignment between the WSIS processes and the 2030 Agenda for Sustainable Development by focusing on the following:

- ICT for development, including bridging digital divides and enabling environmental and financial mechanisms;
- Human rights in the information society;
- Building confidence and security in the use of ICT;
- Structures to enhance cooperation towards Internet Governance;
- Formal activities to ensure follow-up and review.

In the World Development Report (2016), elements of what is called a digital revolution are discussed. This revolution is aimed at making the world wealthier and more inclusive. The report describes the obstacles that are preventing the digital technologies to achieve their transformation possibilities. The report addresses sectoral, national and global policies for smart cities, energy and environment. Important to note is that the report concludes that the benefits of digital technologies will be vulnerable unless countries continue to improve business confidence, invest in knowledge societies and health assistance, and promote good governance practices. Countries should strengthen digital technologies with the mentioned values in order to fully benefit from fast growth, more jobs and better quality of life. The report cautioned that in countries where these values were not adopted, the digital technologies did not increase productivity or reduce inequalities.

In Africa, many of the current questions in formulating ICT policy frameworks correspond with the work that was done more than two decades ago by Gurbaxani et al. (1990), who argued that governments are the driving force towards an information society. Their research focused on the National Computer Policy in Singapore at the time and studied the influence and role of the Singapore government in achieving the goal of an information society. They highlighted the involvement and commitment of government in the computerisation and informatisation of Singapore. They noticed that government promoted technology at all levels of society by using funding, incentives and subsidies, information and consultation, and partnership projects. Gurbaxani et al. (1990) also recognised that government should use legal power for the distribution of IT directives and the setting of technical standards, as well as for formalising procedures and protecting copyright. Most important, they acknowledged that government was influencing supply and demand goals through regulation. More than 20 years later, Kuo (2011) analysed 90 years of the Singapore population census data and reflected on the government's role towards industrial restructuring and occupational changes. In his paper Kuo et al. (2011) argued that competition from regional countries would enhance the process in Singapore towards an information and knowledge economy. At the time of the article, Kuo also expected that Singapore would gradually develop into a full global information society.

Ricci (2000) observed the same topic a few years later but focused on the historic position of Europe and in his paper explored how the concept of Information Society was being used in Europe. He analysed data collected by the European Commission between 1995 and 1999 to measure information societies' performance in European countries and inter alia concluded that (at the time) only a minority of Europeans were heavy users of information technologies. His paper noticed that there was a large community of (and used the new term) 'passive media users' who were still disoriented by the media arena and seeking for the best solution to be involved. In conclusion, Ricci (2000) advised policy makers to introduce priorities aimed at enforcing social cohesion in policy implementation. Also in Europe, Servaes et al. (2002) studied current practices and policy on information

society, and noticed that the information society in Europe was still an emerging reality. He observed that each country has its own political objectives that are being pursued in different ways towards establishing an information society. However, Servaes (2002) also warned that some users are being excluded from the digital environment due to their educational and financial status. In a third European study that explored an information society policy agenda, Dabinett (2001) analysed European Union (EU) attempts to mainstream the information society by means of the regional development policies that European countries introduced during the 1990s. His paper identified market regulation; the nature of technological change in the regional development; the information society paradigm; and the changed nature of time and space as important elements of a policy framework. Dabinett (2001) also observed critically that the EU used a top-down model of policy formulation in respect of Information Societies.

Meanwhile, during the same time in the United Kingdom, Martin Dutch (2001) addressed social exclusion and the information society based on local information policies, community networking and the public library policy in the UK. He recommended that libraries should use technology to engage with local communities and disadvantaged users, and that such institutions should in practice be open to all. At the time it was concluded that public libraries often excluded communities and social groups, whereas these institutions could play an important role in developing information societies.

It seems that both the European guidelines of the mid-nineties and the Singapore example might be broadly relevant to the African situation – not only based on the observations by Gurbaxani, but also as a relevant timeline about 20 to 25 years in advance.

3.3.1.2 African case studies

Towards observing Africa's general connectedness, a number of countries and criteria were selected to determine the general status of digital Africa. Selected countries from the northern, eastern and southern African regions are described to establish a framework for connectivity according to available digital infrastructure, and basic policy frameworks

that reflect international criteria. A number of mainly English-speaking countries were identified and include the following nations: Egypt, Rwanda, Kenya, Botswana and South Africa. The reasoning for selecting these countries is discussed based on the factual observation of each country.

Recent political debates on which African countries were the continent's largest economies mentioned South Africa (member of the Southern African Development Community – SADC), Nigeria (member of the Economic Community of West African States – ECOWAS) and Egypt (member of the Northern African Region – Maghreb Region). While the study in hand is not about the largest economy in Africa, the debate has relevance because at least it pointed out which African countries were most significant in terms of the size of their economy. A comparison between Southern Africa and the other African regions would indicate that, in this sense, Kenya should be regarded as a country of significance in the East African region – COMESA (Common Market for Eastern and Southern Africa). Also Rwanda, which until recently was one of the most challenged African countries due to civil wars and other internal conflicts, could be considered a country of significance in the COMESA region.

An overview of the Egyptian digital position and the digital environment in Kenya, Rwanda and Botswana is also important for a broader understanding of the digital landscape in Africa and it should reflect on the availability of ICT opportunities on the African continent. Without such opportunities, cyber-citizens are without an operational platform and, by implication, the continent will have very little chance of developing into a full-fledged knowledge society. The current study does not intend to present a full analysis or comparative study of different African countries. Analysing the specific position of each of the countries below should provide a sufficient overview of Africa as a connected continent.

(a) Egypt

For the purpose of this study Egypt was selected as an significant member of the Northern African Region – Maghreb Region. Understanding this region as part of the background

towards Southern Africa is vital as it connects the African continent to both Europe and the middle East priorities, policies and ways of thinking.

In Egypt, the Egyptian Ministry of Information and Communication Technology (2015) (http://www.mcit.gov.eg/Upcont/Documents/BuildingBridges_all.pdf) designed and implemented what they called the 'Egyptian Information Society Vision 2004-2006'. As one of a small number of transcontinental countries, Egypt covers the north-east corner of Africa and the south-west corner of Asia, bridging the Sinai Peninsula. To the north-east, the country is bordered by the Gaza Strip and Israel, to the east by the Gulf of Aqaba, to the west by Libya, and to the south-east by the Red Sea.

Considered by many as the cradle of civilisation, Egypt was responsible for some of the earliest developments in writing, agriculture, urbanisation, organised religion and central government. With a population of more than 90 million people, Egypt is the most populous country in North Africa and the Arab World, the third-most populous in Africa (after Nigeria with about 175 million people and Ethiopia with about 100 million people), and the fifteenth-most populous in the world (Wikipedia).

The 2004-2006 Egypt Information Society Vision was preceded by a so-called National Communication and Information Technology Plan, which had the creation of national information systems and data bases as purpose. Included in this plan were the extension of the telecommunications infrastructure, the building of numerous information technology hubs, and the enlargement of the existing pool of skilled IT labourers. The establishment of a new Ministry of Communication and Information Technology in 1999 was specifically aimed at facilitating Egypt's transition into the global information society, a task that involved all the government ministries, departments and agencies, as well as the private sector, civil society and academia in Egypt.

The primary objective of the Egypt Information Society Vision was to facilitate Egypt's evolution as an information society by taking the necessary action to bridge the digital divide. The actions to be taken were described in terms of seven major integrated

platforms or initiatives, namely e-Readiness (equal access for all); e-Learning (nurturing human capital); e-Government; e-Business (a new way of doing business); e-Health (increasing the availability of health services); e-Culture (promoting Egyptian culture); and ICT export (industry development).

In this regard, 'Cloud Computing' could significantly affect the economics and sustainability of ICT. As an innovation, it has signalled a *move away* from computing as a purchased product and *towards* computing as a delivered service. ICT users no longer need large investments in technology and equipment, and businesses now have access to extensive resources that they would in normal circumstances not be able to afford. The opportunities provided by Cloud Computing could therefore be a potential driver for the growth of developing countries and emerging economies (Handbook, 2016).

Having taken cognisance of both the risk factors and the opportunities associated with Cloud Computing, the Egyptian Ministry of Communications and Information Technology started in 2015 with the development of the Egypt Government (EG) Cloud Strategy. This strategy was primarily aimed at supporting and promoting cloud computing in government ministries/departments. One of the objectives the Ministry wanted to achieve with the EG-Cloud was the design of an architecture framework that would enable government to create and sustain a trusted environment and ecosystem. Other objectives included the design of a governance model, the implementation of the EG-Cloud, the consolidation of data centres and the creation of a service catalogue (Egyptian Ministry of Communications and Information Technology, 2015).

In 2015 Egypt's ICT infrastructure, according to the ITU (2015), consisted of the following:

- 8.3 fixed-telephone subscriptions per 100 inhabitants;
- 21.5 mobile-cellular subscriptions per 100 inhabitants;
- 3.3 fixed (wired)-broadband subscriptions per 100 Inhabitants;
- 31.1 mobile-broadband subscriptions per 100 inhabitants;
- 43.1% of households with a computer;
- 34.5% of households with internet access at home;

- 49.6% individuals using the internet.

(b) Rwanda

The Rwandan Development Board created what they called the SMART Rwanda Master Plan. This plan is, as smart phones, called smart as it is aimed at connecting Rwandese people to the digital world. The SMART Rwanda Master Plan (2015–2020) is a follow-up on the Rwanda ICT Strategic and Action Plan for 2011–2015 that was developed by the Rwandan Development Board (2015).

Located partly in Central and partly in East Africa, Rwanda and is one of the smallest countries on the African mainland. Bordered by the Democratic Republic of the Congo, Uganda, Tanzania and Burundi, Rwanda is geographically mountainous in the west and savannah grass fields in the east. It has an abundance of water, with lakes throughout the country. Its population density is one of the highest in Africa, with the young of the population being predominantly rural. Rwanda's economy (mostly reliant on subsistence agriculture, with coffee and tea as major exports) suffered heavily as a result of the Rwandan Genocide in 1994.

According to the ITU (2014), the digital information infrastructure in Rwanda presented the following features in 2014:

- 0.4 fixed-telephone subscriptions per 100 inhabitants;
- 56.8 mobile-cellular subscriptions per 100 inhabitants;
- 0 fixed (wired)-broadband subscriptions per 100 inhabitants;
- 58 mobile-broadband subscriptions per 100 inhabitants;
- 2.9% households with a computer;
- 2.9% households with internet access at home;
- 8.7% individuals using the internet.

In 2000, the Government of Rwanda established Vision 2020 as an economic blueprint for the creation of a knowledge-based economy that would turn Rwanda into a middle-income country by 2020. Vision 2020 was supported first by of the Economic

Development and Poverty Reduction Strategy, 2007-2012 (EDPRS I), and later by the details of the 2013-2018 report (EDPRS II). These ICT programmes have been regarded as key drivers of the recent Rwandan economic growth. The National Information Communication Infrastructure plans – NICI Plans I~II – were later initiated to guide ICT development initiatives linked to Vision 2020. Aimed at government services and at increasing private sector productivity so as to boost Rwanda's competitiveness, these plans focus on the development of services and the improvement of service delivery through the leveraging of ICTs.

A cursory analysis of these plans indicates that Rwanda's first priority was to create appropriate institutional, legal and regulatory frameworks, to liberalise the telecoms market through the reduction of entry barriers, and to develop an effective implementation and coordination mechanism. Its second priority (and focus of the second part of the NICI-2010 Plan) was the provision of ICT infrastructure in the country. Currently, the overall aim of Vision 2020, through NICI III, is to accelerate service delivery via ICT towards economic competitiveness and to increase ICT's contribution to the country's GDP.

The specific objectives of Vision 2020 include (i) the development of a skills and knowledge base through and based on ICT; (ii) the development of a vibrant, competitive, and innovative ICT-based private sector; (iii) the empowerment and transformation of communities through improved access to information and services; (iv) the improvement of government operational efficiency and service delivery; and (v) securing Rwanda's cyber-space and information assets. In support of these objectives, the legal and regulatory framework for ICT development that was put in place under NICI I increased nationwide coverage of telecommunications networks by means of versatile, high-capacity national optic fibre infrastructure network as well as a national data centre. The latest version of the Vision 2020 documents also includes an e-waste focus aimed at protecting the environment.

The Rwanda digitalisation programme should benefit state governance through improved operational efficiency, service delivery and education, with the development of a high-

quality skills-based and knowledge-based ICT platform. The economy should be able to develop a vibrant, competitive, and innovative ICT-to-ICT-enabled private sector, while Rwanda's cyber-space and information assets would be secured.

Challenges that have to be overcome in realising Vision 2020 include creating public awareness of and educating key stakeholders on the need to trust and embrace ICT-led development priorities. Other challenges include solving the government's problems with resource mobilisation, and making available ICT and digital experts to support and coordinate the implementation of its plans towards the realisation of Vision 2020.

Among the lessons to be learnt from the Rwandan process is that the success of programmes like these depend on high-level political championship. In the Rwandan case, the President (motivated by the Singapore model) took personal interest in the programmes. Also, resource mobilisation and stakeholder participation are critical to successful policy development and strategic plans. Most important, however, is that normal planning activities should be informed by a clear vision, practical mission, well-defined strategy, and a step-by-step approach with specific milestones and expectations or outputs.

(c) Kenya

As the most connected country in East Africa, Kenya has a connection to five international digital networks and submarine cables – TEAMS, EASY, SEACOM, LION and NFOBI. From entry into Kenya, the network cuts across the country and reaches more than half of the 47 County Governments with wide coverage for the mobile phone network.

Kenya is a founding member of the East African Community (EAC). It stretches all the way to Tanzania in the south, Uganda in the west, South Sudan in the north-west, Ethiopia in the north, Somalia in the north-east, and the Indian Ocean in the east. Measured in terms of its GDP, the economy of Kenya is the largest in East and Central Africa. Its main

source of income is agriculture, while the exporting of tea, coffee and, more recently, fresh flowers in particular has become a steady source of income. The service industry is, however, also a major economic driver (Wikipedia, 2016g).

The 2008-2012, the Kenyan medium-term ICT plan was one of the foundations of its national transformation strategy, focusing as it did on the strengthening of a knowledge-based economy (Kenya ICT Authority, 2013). The Kenya National ICT Master Plan for 2014-2018, which builds on the 2008-2012 medium-term plan, is informed by the belief that ICT has a major role to play in driving the economic, social and political development of Kenya's Vision 2030. The latter is a metaphorical roadmap to a knowledge economy and information society which, in turn, will ensure eventual socio-economic growth (Kenya ICT Authority, 2013).

The Master Plan is politically aligned to the Kenyan national constitution, while policy documents are informed by the Kenyan Vision 2030, the Jubilee Manifesto and a number of laws tabled between November 2012 and January 2013. Three laws particularly relevant to Kenya's growth as a knowledge society are the 2013 Science, Technology and Innovation Act, the 2013 TIVET Act, and the 2012 Universities Act.

While Vision 2030 is a national long-term development roadmap aimed at transforming Kenya into a knowledge-based globally competitive country, the National ICT Master Plan 2014-2018 has the review and updating of the Connected Kenya Master Plan (February 2013) as purpose. A primary objective of the 2014-2018 National ICT Master Plan is the supply of reliable, secure and affordable connectivity to all Kenya's citizens across the country. Central to the achievement of this objective is a programme for the facilitation of efficient and effective government and the delivery of government and e-government services through enhanced access to data on the one hand and the protection of public data and information on the other. A further objective is the promotion of ICT innovations and their practical implementation in business and the local ICT industry, to be achieved by building human ICT capacity, increasing citizens' digital literacy and developing an ICT compliant workforce and local high-end ICT skills.

According to the ITU (2014) information, the country is serviced by the following digital infrastructure:

- 1.5 fixed-telephone subscriptions per 100 inhabitants;
- 70.6 mobile-cellular subscriptions per 100 inhabitants;
- 0.1 fixed (wired)-broadband subscriptions per 100 Inhabitants;
- mobile-broadband subscriptions per 100 inhabitants;
- 10.8% of households with a computer;
- 14.2% of households with internet access at home;
- 39% of individuals using the internet.

(d) Botswana

To present another practical example of an African government's involvement, Mutula - in as early as 2004 – described the Botswana initiatives and Vision 2016 to become an information society. The Botswana Vision 2016 defined the actions towards developing the ICT sector in the country. In his paper, Mutula (2004) mentioned that Botswana has one of the best telecommunication systems in Africa and that the country is ranked first in Africa in providing a free market economy. The paper also mentioned the need for free media and universal access to information as critical factors for good governance. Listing some challenges for Botswana, Mutula (2004) mentioned a lack of universal access to ICT, slow skills development, an inadequate electromagnetic spectrum and (very importantly) the lack of an information society policy. He concluded that Vision 2016 was not aligned with ICT developments in Botswana.

In a further contribution on digital divide and economic development in sub-Saharan Africa, Mutula (2008) addressed the issue of the digital divide by referring to elements of measuring global e-readiness, digital opportunities and information society indicators within and between countries in sub-Saharan Africa. He concluded that tools other than e-readiness ranking should be used to measure the digital divide and suggested that impact assessments be used to determine if outcomes are being achieved. Important for

the current study, he concluded that in addressing the digital divide in Africa a shift should be made from access to ICT to the quality of service.

In 2010 the Botswana e-Government Board developed Botswana's National e-Government Strategy for 2011-2016. This strategy outlines five major programmes and approximately 25 interrelated projects. The combined projects move all appropriate government services on-line and simplify public sector service delivery. One of the main objectives is an increased usage of ICTs in Botswana (Botswana e-Government Board, 2010).

Botswana is a semi-arid, land-locked country in sub-Saharan Africa with a long border with South Africa, Namibia and Zimbabwe, and the world's shortest international border – 700 metres in length – between it and the Republic of Zambia. Most of the country is taken up by the Kalahari Desert, but its political and economic capital, Gaborone, is located in the south-east, close to the South African border. Diamond mining, tourism and subsistence farming are its main economic activities, with the discovery of diamond reserves enabling its government to allocate resources to the building of road networks, schools and health centres (The World Fact Book, 2000).

According to the ITU (2013) information, Botswana is serviced by the following digital infrastructure:

- 8.6 fixed-telephone subscriptions per 100 inhabitants;
- 160.6 mobile-cellular subscriptions per 100 inhabitants;
- 1.1 fixed (wired)-broadband subscriptions per 100 Inhabitants;
- 74.1 mobile-broadband subscriptions per 100 inhabitants;
- 13.5% of households with a computer;
- 10.6% of households with internet access at home;
- 15.0% individuals using the internet.

As indicated earlier, the purpose of this overview is to create a wider understanding of the digital landscape in Africa so as to foster a better understanding of the elements that form

part of the African digital landscape. To this purpose, the overview reflected on the widespread availability or not of ICT opportunities in Africa that will not only stimulate the creation of knowledge societies, but also provide cyber-citizens with an operational platform. The only in-depth analysis of an African country's digital position focuses on South Africa, the results of which are presented below.

(e) South Africa

An analysis of the South African situation suggests that South Africa could serve as a case study to illustrate the potential opportunities and challenges inherent in the digitalisation of Africa. In the first instance, South Africa's Broadband Policy (2013) and National e-Strategy (2016) indicate that the South African government aims to eliminate poverty and reduce inequality by the year 2030. Should this aim be realised, South African citizens will have acquired the capability to utilise the ever-broadening opportunities available to citizens of the world. The realisation of this aim is, however, entirely dependent on the creation of the kind of digital opportunities envisaged in the country's National Development Plan.

The vision regarding the Information and Communications Infrastructure, as stated in the NDP, is that by 2030 ICT will have created a dynamic information society and knowledge economy that is inclusive and prosperous, and that will meet the needs of citizens, business and the public sector. It will provide access to a wide range of services required for effective economic and social participation and at a cost and quality at least equal to South Africa's competitors. "The vision will be realised only if it is supported by a coordinated, enabling ICT strategy and plan. A national e-strategy will cut across government departments and sectors. It will aim to create sector growth and innovation through policy coordination that drives public and private investments in areas such as network upgrade and extension, particularly in broadband, service delivery and application development, and local content development." (National e-Strategy, 2016)

From a geographical perspective, South Africa is the most southern country on the African continent and thus from a physical point of view thus also the hardest and most expensive

area to connect to the internet via undersea cables. Countries bordering it to the north are Namibia, Botswana and Zimbabwe, and to the east, Mozambique and Swaziland. The Kingdom of Lesotho lies in a basin surrounded by South Africa on all sides.

With a population of 55 million people, South Africa ranks as the 24th-most populous nation in the world. Considered as a newly industrialised country, it is ranked as an upper-middle-income economy by the World Bank. Since its economy is the second largest in Africa, South Africa's regional influence is quite significant (Wikipedia, 2016m).

In 2013, the then South African Department of Communications (DOC) released a National Development Plan for South Africa. Based on the view that a broadband communication system would support (sustain) a dynamic and connected information society (DOC, 2013), the national broadband policy confirms the government's commitment to realise its vision for South Africa – as a country with a seamless information infrastructure by 2030. The policy reflects South Africa's commitment to the creation of an environment conducive to the rollout of broadband infrastructure and to the creation of associated content and services. By connecting the business and public sectors with each other, the network not only facilitates access to the creation and consumption of a wide range of converged applications and services required for effective economic and social participation (DOC, 2013), but also encourages the kind of public and private investment needed to address the social and economic needs of the country (DOC, 2013). Because the digital ecosystem (i.e. networks, services, applications, content and devices) had to be integrated into the economic and social fabric of South Africa, demands for increased internet access and broadband connectivity by educational institutions, municipalities and government were prioritised in the policy (DOC, 2013). The policy should, if effectively implemented, result in digital facilities being universally accessible across the country at a cost and quality that satisfies the needs of its citizens.

South Africa's broadband vision is informed by an urgency to become a full-fledged knowledge-based economy that would attain the goals it set for itself as far as job creation, economic growth, poverty alleviation and competitiveness are concerned. In

order to achieve these goals, broadband should be affordable and meet the diverse needs of public and private users, the formal and informal business sector, consumers and citizens. By implication, ICT policies and regulations should create conditions that enthruse and enable public and private investment in South Africa's broadband ambition. These include, but are not limited to, efficient public-sector delivery, public and private enterprise, a vibrant and creative software industry, and an ICT literate citizenry. By implication (DTPS, 2015):

- e-Government services, underpinned by the aggregation of broadband needs, demand/require economies of scale that would ensure that all public institutions (at national, provincial and municipal levels) have broadband connectivity and extend such connectivity to the communities they serve.
- Public and private enterprise, formal and informal, would be able to fully exploit the efficiencies offered by ubiquitous broadband and its potential for innovation, thus contributing to the building of a globally competitive knowledge economy.
- A vibrant and creative software industry, one producing content and applications relevant to and/or meeting the diverse needs of users, would flourish in the country.
- Citizens and consumers would have the literacy and skills required to access services and content, including public information and public services, thereby providing the country with the strong national skills base needed to build a globally competitive knowledge economy.

Indications are that South Africa is currently regarded as under-performing in terms of ICT capacity. The 2015 Global Information Technology Report of the World Economic Forum, using the Networked Readiness Index, indicates that although South Africa occupied the 70th position for two consecutive years – 2013 and 2014 – its ranking has dropped because the number of countries against which it was measured increased from 144 to 148. Four other indices, all comparing South Africa with 142 other countries, also

accorded it a relatively low ranking. The Environmental sub-index, which assesses the extent to which a country's market conditions and regulatory framework support entrepreneurship, innovation and ICT development, placed it in the 31st position. The Readiness sub-index, which assesses a country's ICT infrastructure, mobile network coverage, ICT affordability, ICT skills levels, and broadband internet subscriptions, ranked South Africa 102nd. The Usage sub-index, which measures ICT usage by government, business and individuals, ranked it 67th, while the Impact sub-index, which assesses the broad economic and social impact of ICTs, placed it in position 92 (DTPS, 2015). Even when compared to other large economies in sub-Saharan Africa – none of which performed well according to the NRI – South Africa's performance was unimpressive. Although the NRI indicated that the African region is performing well in the political and regulatory spheres, Nigeria dropped seven places and South Africa five places. Kenya, on the other hand, moved up six places (DTPS, 2015).

South Africa, according to the ITU (2014), is currently serviced by the following digital infrastructure:

- 9.2 fixed-telephone subscriptions per 100 inhabitants;
- 147.5 mobile-cellular subscriptions per 100 inhabitants;
- 3.1 fixed (wired)-broadband subscriptions per 100 inhabitants;
- 25.2 mobile-broadband subscriptions per 100 inhabitants;
- 25.8% of households with a computer;
- 39.4% of households with internet access at home;
- 48.9% of individuals using the internet.

3.3.1.3 Conclusion

Recognising the international views on connectivity and the factual situation in the selected African countries, one can conclude that some countries in Africa are at least in the process of becoming fully connected. ITU criteria reflect an international standard for the digitalising of the continent. The two elements that are important for this study are (i) the existence and growth of the digital infrastructure, and (ii) people's use of the digital infrastructure. It seems from the ITU data for the included countries that the African

continent should be regarded as digitally connected even though there are still many challenges and opportunities for expansion. A further significant observation is the high rate of mobile phone access on the African continent. Given that most modern mobile phones are considered as smart phones, one hopes that the number of smart phones will in future also provide higher levels of internet connection. This will be a relevant topic for future research as computers and mobile phones without Wi-Fi/internet connectivity are of limited value as part of the digital infrastructure and ICTs.

3.3.2 Southern Africa, Africa and global connectivity: information-ethical challenges and opportunities?

Given the political and human interconnectedness of African countries as well as the generalised international terminology of 'Africa as a developing continent' it is essential to look at Southern Africa within an African perspective. Towards objectivity the challenges for the African continent should then also be quantified and measured within a global perspective.

Following the acknowledgement that Africa is a connecting continent, one should be alerted to the challenges that being connected pose., as this will be shared by the Southern African region. Challenges should be addressed and opportunities should be reflected in planning and development programmes.

A popular saying in the project management environment indicates that if you cannot measure it, you cannot manage it. In order to manage challenges, specific criteria and elements must thus be identifiable and measurable. In their paper "A Grand Challenge: Measuring Information Societies", Menou and Taylor (2006) analysed the limitations of information-society-measuring criteria and elements. Towards a solution, they identified the following elements and criteria to be measured:

- The total context and elements to be measured (definition of universe);
- Definition of the objects and phenomena to include in the universe;
- The measurements being based on solid theories;
- The units of measurements;

- Data sources and collection;
- The methods of analysis and construction of indicators;
- The target audiences;
- The purpose and utilisation of measurements.

To give an international overview of common challenges experienced by digitally connected information societies, the UNU Handbook on Policy (2016) states that the digital divide remains a global challenge, while the Internet World Stats 2015 indicates that around 40% of the world population has some form of internet connection. In 1995, this figure was less than 1%. Despite the growth in internet penetration in the world, the distribution of access between developed and developing countries, between urban and rural communities and even between different age groups and genders is still unbalanced and unfair (Handbook, 2016). The resources required to bridge all these divides are far beyond the means of UNESCO, member states and many governments. The Handbook (2016) assumes that governments and global social agents will continue to seek solutions that will provide all people with digital connectivity. This will allow for education and lifelong learning, so people will be able to enjoy the advantages of a knowledge society, both individually and socially.

As part of a European approach, Schoof and Watson Brown (1995) addressed information highways and media policies in the European Union and in their paper discussed the European policy on communications media. They discussed aspects that should be addressed in the construction of an information society, such as the removal of unnecessary regulatory barriers, the rendering of a universal and public service, line-of-business restrictions, and the pluralism of media. They expressed the view that an information society is dependent on a policy framework that should incorporate the different media; and that such a policy framework should not be restricted to the economic dimension only – it should include the social and cultural dimensions.

Also in Europe, Garnham (1997) addressed the history of a troubled relationship between Europe and the Global Information Society in his discussion of the European Union policy

in the information and telecommunication technology sector. The paper shared insights into the interests and power games behind the policy initiatives and concluded that the policies had produced little concrete value, they had not solved the prevailing problems, and the EU-allocated funding was not enough for the envisaged programmes.

From one of the EU countries, Cornella (1998) discussed information policies in Spain in terms of information contents, actions to stimulate information exchange, and information management in governance. The paper indicated that although Spanish legislation was in place, the country experienced challenges with access to information. At the time, there was no public debate on how to turn the country into an information society due to a mismatch between Spain's economic development model and information development. The paper concluded with the observation that economic growth alone does not guarantee the growth of information use and that there was a need to shift the focus on information society from technology to content.

In yet another European contribution, Misuraca, Broster and Centeno (2012) shared the vision of Digital Europe 2030, namely *Designing scenarios for ICT in future governance and policy making*. They proposed a research roadmap on information and communication technologies for governance and policy modelling. The roadmap would include a collaborative and interdisciplinary platform for policy making and cooperation between academia, business, civil society and government. The authors suggested an experimentally driven research that should address broad governance and policy-making challenges. They also proposed ongoing research that would include multiple stakeholders and large-scale experimentation.

In order to answer the question of whether or not Central and Eastern European countries manage to develop the information society, Gómez Barroso and Feijoo Gonzalez (2010) reflected on the situation in Central and Eastern Europe regarding policies on the information society. They concluded that in 2010 most Central and Eastern European countries were not moving towards information societies and that the European countries that had joined the European Union in 2004 are in a better position in achieving this aim.

From an Indian perspective, Tripathi (2006) described the process and challenges for India to become a knowledge economy through information communication technologies. The study listed a number of challenges that included a lack of education and technology capabilities; bureaucracy; a lack of accountability; non-availability of content in local languages; and inadequate power supply. Tripathi (2006) also proposed that the transformation of India into a knowledge society requires the participation of stakeholders in government, civil society, the private sector and non-governmental organisations. Government should provide the appropriate environment through policies, an enabling regulatory framework, a free market economy and political stability to attract external investment. Private sector should enhance research and development through partnerships with academic organisations; and the Indian society by itself should help mobilise people into the transformation process towards a knowledge society.

Referring to other global regions Katz, Koutroumpis and Callorda (2013) proposed a model for Latin America to measure the progress of the region towards becoming an information society. This model includes six elements, namely ubiquity; affordability; reliability; speed; usability; and skill, which the authors preferred above the measurement of infrastructures, internet access and broadcasting adoption. The paper proposed the digitisation index as a more holistic dimension of impact and according to this index the Latin America countries were moving ahead towards becoming information societies. In conclusion, their paper acknowledges that the challenges faced by different countries are of a different nature and that digitisation appears to have a stronger influence on economic growth. Finally, the paper indicates that to generate economic growth and job creation, policies towards digitisation need to be combined with industrial policies.

The paper by Rahim and Pawanteh (2011) addressed the democratisation of information in Malaysia as a response to globalisation. The authors described the efforts by Malaysia towards universal access to information and concluded that internal democratisation of information is the right of each country before entering into what the authors call the

globalisation phenomenon. They admitted that globalisation brought liberalisation and deregulation of the communication industry.

Venturelli (2002) reflected on the conflicting interpretations of the information society and e-regulation in the US, EU and East Asia. In the paper he analysed the 2002 versions of information society policies in the US, the European Union (EU), and East Asia. The author believed that creativity and innovation were key elements in the information economy and that each region should create the right environment (policy, legal, institutional, educational, infrastructure and access) to enter into the global information society. In conclusion, the paper supported the need to invest in creative human capital and not only in the large-scale distribution of gadgets and hardware.

More than a decade ago, Grimes (2000) discussed the prospects of rural areas within the context of an information society. In this article he identified the main obstacles for development as bad spatial cover, cost and political reasons. Five years later, Mariscal (2005) referred to the digital divide in Mexico and noticed that a lack of policy limits access to IT and marginalises certain communities. In this article he recommended that telecommunications be subsidised because of its contribution to economic development and suggested that social capital can be useful in the design of universal access policies. Regarding the matter of policy, Fountain (2000) referred to the potential role of women in an information-based society and concluded that the disparity in participation by gender in the production of information technologies should be viewed as a policy problem.

In conclusion and towards addressing the research questions and focus of this study, these challenges must all be observed within the realities of the developing Southern African content. Under the title *The South African 'Information Society', 1994–2008: Problems with Policy, Legislation, Rhetoric and Implementation*, Singh (2010) presented an analysis of South African ICT policies. His paper highlighted contradictions and shortcomings in government legislation and ICT policies and concludes that the South African government has failed in its goal to create an information society. He justified his conclusion with reference to the political history of South Africa, as well as the opposing

actions, decisions and projects by various government departments in striving for what was seemingly the same goal. He also highlighted inconsistencies and differences in the political rhetoric that was used in the formulation of laws and policies as well as in participants' understanding of the digital divide (Singh, 2010).

Comparing the provision of governance in African countries with best practice and lessons learnt from other emerging economies, Cogburn (2003) argues that globalisation enhances the development of information societies and that multi-national corporations are the major stakeholders, while the World Trade Organisation is at the helm of policy making. About economic development, Soete (2001) emphasises the importance of ICTs for economic growth and employment, arguing that ICTs have brought about deep structural transformations in the economic, social and organisational frameworks of societies. These transformations, according to Soete (2001), could be ascribed to cost reductions, digital convergence between communication and computer systems, and the rapid growth of the internet.

The South African National Development Plan identified a number of challenges that inhibit the ICT sector from achieving the country's socio-economic agenda. These included (i) indications of low returns from the State's investment in ICT infrastructure; (ii) slight evidence only of the strategy's effectiveness at ensuring that connectivity in South Africa keeps pace with that of its peers; (iii) policy constraints due to weaknesses in institutional arrangements, conflicting policies, and regulatory failure due to the limited ability of the regulator (i.e. the Independent Communications Authority of South Africa (ICASA)) to create or establish a more open market.

The lack of policy coordination in ICT planning and compliance issues in all spheres of government have resulted in the duplication of ICT programmes, thus increasing costs without adding value to service delivery. Alignment in the strategic planning processes of the three tiers of government (local, provincial and national) remains a challenge, as does the implementation of national priorities in (or the devolution of national priorities to) provincial and municipal strategic plans. Consequently, ICT initiatives have to be centrally

coordinated to ensure integration across all spheres of government and within government agencies (DTPS, 2015).

Finally, based on the internationally recognised challenges, Southern Africa is not unusual in the challenges that it faces. Most of the current challenges – clearly governance-related – are further complicated by the following factors: development of local digital content for the e-society; e-inclusivity (people with disabilities, rural citizens, women and youth); funding, low levels of access and accessibility; the challenge of rural areas; shortage of e-skills; cyber-crime and cyber-safety; the cost of connectivity; and digital education. In seeking for a shared vision for connectedness in Southern Africa, the mentioned factors will be discussed in more detail in the next part of this Chapter.

3.3.3 Role of governments towards a shared vision of digital connectedness in Southern Africa as a sustainable Knowledge Society

New knowledge and information are essential elements of all development communities. The role played by information in development refers to the generation, processing and dissemination of information, which together form what is commonly referred to as the information life cycle (Castells, 2000).

Sustainable Development, as defined in the 2030 Agenda for Sustainable Development and adopted by the United Nations in 2015, is guided by the purposes and principles of the Charter of the United Nations, including full respect for international law (UNGA, 2015). Grounded in the Universal Declaration of Human Rights; international human rights treaties, the Millennium Declaration and the 2005 World Summit Outcome Document, and informed by other instruments such as the Declaration on the Right to Development, the 2030 Agenda (drawn up in 2015) has the generation and development of knowledge societies as purpose. In terms of its 2016-2030 timeline, this Agenda aims to end poverty and hunger everywhere; to combat inequalities within and among countries; to build peaceful, just and inclusive societies; to protect human rights, promote gender equality and empower women and girls; and to ensure the lasting protection of

the planet and its natural resources. To support the achievement of these goals, the Agenda includes a resolution to create conditions for sustainable and inclusive economic growth, shared prosperity and decent work for all, taking into account different levels of national development and capacities (UNGA, 2015).

The simultaneous growth of the Internet, mobile telephony and digital technologies, as well as the 3rd and 4th Industrial Revolution ... has seen much of the working population migrate to the service sector, thus revolutionising the role of knowledge in our societies. These technologies play an important role not only in economic development (through the spread of innovation and the productivity gains they bring about), but also in human development. (Bindé, 2005).

According to Afgan et al. (2010), the accumulation of knowledge is key not only to science and technology development, but also to our perception of material, social and cultural lives. The dimensions of our lives, which function as 'life support systems', are vital to the development and sustainability of knowledge societies. He further states that knowledge societies represent a new paradigm for future development and their sustainability is characterised by social cohesion, economic competitiveness and stability, as well as responsible use of resources and the safeguarding of the biodiversity of the ecosystem.

According to UNGA (2015), ICT is merely a facilitating tool in the development and sustainability of knowledge societies, a tool that is meant to empower people and build capacity. If used appropriately, it could be a powerful means towards social and economic inclusion and the empowerment of all social, economic and ethnic groups. By implication, the sharing of knowledge and an acceptance of diversity as the norm – rather than the exception – are key features of authentic knowledge societies. Knowledge societies prioritise lifelong quality education, share wealth, address income inequality, contribute to the building of strong economic foundations in participating countries, and assist in the building of sustainable and innovative people-centred economies. In doing so, they would contribute to the achievement of the goals set out in Item 27 of the 2030 Agenda:

We will strengthen the productive capacities of least-developed countries in all sectors, including through structural transformation. We will adopt policies which increase productive capacities, productivity and productive employment; financial inclusion; sustainable agriculture, pastoralist and fisheries development; sustainable industrial development; universal access to affordable, reliable, sustainable and modern energy services; sustainable transport systems; and quality and resilient infrastructure (UNGA, 2015).

3.3.3.1 Challenges in the digital landscape

Both challenges and opportunities mature when communities develop within a digital landscape. Identifying challenges should not be a random list of challenges but rather a practical example of challenges from a specific environment. For the purposes of this study, two sets of realities will be included: (i) the Sustainable Development Goals, and (ii) the examples of challenges experienced in the South African digital environment.

3.3.3.2 Sustainable Development Goals (SDGs)

To some extent, one can describe the 2030 Sustainable Development Agenda that was adopted by the United Nations in September 2015 as the ultimate global policy framework to address challenges related to People, the Planet, Prosperity, Peace and Partnership. All of these suggest a move towards more holistic and contextualised policies to address global challenges. This policy agenda, with its 17 goals and 169 targets, highlights the urgent need for priorities to support policy makers to more effectively align their actions and efforts to this new global trend. In order to address global and country challenges, the 17 SDGs include objectives to:

1. End poverty in all its forms everywhere;
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;
3. Ensure healthy lives and promote well-being for all at all ages;
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all;

5. Achieve gender equality and empower all women and girls;
6. Ensure availability and sustainable management of water and sanitation for all;
7. Ensure access to affordable, reliable, sustainable and modern energy for all;
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
9. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation;
10. Reduce inequality within and among countries;
11. Make cities and human settlements inclusive, safe, resilient and sustainable;
12. Ensure sustainable consumption and production patterns;
13. Take urgent action to combat climate change and its impacts;
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development;
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels;
17. Strengthen the means of implementation and revitalise the global partnership for sustainable development;

In addition to acknowledging the challenges that were discussed and that gave rise to the SDGs, a number of generic but relevant prerequisites related to information and knowledge societies can be based on the following:

3.3.3.4 *The development of cyber-citizens/digital citizens*

What is a digital citizen? According to Gurstein (2015), the use of the term ‘digital citizen’ reflects – to a degree – the kind of person occupying societies where the use of digital technology for public (and other service) delivery is already the norm, rather than the exception. Because they are digital ‘citizens’, these persons are by implication entitled to

the rights typically accorded to citizens of the country concerned. Included in the rights of digital citizens is the right to take full advantage of the opportunities offered in the digital sphere, not only locally but also globally. Also implied by Gurstein (2015) is a move away from regarding the bridging of the digital divide as an ‘*ad hoc* activity’ and/or voluntarist programme but rather obligatory duty of the ‘modern state’. These shifts reflect the increasing significance of digital wellness in relation to the activities of the state. Gurstein (2015) reminds us that it is also a necessary corollary of those jurisdictions where digital actions are essential to active participation in civic life and/or where internet rights (or the right to the internet) are enshrined in constitutions.

According to Gurstein (2015), ‘digital citizenship’ is a newer and more evolved form of citizenship, one which is necessary and appropriate to knowledge societies. The characteristics of this new form of citizenship are many, the most notable of these being that it implies certain rights and responsibilities. One of these rights is the right of all citizens to access (digital) information, while one of the State’s responsibilities is to ensure that its citizens are in a position to exercise their digital citizenship rights in an appropriate and effective manner. Policies regarding digital citizenship will therefore have to acknowledge (and accommodate) a digital citizen’s universal right to internet access at a speed and quality that is sufficient to enable all persons as active and effective citizens. Implied in this responsibility are a number of conditions, namely (a) digital (and other) literacy at a level that enables citizens to make effective use of ICTs; and (b) the availability of technology designed for and directly linked to legal and rights-based structures created for the purpose of monitoring acts of discrimination associated with disability, age, ethnicity, and language.

3.3.3.5 The development of Information Societies and Knowledge Societies

The terms ‘information society’ and ‘knowledge society’, both central to discussions of and/or debates on digital matters, are often used interchangeably and/or in conjunction with each other. They are not, however, the same. The section that follows briefly reflects on the differences between the two.

In her explication of information and knowledge societies respectively, Sally Burch (2006) describes them in the context of the 'global village', 'technotronic era', 'post-industrial society', 'information society' or 'information age', and 'knowledge society'. According to her, the term 'information society' is a 'technological innovation', while the term 'knowledge society' refers to social, cultural, economic, political and institutional transformation. Both terms, however, contain technocratic elements and there should be absolutely clarity on what these are.

The 2005 UNESCO World Report distinguishes between knowledge societies and information societies in much the same way, with the emergence of the term 'information society' being ascribed to technological breakthroughs, while the term 'knowledge society' is associated with the well-being of individuals and communities, social and cultural traditions, as well as community ethics and politics. Although both terms are applied in the discussion of digital activity and development, 'information society' seems to be preferred when the focus is on society's use of digital technologies to create, distribute and manage information for economic and cultural purposes. The term 'knowledge society', on the other hand, is used to describe societies where the acquisition, creation, and dissemination of knowledge has social and economic development as purpose.

Given its application in various economic and cultural activities (all of which have an impact on the creation, distribution and treatment of information), definitions of the term 'information society' tend to emphasise the impact of ICTs on the social order. In knowledge societies, however, knowledge is acquired, created, disseminated and applied to enhance economic and social development (Global e-Schools and Communities Initiative (GESCI), 2012). Knowledge societies can also be defined as human-structured organisations in which the conditions for generating knowledge and processing information have been changed by the impact of ICT to focus on information processing, knowledge generation and information technologies (Afgan et al., 2010).

According to UNESCO (2015), knowledge societies develop from information societies. In justifying its position, UNESCO (2005) refers to four pillars – knowledge creation;

knowledge preservation; knowledge dissemination; knowledge utilisation – that do not only reflect all human beings' need for the principles of inclusion, but that also serve as a means of distinguishing between these two kinds of societies.

In addressing the question of national policies for countries, UNESCO (2016a) through its Information-for-All Programme (IFAP) supported participating countries (Member States) to develop and implement national policy and strategy frameworks in the following six priority areas:

- Information accessibility;
- Information for development;
- Information ethics;
- Information literacy;
- Information preservation and multilingualism in cyber-space.

While it is much too early to select priority categories that should receive special attention in the formulation of digital policy frameworks, it is important to already take cognisance of the impact that ICT development has on people with disabilities. Jaeger (2006), focusing on telecommunications policy and individuals with disabilities, highlights the need to consider accessibility and social inclusion in policy development agendas and the importance of equal telecommunications access for people with disabilities. He also emphasises the vital importance of ICT accessibility as a means of ensuring the social inclusion of people with disabilities, and urges ICT designers and developers to make an effort to better understand and accommodate various forms of disability in their designs.

While focusing on the development of policy frameworks, the UNU Handbook (2016) lists essential features for information and knowledge societies as follows: data; information; knowledge; technology and innovation; convergence of technologies; and socialisation of information. The important conclusion is that the development of an information society leads to the emergence of knowledge societies.

3.3.3.6 *The development of digital policies and related best practices*

An important perspective towards policies in the digital landscape is that information became a monetary-valued product in the new digital environment and world. Thus, information more than ever has a direct monetary value and will become an increasingly valued commodity. As far back as 1993, Howard Buchbinder (1993) explored the role of knowledge within universities and the change from social knowledge to market knowledge. The focus of his paper included the social context of knowledge, research as knowledge, and knowledge as property, and already at that time argued that in the information society, knowledge became a commodity. This statement by Buchbinder in 1993 constitutes an important cornerstone of understanding the opportunities and risks in the digital landscape.

Richard J Schaefer (1995) adopted a theoretical and normative approach to national information infrastructure policy relating to the technology and democratic discourse for developing the information infrastructures in the USA during the years of the Clinton mandate. He came inter alia to the conclusion that the implications of the information and telecommunication policies in the democratic system demanded more public interest. Also in the USA and in preparing new platforms for discussing the importance of ICT policies, one should take note of the possible dubious intentions of governments in the ICT policy development process. Jaeger (2007) wrote an article on *Information policy, information access, and democratic participation: The national and international implications of the Bush administration's information politics*. In this paper he analysed the information policy and access of the USA government during the era of the Bush administration and discussed the implications of the policies for the global digital society. In this paper, he questioned the impact of information policies for political purposes and what he called "information politics" and highlighted a number of highly disturbing policy elements. The most important included the influence of information policies in limiting information access to individuals, social groups and government organisations and the manipulation of information access for political gain. Jaeger concluded that in a world driven by information, research into digital policy development is essential. However, analysing the impact of information policy is often limited to one nation, even though there is a need to evaluate policies at a holistic level (Jaeger, 2007).

The question that remains is how to measure the existence or even the efficiency of information societies. Menou and Taylor (2006) reflected on this challenge in their paper, *A “Grand Challenge”: Measuring Information Societies*. They analysed the limitations of the information society metrics and advocates for the creation of a new academic field of study to cover this specific area. At the time (10 years ago) they identified criteria such as the following: define the objects to include in the observed total (universe); establish measurements based upon solid theories; establish units of measurements; ensure scientific data sources and collection; define objective methods of analysis; and construct indicators and target audiences. They concluded by warning that the information revolution should rather lead to benefits than damages, and therefore any understanding of the research should be grounded in solid scientific work.

In identifying (and measuring) the landscape for an information society, Fischer, Klazar and Lechaba (2016) lists three important elements: (i) access to ICT technologies and distribution; (ii) accessibility and cost effectiveness; (iii) improvement of quality of life and addressing basic needs. He also refers to awareness, basic service delivery and policy development elements that need to form part of the basic digital landscape for developing new information societies. With the same objective in mind, Jared (2015) noticed the dominant presence of ICTs in the individual’s everyday life and what he calls four novel aspects that will form the base of a digital landscape: (i) New ways to manipulate information; (ii) new kinds of interaction – online (indirect and anonymous); (iii) the increasing capacity to capture, review, store, protect, and share information; and (iv) the possibility of the global spread of information.

Getachew Engida (Deputy Director-General of UNESCO) mentioned in the foreword of the UNU Handbook (2016) that UNESCO recognises the transformative role played by information and knowledge societies across all spheres of human endeavour. According to Engida, ICTs enhance information and the sharing of knowledge by catalysing changes across societal, economic and political landscapes. Universal access to information and

knowledge becomes crucial for social cohesion, sustainable economic development, intercultural dialogue and peace (Handbook, 2016).

3.3.3.7 *The development of local digital content for the e-Society*

According to the Department of Telecommunications and Postal Services (DTPS) (2015), digital content in any country should promote local content development, distribution and job creation, especially in the case of developing countries. As far as South Africa is concerned, it should moreover preserve – in a digital format – the country’s culture, art and heritage. The South African government acknowledges the challenges that have to be overcome in the development of digital local content. These challenges include a lack of available digital content in local languages and delays in the promulgation of the Language Bill. Language rights are enshrined in the Constitution but, while there seems to be some evidence that indigenous languages are being promoted in broadcasting, this is not happening elsewhere since other e-platforms lack coordination and resources.

3.3.3.8 *Creating e-Inclusivity?*

e-Inclusivity seems a generalised term that refers to the ability of people to use ICT on a sustainable in various sectors of their lives. For the purpose of this study e-inclusivity specifically also includes people with disabilities, rural citizens, women and the youth in general. Towards e-inclusivity the DTPS (2015) cites the Millennium Declaration that was adopted by the United Nations in 2000 and states that knowledge is the one resource that can liberates people from poverty and empowers them. The Millennium Declaration also emphasised the urgency of ensuring that the benefits of new ICT technologies are made available to all. By implication, any attempt to improve the quality of life of people in developing countries would be incomplete without progress in the empowerment of women, children, the youth and people living with disabilities.

While the DTPS (2015) acknowledges that access to ICTs could be seen as a positive way to include those who are socially, economically or politically disadvantaged, it notes that the exclusion of vulnerable groups as well as other inequalities in society could be ascribed to a mix or combination of complex and contextual factors. These include (but

are not limited to) education, cultural norms and institutional structures. In South Africa, the greatest challenge is the increasing inequality between the rich and the poor, women and men, urban and rural communities.

A large proportion of persons with disabilities have in the past not been accommodated in the education system. Their exclusion is partially due to physical and infrastructural barriers within the system itself and partially to traditional or societal perceptions of the disabled. Theoretically speaking, ICTs and other digital technologies have the potential to correct this injustice by enabling persons with disabilities not only to receive the kind of education necessary for the development of their abilities, but also to become productive and integrated members of one or more knowledge societies (DTPS, 2015).

The DTPS policy (DTPS, 2015) acknowledges the need to address the gap between males and females in knowledge societies as an ethical challenge. Closing the gap in male-female employment, for example, is good for economic growth, as indicated in Europe's economic growth figures over the past decade (World Bank, 2016). Moreover, countries that divide their ICT resources equitably among men and women fare better – economically, socially and politically – than those who do not (World Economic Forum, 2016). By implication, the availability and employment of human resources with the requisite ICT skills – irrespective of gender and disability – will remain a key factor in a knowledge society's economic growth.

According to the DTPS (2015), the equal employment of highly skilled males and females in the ICT sector is critical not only to the building of a vibrant and diversified ICT sector in South Africa but also to creating an enabling working environment for women and girls. Such employment equity does not currently seem to be the case. Although South Africa's ICT sector has grown significantly in recent years, there is little evidence that this has led to the narrowing of the male-female employment gap. Very few women have to date been employed in this sector and, if they have, it has been mostly in lower-level ICT occupations. Indications are that this is changing, albeit slowly, with women gradually

beginning to make inroads into the technical field and breaking the glass barrier to higher professional levels.

The DTSPS policy (DTSPS, 2015) reiterates the view held by the South African government that young people are the ones who first adopted information communication technologies and are now the ones most suited to becoming leaders and innovative creators in the ICT field. Based on this premise, the DTSPS has adopted a South African strategy that prioritises the development of young people in the ICT field so as to stimulate their energy and drive, their desire for innovation, and their inclination to question the status quo. The DTSPS does, however, acknowledge the many challenges and security threats that prevent young people, especially those from disadvantaged backgrounds, from reaching their full potential through the use of ICTs. Key among these challenges is the unequal education system in the country, in which urban and private schools are more resourced than their rural and public counterparts (DTSPS, 2015).

The issues addressed under 3.3.3 does bring to the fore a number of detailed challenges of ethical and policy relevance that will be discussed next. This will be done referring to South Africa as the primary example. These challenges include:

(a) The challenge of funding

Rolling out ICT infrastructure requires large investments, something that government on its own cannot provide; hence, private sector funding is critical to the success of a venture such as this. Also, the strategy must be underpinned by appropriate costing and funding models. Funding could, for example, come from the government sources, and the budget should be determined in terms of annual cycles, based on projections of growth. Funding for ICT initiatives in priority areas should be determined and business cases developed as motivation for funding. In short, funds for major initiatives in the e-strategy should be subject to business cases and funding proposals.

(b) The challenge of low levels of access and accessibility

The World Summit on the Information Society (WSIS) Action Line C2 (2005) considers Information and Communications Technology Infrastructure as “an essential foundation for the information society”. In this regard, South Africa has for example committed to develop a National Broadband Policy that provides bold policy directives and targets for the rollout of South Africa’s broadband infrastructure. Broadband is a critical enabler for the attainment of an ICT vision for South Africa as it will ensure “universal access to reliable, affordable and secure broadband services by 2020 and encourage sustainable usage”.

Although ICTs have the potential to facilitate South Africa’s economic development and contribute to job creation and poverty alleviation, adoption is low in comparison with that in the country’s trading partners. According to the United Nations State of Broadband Report 2014, South Africa gained a few levels in the global broadband rankings, climbing from 92nd to 80th place. The penetration rates (rating) of fixed and mobile broadband in over 190 countries show that 48.9% of South Africans had access to the internet in 2014, compared to 41% (92nd) in 2013. Ranked against other developing nations, South Africa is in position 37, up from 44 in the previous year. Its fixed broadband penetration has also improved – from 2.2% (111th) in the 2013 report, to 3.1% (106th) in 2014 (DTPS, 2015).

(c) The challenge of rural areas

Government estimates that, although almost 60% of the South African population live in areas classified as rural, the use of ICTs by ordinary citizens, public institutions, as well as small, micro and medium enterprises (SMME) is extremely low. Realising the need for a coordinated and focused rural development approach to eradicate inequality and poverty in rural areas, and assuming that access to ICTs has the potential to improve the lives of rural communities, the government has committed itself to increasing the access, uptake and usage of digital infrastructure in these communities.

Infrastructure deployment in South Africa is not equitable since it is subject to corporate customers’ demands and investment in metropolitan areas is being prioritised. Consequently, over 26 million people located in under-serviced rural communities in

South Africa are unable to access public services through ICTs. The marginalisation of the needs of rural and other disadvantaged communities could be said to contribute to the existence of the digital divide in South Africa. To bridge this gap, the South African government has to roll out broadband to rural communities as a matter of urgency. The problem is that such a venture is expensive and, because investment in rural development is seldom (if ever) commercially profitable, the private sector is reluctant to invest in it. By implication, the burden to fund broadband roll-out to these communities falls squarely on the shoulders of the government, either through State funding and/or by other means (DTPS, 2015).

There is no single solution to this problem. While the rural development programme run by the South African Department of Rural Development and Land Reform plays a critical role, it has to be supplemented with other initiatives. In line with their ICT development objectives, the DTPS in South Africa already started to develop an ICT rural development strategy that outlines interventions that are necessary to ensure the uptake and usage of ICTs by rural communities. These ICT interventions prioritise projects that include digital terrestrial television roll-out, local content hubs for radio and television, community radio stations roll-out, incubation hubs, telecentres and digital infrastructure at rural post offices. The aim of the projects is to empower the local communities to fully participate in these ICT interventions as proposed in the ICT Rural Development Strategy (DTPS, 2015).

(d) The challenge of a shortage of e-skills

The South African economy experiences a shortage of critical ICT skills required for growth and development. If not properly addressed, this shortage is likely to suppress the country's economic development. Skilled ICT professionals are needed to produce ICT goods and services that will contribute to the country's development. In this regard, fears have been raised that SA's institutions of higher learning are not producing sufficient numbers of graduates with the required levels of ICT skills in keeping with international trends (DTPS, 2015).

(e) The challenge of cyber-crime and cyber-safety

As is the case all over the world, South Africa is not exempt from cyber-threats either. Fears regarding the consequences of cyber-crime contribute to the low uptake and use of ICTs. The South African government acknowledges the threats posed by cyber-attacks and recently developed a Media Bill as well as a cyber-security policy to deal with security threats. Nevertheless, media reports indicate hardly any decrease in the activities of hackers, fraudulent use of credit cards, threats on social media (DTPS, 2015).

(f) The challenge of connectivity costs

The high cost of connectivity is another major factor contributing to the perpetuation of the 'digital divide'; this time between the rich and the poor. Ironically, high-income countries pay relatively less for ICT services than the world's poorest countries (DTPS, 2015), thus inhibiting economic growth in those countries that need it most.

(g) The challenge of knowledge society enablers

Knowledge society enablers are essential to the development of South Africa as a dynamic information society and knowledge economy. Such enablers should at least include a regulatory environment, a stable ICT network infrastructure, effective and efficient communication services, human resources development and e-services for e-development (DTPS, 2015). Potential enablers should furthermore not be isolated from one another but be interdependent, and they should include ICT and digital acceptance, a South African National Backbone Network, under-sea cables, a radio frequency spectrum, research, and education.

(h) The challenge of ICT and digital acceptance

According to the DTPS (2015), South Africa has the most advanced mobile market of all the countries in Africa, with mobile penetration – 136% in 2014 – suggesting that there are more sim cards than people in the country. However, whilst the voice market has obviously matured, the usage of data has not. The broadcasting industry has also grown, particularly with regard to Community Radio market licences. In 2015 South Africa had 170 community radio stations and 12 public radio stations, and 19 plus commercial radio

licences had been issued. e-Commerce in South Africa has grown from 30% to 35% in the past nine years. The total amount spent on internet shopping by the end of 2014 was about R6 billion, a small amount in comparison to that spent in developed markets such as the UK, USA and South Korea, but nevertheless indicating great potential for growth opportunities in South Africa (DTPS, 2015).

(i) The challenge of a National Backbone Network with undersea cables

The National Backbone Network envisaged in the National Broadband Policy adopted by the SA government is a key enabler for the e-Strategy. Since knowledge-based economies depend on this digital infrastructure, the broadband strategy calls for a 100% broadband penetration in the country by 2030. This will ensure the realisation of e-development initiatives such as the use of ICTs for e-Government, e-Commerce, e-Health, e-Education and other e-Services (DTPS, 2015).

The development of a robust ICT infrastructure is essential to ensuring that South Africa benefits from developments in ICT and the growth of digital networks. Between 2009 and 2012 the South African government, determined to create a sound ICT infrastructure for the country, completed three submarine cable projects and adopted a National Infrastructure Plan (NIP) aimed at economic transformation through job creation and the strengthening of basic service delivery (DTPS, 2015). Services from the SEACOM cable started in June 2009, from the EASSY cable in July 2010, and from the WACS cable in May 2012. Other cables already operational at the time were the SAFE and SAT-3 cables. In support of these projects, the SA government set up a state-owned broadband company, Infraco, to facilitate the roll-out of broadband across South Africa, thus creating opportunities for people in rural areas to access, take up and use ICT.

(j) The challenge of Radio Frequency Spectrum

A radio frequency spectrum is critical to the provision of broadband services. The South African ICT infrastructure is characterised by two digital access systems, namely an internet and a mobile system. Until three years ago, these were distinctly separate systems, in some ways defining the digital divide in South Africa. Due to the human need

for communication, the aggressive marketing of mobile communications – funded from the high profit margins accumulated via these networks – rendered mobile technologies pervasive in South Africa by 2008. Currently, the country is experiencing rapid growth in the uptake and usage of mobile broadband infrastructure, which is ascribed to investments made by the mobile operators, Vodacom, MTN and Cell-C. The country's fixed-line telecommunications network provider, Telkom, has also entered and invested in the mobile domain (DTPS, 2015).

(k) The challenge of relevant research

The South African Government's Information Society and Development (ISAD) plan refers to capacity development as the expansion of information and knowledge resources through increased research and development, as well as through improved co-operation between business, government and the universities (as part of the education sector) to support knowledge-intensive industries. Informed by UNESCO's argument that national capability in ICT research and development should be enhanced to achieve sustainable development of the information society (WSIS 2003), the South African government started implementing its National ICT Research and Development (R&D) strategy in 2007, the Department of Science and Technology developed an ICT R&D and Innovation Strategy, and Cabinet approved an ICT Roadmap aimed at the promotion and strengthening of research, development and innovation (RDI) in the country. In terms of the Roadmap, there should be an enabling framework for the systematic advancement of ICT R&D and Innovation within the context of the National R&D strategy. The objective is to create research networks that will facilitate the sharing of data collection systems, research knowledge and problem solutions so as to inform policy development and position South Africa competitively in the global knowledge-based economy (DTPS, 2015).

(l) The challenge of education in the digital environment

From the perspective of the World Summit on Information Society (2005), e-skills are essential to the empowerment of individuals with regard to their full participation as citizens of an information society. Citizens like these would be able to take advantage of opportunities for employment and wealth creation, innovative education and learning opportunities, as well as new life-enhancing services such as interaction with public authorities.

According to the DTSP (2015), a knowledge economy is highly dependent on specialised ICT skills and the role these will play in new and reinvented industries. The ICT job market has grown significantly in recent years and for South Africa to take advantage of the technological advances that are needed to provide in the demand for services, it has to become an e-literate society by 2030. Education – from basic to higher education and training – is one of the pillars on which rests the DTSP strategy to move South Africa from a resource-based economy to a knowledge-based economy (DTSP, 2015).

The DTSP (2015) focused on the National Development Plan for South Africa and the results of the National ICT Policy Review (concluded in March 2015), and it highlighted what could be considered key initiatives or achievements. Firstly, a Framing Paper issued in April 2013 sought input on what the objectives and goals of policy should be. These principles remained largely the same as those set in 1994, though the means to realise them were changed. Secondly, under the direction and guidance of the Review Panel, the Department commissioned research that provided input into the formulation of a Green Paper that was released in January 2014. This Paper assessed achievements against the original vision, tried to identify major impediments (core issues and problems) to its realisation, and recommended that they should be addressed in future policy. Thirdly, in November 2013, the Department released a Discussion Paper that presented a range of policy options and possible policy approaches. These aimed at addressing the impediments identified in the Green Paper and, by implication, ensured the realisation of the objectives stated in the Framing Paper.

The rationale for the development of a National e-Strategy for South Africa was articulated in the South African National Development Plan: Vision 2013. The government would develop an e-strategy to underpin the development of an inclusive information society and knowledge economy as described in Chapter Four of this plan. The aim of the e-strategy would be to provide guidelines for growth and innovation in both the public and private ICT sectors, and to emphasise investment in broadband infrastructure and local content development (DTPS, 2015).

The purpose of the National e-Strategy is to give strategic direction to the implementation of an Information and Communications Technology (ICT) vision for South Africa. As such, it would serve as the basis for a national ICT agenda towards the achievement of Vision 2030. Most importantly, the National e-Strategy is aimed at directing South Africa towards becoming a knowledge-based economy by determining what is needed to create a policy and regulatory environment, an ICT Network Infrastructure, and communication services conducive to human capital development and e-services for Development (DTPS, 2015).

Included in the recommendations of the panel that conducted the ICT Policy Review was the suggestion that there should be a single e-Government Policy and Strategy to ensure the alignment of all government priorities. To this purpose, the National e-Strategy called for collaboration and consultation in the public and private sectors (DTPS, 2015). The envisaged e-Strategy needs to transform all sectors of the South African economy, and it should make it simple for consumers to explore and access markets on the basis of public and private sector collaboration. The applicable ministry is mandated by the Electronic Communications and Transactions Act (ECTA) to develop a three-year national e-strategy for SA, which must be submitted to the Cabinet for approval. The ECTA outlines the processes to be undertaken in the development and implementation of the e-strategy as well as the coordination and monitoring of its implementation. As stipulated in the Act, the development of the e-Strategy should be inclusive and integrated, and satisfy the needs of the citizens, business and the public sector so as to lead to socio-economic growth and development (DTPS, 2016).

Informed by the same assumption, the ISAD Plan elected the e-Skills Institute as a national catalytic collaborator, facilitator and change agent for developing e-skills capacity in the country. This Institute aims to address the challenge faced by the Department of Basic Education with regard to the training of 10 000 under-qualified and 20 000 unqualified teachers. To address this challenge, the Department of Basic Education, in collaboration with business, established Vodacom ICT Resource Centres in all the provinces. Each of these centres has a computer classroom and an internet café and serves as the hub of the district's teacher training programme. The government, through the Department of Higher Education and Training, has moreover developed a 20-year Human Resource Development Strategy to ensure that South Africa is ranked in the top 10% of comparable countries in terms of its Technology and Innovation Index (DTPS, 2015).

In a modern knowledge economy, human capital is critical to effective and efficient service delivery. South Africa is still challenged in this regard, as the shortage of ICT skills in the country causes a bottleneck in human capital development towards a knowledge economy. The shortage of ICT skills is often attributed to a mismatch between the supply and demand of skills in the labour market. This shortage is intensified by the loss of skills resulting from the brain drain to other countries where higher salaries and better conditions of employment are offered (DTPS, 2015).

As early as 2004, the White Paper on e-Education in South Africa indicated that its goal was to make every South African learner in a public school 'ICT capable' by 2013. This objective was not achieved, due to a number of challenges: (i) only a few schools have access to quality digital teaching and learning content; (ii) the current level of ICT infrastructure provision to schools, including connectivity to the internet, is limited; and (iii) teachers who are said to be ICT capable merely use the technology to replicate the traditional mode of teaching rather than to innovatively facilitate learning and creatively engage learners (DTPS, 2015).

The preceding overview of the current status of ICT in South Africa serves two functions. Firstly, it suggests that strategic plans, media acts and digital policies serve as drivers for government actions related to the utilisation of ICTs to transform the country into a globally competitive knowledge and information society. Secondly, if combined with insights gained from the description of the digital landscapes in Egypt, Kenya, Uganda, Rwanda and Botswana, it serves as a summary of the challenges faced by most of the developing countries on the African continent regarding the creation of digital knowledge and information societies. Insights gained from this overview could now serve as basis for the formulation of guidelines that could help such countries to address challenges related to digital policy making and strategic planning in Southern Africa.

As mentioned earlier, the example used in paragraphs (a) to (l) focused on the detail of the South African situation, while paragraphs (m) to (p) concentrate on international guidelines towards understanding the challenges for e-inclusivity.

(m) The challenge of digital policies and strategies for Southern Africa

In terms of the 2003 Plan of Action presented and endorsed at the World Summit on Information Societies (WSIS), the development of “national e-strategies, including the necessary human capacity building, should be encouraged by all countries by 2005, taking into account different national circumstances” (WSIS, 2003). Following this, the WSIS in its Tunis Commitment (WSIS, 2005b) declared that it also recognised the tremendously positive impact that the ICT revolution could, as an “instrument of sustainable development”, have on “sustainable development”. Also, “an appropriate enabling environment at national and international levels could prevent increasing social and economic divisions, and the widening of the gap between rich and poor countries, regions, and individuals – including between men and women”. In short, the WSIS “acknowledged the central role of public policy in setting the framework in which resource mobilization can take place”. In Paragraph 84 of the Tunis Agenda for the Information Society (WSIS, 2005a), the WSIS suggests that, in order to fulfil this role, governments should, in conjunction with other stakeholders, “identify those areas where further effort and resources are required, and jointly identify, and where appropriate develop,

implementation strategies, mechanisms and processes for WSIS outcomes at international, regional, national and local levels, paying particular attention to people and groups that are still marginalized in their access to, and utilization of ICT”.

A whole range of principles for the formulation and structure of objectives for the development of knowledge societies (the discussion of which does not form part of this study) can also be found in the following: the UN 2030 Sustainable Society Agenda; various (2003, 2005 and 2015) WSIS declarations; regional objectives (formulated by the Arab States, Asia and the Pacific, Latin America and the Caribbean, Europe, North America, East, West and Central Africa); macro-regional development objectives; national development goals; regional (provinces, federal states within a country) development goals; local innovation and development goals; and principles and goals informing North-South, North-North and South-South regional cooperation programmes.

The commitment of public sector entities, especially governments, to utilise the full potential of ICT is critical to the development of knowledge societies (Handbook, 2016). It is government, at all levels of the system, that determines how any country, region and/or city utilises digital opportunities. Maximum utilisation of ICT as an enabling and developmental building block cannot, however, be realised in the absence of digital/ICT policies or when existing digital/ICT policies are implemented and managed ineffectively. The participation and/or involvement of government, ICT users, international organisations, private sector academia and civil society is also critical in the formulation and implementation of policies. Relationships between these parties could, among others, be forged through public-private, public-private-people, government-academia, government and non-profit/private user partnerships, as well as through other partnerships.

The Handbook (2016) defines private sector entities as firms, companies, entrepreneurs, SMEs, corporates, and other profit-seeking organisations operating in the market and private sector (e.g. commercial ICT and technology sectors), as well as their representatives (i.e. employers' and trade organisations). This sector is a valuable partner

and essential in creating a Knowledge Economy, given its resilience as a sector that frequently leads technological and organisational innovations. By forming partnerships with this sector, governments could avail themselves of an entire range of capabilities, competencies and resources to complement their own (Handbook, 2016). In addition to these, education and research entities – schools, colleges, universities, research institutes, and research and innovation labs, technology parks – have an important role to play in the development of digital knowledge societies by providing governments with highly qualified human resources, researchers, and knowledge creators (Handbook, 2016).

Included in the Handbook's (2016) definition of civil society are non-profit formal organisations (like NGOs, charities, foundations, associations, trades unions and non-profit-seeking social entrepreneurs), and more informal communities, interest groups and movements, citizens, and ICT users. The primary role of civil society, as spelt out in the Handbook, is to defend the interests of ICT users, to contribute to the development of public policies from the point of view of citizenship, and to guide technological applications towards the attainment of sustainable development goals. ICT users – that is, individuals and groups who use computers, mobile devices, cellular technologies and IT tools in their inter-organisational and interpersonal interactions – could, according to the Handbook (2016), make grass-root contributions to the development of policies and guidelines.

(n) The challenge of political will towards policy frameworks and action

As stated earlier for activities aimed at formulating ICT policies, the notion of political will is necessary. This means that governments should fully acknowledge that ICT is an issue to be addressed in public policies (Guerra et al. , 2008). UNESCO (2009) nevertheless warns that in many countries the replacement and change of political and technical civil servants in charge in different policy development positions will have a fundamental impact on policies in the knowledge societies.

The researcher's personal experience indicates, however, that political will is difficult to measure. Political statements and election remarks can mostly be considered as attempts

to ensure election or re-election. Political will is only measurable in the creation of formal policy to give effect to political rhetoric. It is thus important to observe ICT policy environments in Africa to establish the political will on the African continent towards countries becoming information societies and, later, knowledge societies. This view is supported by the UNU Knowledge Societies Policy Handbook (2016), which states that public policies reflect the intentions of the government concerned. The Handbook (2016) confirms that without policies there can be no governance, and it argues that explicit policies allow the public to measure the achievements of the government, while policy documents list only the objectives of governments for a specific area.

In terms of the Handbook (2016), a country could be said to have a Knowledge Society Policy (KSP) only if the policy is explicitly stated in an official document, or implied in a higher hierarchy document, such as a national development plan.

It should be mentioned again that for the purpose of this study, the position of policy makers and influential policy role players on the African continent is studied and analysed within the context of an increasing global environment. This chapter thus focuses on the role played by governments, policy frameworks and regional organs in Africa, as well as on international influences by way of the UN, UNESCO, WSIS, IFAP, various selected academic institutions and universities, the Capurro-Fiek Foundation, the ANIE, the ACEIE and relevant private sector role players.

(o) *The challenge of e-Governance, e-Government and e-Readiness*

Horton (2008) describes e-government as the automation of government as an institution to ensure that all its major services become automated, whereas the term 'e-governance' refers to the processes by which a government interacts with its citizens, businesses, other levels of government and various stakeholder groups, using digital processes and ICTs.

e-Readiness, according to Horton (2008), is a term used to refer to a broad survey or assessment of the components that make up the digital landscape so as to determine

whether a country is ready to embark on e-governance and e-government. The components included in Horton's (2008) list are communications infrastructure; institutional frameworks; human resources and capacity; available budget and resources; policy frameworks; and the involvement of both industry and social sectors. Horton (2008) discusses the available information access infrastructure for public and private domains, laws and regulations (in addition to policies) and also emphasises the importance of involving academia, NGOs and not-for-profit organisations.

(p) The challenge of intergovernmental networking towards policies and best practices

In considering what UNESCO (2005) calls 'cross-national' or 'cross-regional' application of policy initiatives, it is relevant and important to look at networks as well as national, regional, and local contexts.

According to the UNU Handbook (2016), networking towards the development of policies implies an exchange of information and experiences between stakeholders in specific sectors and geographical regions. Exchanges may occur via electronic networks, virtual or face-to-face workshops, seminars, the establishment of communities of knowledge and/or practice, and/or the creation of databases and websites that create opportunities for diverse stakeholders to interact with one another. Networks could focus on a number of issues and topics, including legal frameworks, norms and standards, and best practice, as well as on the introduction of innovative procedures in cross-border areas, neighbouring countries and different regions, like Southern Africa. In short, the main purpose of networking is to address the challenge towards regional cooperation to serve as a mechanism to facilitate cross-border coordination on public policy matters.

In principle, digital policies should address the challenge of what people and institutions should (or should not) have access to. The policies should also propose the use of specific digital infrastructures and, if people do have access, how they should use the infrastructure and information available to them. The UNU Handbook (2016) mentions five areas in which policies are necessary to ensure sustainable development, namely

access and availability, general and basic skills, human resources and development, digital benefits, and monitoring.

With regard to access and availability, the challenge involves access to and/or the availability of internet, broadband, computers, mobile devices, and relevant online services like social media and content, that is, digital infrastructure and ICT tools. The need for general and basic skills emerges from individual and group capability, motivation, and opportunity. Human resources and development speak to education, occupation, labour market status and income, and they take account of demographic characteristics like gender and age. Digital benefits (the actual benefits that people and organisations derive from the use of digital infrastructure while monitoring) focus on the benefits derived from participation in the co-production/co-creation and development of new tools and/or the improvement of existing tools in an Information Society (UNU Handbook, 2016).

In conclusion one has to accept that the digital environment with its high speed ongoing developments impacts on the most basic aspects of Information Ethics. The mentioned challenges towards e-inclusion, influence ethics in the digital environment mainly by lack of skills, limited resources, lack of policy frameworks and infrastructure limitations. These challenges effect the Information Ethics environment in two main areas; through environmental and personal impacts.

Environmental impacts can be described as those elements that create or disrupt access and accessibility to information as a result of availability of lack of an ICT base. This base is built up by amongst others policies, physical ICT structure, digital development initiatives, international agreements, guidelines for cyber safety and cost structures. Personal impacts describe matters like training facilities, personal knowledge and skills, sufficient personal resources and acceptance of personal responsibilities. Both environmental and personal platforms must be addressed to ensure a sustainable information and knowledge society.

3.3.3.9 A moral imperative to address the challenges – guidelines for Southern African policy structures on all levels of government

As described in the previous paragraph, various challenges exist in building information and knowledge societies. Most of these challenges are to be addressed by either a governmental policy framework or a personal ethical framework.

To govern is to rule and guide on all levels of society. By implication, governance without rules is not possible. These rules are typically spelt out in policies and related guidelines. Put differently, policies not only form the backbone of governance, but also reflect the intentions of a country's ruling government (Handbook, 2016). In the context of this study, the question is to which extent policy frameworks could help in the development of an inclusive and sustainable information society. In attempting to answer this question, Verdegem (2011) concluded that the first wave of information society policies was dominated by technological achievements, but the emphasis later shifted to the enhancement of economic performance. Observing that the domination of an economic focus in information society policies often neglects, ignores or undermines social and cultural features of societies, he urges researchers to guide policy makers towards considering the advantages that the development of information society policies should have for all citizens.

As to the development of such policies for developing communities, and the African continent in particular, strategists and policy makers should take cognisance of policies in countries at the forefront of technological innovation, and use these as basis for their own policy strategies. By implication, governments in developing countries should establish co-operative working relationships with science and technology centres abroad. These centres focus on technological and scientific production, innovation, education, specialised training, knowledge management, utilisation of 'available brains', minimisation of "brain drain", and encouragement of "brain gain" (Handbook, 2016). The importance of continuity in national policy is critical: policy making should not be regarded as a 'project' with a 'limited life span' affected by changes to government and

administrations. New governments, wanting to 'make a fresh start', often dismantle or retract existing policies and plans with a view to replacing these with 'new' ones that reflect their own political position. Pursuing political rather than national objectives could undermine long-term digital programmes and/or drain the enthusiasm and resources of those contributing to the enabling and development of digital communities. It is important, therefore, to ensure that digital policies are enshrined in legislation that will ensure its survival – regardless of political or ideological changes informing new government structures (Handbook, 2016). By implication, digital citizens at all levels of society – i.e. people in general, not only government officials – should be actively involved in policy making (Gurstein, 2015).

The availability, implementation and management of policies are directly related to the quality of government institutions, the independence of the judiciary, and the quality of the civil service and political parties involved in the policy-making process (Handbook, 2016). Added to this is the availability of academia as well as private sector research and development agencies. In this regard, Melody (1996) warned governments not to allow ICT suppliers to lead investments, since this could lead to unbalanced growth and a division between rich and poor citizens. Instead, Melody (1996) urged governments to determine what the information infrastructure priorities should be and then to develop their information society policies around these. The identification of such priorities could, according to Melody, be facilitated using an analytical framework that he developed during the course of his own research into information society policy making. The Handbook (2016) mentions the following six important factors to be considered in addressing challenges and the formulation of policies:

- The degree of awareness and engagement of political role players and stakeholders regarding the importance of knowledge societies. Governments that are informed about the importance and impact of policies and that are willing to build a policy framework, will usually be supportive of and receptive to the dynamics of policy development processes.

- The status of State agencies in charge of policy framework design influences the hierarchical level of the agency, group or person mandated to lead the national policy development strategy.
- Another critical aspect to be considered in strategic plans and policy making for knowledge societies is the building and distribution of the ICT infrastructure and services. Policies should be aimed at the provision of universal access and a basic minimum connectivity for all communities (including marginalised groups, rural communities, ethnic minorities, women, the disabled and elderly people) (ECLAC, 2003).
- Since national regulatory frameworks form a key platform for the development of ICT policies and frameworks, regulations should be established or adjusted to ensure the implementation, assessment and revision of existing national policies where necessary, with growth-orientated regulations in the telecommunications industry and the strengthening of ICT markets being earmarked as key policy areas (ECLAC, 2003).
- Since scarcities and inequalities in ICT-related skills obstruct growth and inhibit competitiveness, innovation, employment and social organisation in information societies, development in the digital arena must be supported by qualified role players with the knowledge and skills to use ICT. Such role players would include researchers, engineers, computer scientists, technicians, as well as economists and political scientists.
- Many countries recognise the urgent need to transform their education systems to include ICT developments and update e-skills. Even so, implementation of these improvements is still uneven within and between countries. According the Handbook (2016), priorities should include the following:

- Investing in education at all levels, and creating opportunities and incentives for private sector investment in education and lifelong training in e-skills (i.e. the effective application of ICT systems and devices). Users vary from ICT specialists who have the ability to develop, operate, and maintain ICT systems, to basic ICT users who are capable users of the mainstream tools needed in their working life.
- Focusing governmental interventions on key issues of quality, relevance, impact of education, and access for all.
- Integrating formal, informal, technical, adult and distance education and training to provide a greater range of opportunities for lifelong learning.
- Creating policy and regulatory frameworks (including certification schemes) that may make lifelong learning opportunities attractive and easy for people to pursue.

In identifying solutions for challenges and policy guidelines for knowledge societies, Chuaire et al. (2014) also highlights a number of elements that should be considered in the formulation of public policies, six of which are mentioned here.

- Policy Stability, where having stable policies does not mean that policies cannot change but that changes have to take place in response to changing economic conditions or a failure of previous policies, rather than to changes in government or political 'surprises'.
- Policy Adaptability, which refers to the ability to change policies when existing policies are failing, to change economic conditions, or to align policies with international best practices.

- Policy Coordination and Coherence, referring to a lack of coordination between different levels of government.
- Policy Implementation and Enforcement, where the quality of policy implementation and enforcement depends on the extent of government incentives and resources to invest in support of policies.
- Policy Efficiency in terms of governments optimising available human and economic resources.
- Public Regard, with particular reference to the extent to which policies produced by a given system promote the general welfare of a community or country.

It is clear that creating a digital policy environment is not a decision but rather a process. This process becomes more effective when the participating structures are as inclusive as possible, with provinces, countries and continental regions working together. In support of this view, the UNU Handbook (2016) listed seven phases as part of this process:

- (i) During the first phase the environment in which the country operates has to be assessed in terms of its position or status quo within a regional or global context. The results of this assessment should then serve as basis for the inclusion or exclusion of specific needs and aspirations in a policy framework.
- (ii) The second phase is about the clarification of a vision, mission, and medium- and long-term goals. This is achieved in the generation and deployment of envisaged types of knowledge, know-how, innovation, and prioritising.
- (iii) The focus of the third phase is on the analysis and design of elements related to governance structures and stakeholder roles with a view to coordinating

- policy implementation and intervention programmes. Included in this process is the listing of specific objectives, actions, inputs, activities, outputs or outcomes, as well as financial and operational feasibility.
- (iv) During the fourth phase the focus is on the development of detailed action plans for the implementation of a policy framework by using appropriate professional and transparent management and coordination tools.
 - (v) The focus during the fifth phase is on the updating – effecting necessary corrections or adjustments as indicated in regular feedback and observations – and maintenance of policy frameworks.
 - (vi) The sixth phase is about monitoring and evaluation – assessing inputs, activities, outputs / outcomes and impacts, efficiency, effectiveness, utility and sustainability.
 - (vii) The focus of the seventh phase is on ongoing two-way communication with a wider society, external stakeholders and interested parties, including the general public – a process aimed at enabling the digital society to share information and awareness, and at achieving public consultation and engagement.

Following from these guidelines, it seems that digital citizens in Southern Africa should be motivated to become part of local and global information societies so that they can experience the benefits of the digital environment. Motivation towards such commitment requires the provision of e-services that will make their lives easier. From a governance perspective, available digital services or e-services must make it easier for citizens to apply for permits, track progress through the process, schedule inspections, pay for services, and register for municipal activities; otherwise they will not be motivated to change. Should they experience the benefits of e-services, though, not only individuals

but also small and medium enterprises (SMEs) will support and promote the use of digital technologies for and by their clients (UNU Handbook, 2016).

In most developing communities, the provision of services like these would require governmental and non-governmental provision of telecommunications infrastructure and connectivity services, as well as the availability of and access to cyber-café, information kiosks, community technological centres, telecentres, public libraries, schools, and cell phones that will create e-readiness. Should these services be provided, their effectiveness and the comfort they provide to users could potentially serve as a platform for encouraging countries' populations to access and appropriate the benefits of information.

3.4 Addressing ethical challenges in the developing digital world

In terms of both the research questions guiding this study and evaluating the impact of the digital landscape on the cyber-citizens in Southern Africa, it is necessary to strike a balance between the digital infrastructure and personal ethics in building and using the digital landscape. This required balance will need equal measures of digital infrastructure and personal readiness and commitment to use the new digital opportunities. The lack of either seems to create ethical challenges in the digital environment. This void also develops because of a lack of education in digital behaviour and use of ICT in general. If true, it can be addressed by focused orientation programmes and dedicated training and development of human capacity.

Should the basic digital infrastructure in targeted countries and/or communities not be ready for use, attempts at training the users might frustrate participants and waste resources. Furthermore, if governments or the private sector were to supply connectivity and access to digital infrastructure without the necessary training and preparation, communities run the risk that the users of the infrastructure will be rendered vulnerable. Figure 7 indicates the balance required between policies and infrastructure if the goals of enabling information societies (on the one hand) and ensuring that individuals know how to operate and personally behave on the internet (on the other) are to be achieved.

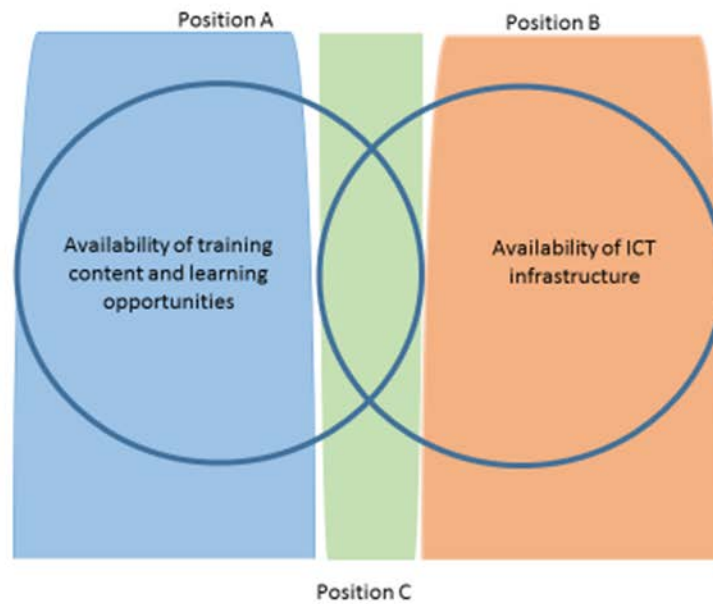


Figure 7: Ideal policy-infrastructure balance for digital development

As illustrated in Figure 7, the ideal balance between available infrastructure and personal skills could be acquired by reducing positions A and B to 0% while simultaneously increasing position C to 100%. In doing so, the potential for information ethics teaching and learning in Southern African communities could be maximised. It would be imperative to determine the availability of basic infrastructure and balance it with potential risks in the digital environment, prior to embarking on any training. Should the infrastructure not be sufficient, any attempt to train individuals and societies on information ethics will be thwarted, and trainers and trainees alike would experience nothing but frustration.

In offering his definition of e-skills, Steyaert (2002) distinguished between three kinds of skills: instrumental e-skills for the operational manipulation of technology; structural e-skills that focus on the structure in which information is contained; and strategic e-skills that address the basic readiness to proactively look for information, information-based decision making and scanning the environment for relevant information.

In support of this view, Van Dijk (2005) distinguished among operational, information and strategic e-skills. However, he regarded operational skills as the skills to operate computer and network hardware and software, while information skills were the skills to search, select and process information in various sources. Van Dijk (2005) perceived formal information skills as the ability to understand and handle the formal characteristics of a computer and network. He then described the substantial information skills as the ability to find, select, process and evaluate information according to specific questions and needs. A few years later, van Deursen and van Dijk (2010) introduced formal skills for the former and information skills for the latter as two separate categories. While formal skills strongly relate to the characteristics of digital technology, information skills together with strategic skills relate to the content provided by ICT tools. They described operational skills as the skills to operate digital media and formal skills as the skills to handle the structures of a digital environment. They then referred to information skills as the skills to locate digital information and strategic skills as the skills to employ the information contained in digital media for personal and professional development (Van Deursen & van Dijk, 2010).

In Southern Africa, the process towards digital skills and commitment to e-government started with NEPAD (New Partnership for Africa's Development) which urged governments on the African continent to implement e-government structures (Mukhudwana, 2008).

Mukhudwana (2008) refers to an event in August 2008 when the University of Pretoria and the Africa Network for Information Ethics organised a four-day (18 to 21 August 2008) conference on e-Government and Information Ethics in South Africa. During the conference it was noted that an important indicator of Knowledge and Information Societies is the establishment of so-called e-government systems and e-governance services to motivate and include citizens in the benefits of the digital environment. The conference reiterated the declaration (contained in the 2005 WSIS Declaration and Action Plan) that governments should implement e-government systems to facilitate administrative activities and deliver services to their citizens. During the same event,

Horton (2008) pleaded for a moral infrastructure and suggested that the extent to which African morality and reality are considered as preconditions for e-government and e-governance is as important a component of e-government as physical infrastructure (data systems; legal infrastructure; institutional infrastructure; human infrastructure; technological infrastructure; leadership infrastructure). All of these are a vital part of Knowledge Management.

Then what is Knowledge Management? Knowledge Management was defined by Davenport (1994) as the process of capturing, distributing, and effectively using knowledge. A few years later, the definition by Duhon (1998) describes it as a discipline that promotes an integrated approach to identifying, capturing, evaluating, retrieving, and sharing all of an enterprise's information assets. According to Duhon (2008), these assets may include elements like databases, documents, policies, procedures, and previously un-captured expertise and experience in individual workers.

Knowledge management therefore seems to be better understood if one links the management activities to the so-called Information Lifecycle. Bester (2015) – on behalf of the African Centre of Excellence for Information Ethics at the University of Pretoria – presented the Information Life Cycle to the Western Cape Education Department's Cape Teaching and Leadership Institute on 21 February 2015. During the presentation a number of elements that should form part of the digital information life cycle, were discussed. These elements include Generating, Gathering, Using, Packaging, Further processing, Organisation, Access control, Accessibility and Sharing, Distribution, Classification, Storage, Retrieval and Destroying of information as elements of the Information Lifecycle.

It seems that policies and policy frameworks for digital operations in information and knowledge societies need to take into account the various ways of using and implementing the benefits of the digital environment. These benefits will include opportunities in each of the elements of the Information Lifecycle. The sustainability of the benefits will be optimal when linked to available best practices to curb risks, and they

will fully explore the potential growth possible for countries, regions, or cities in which the digital policies are executed.

3.5 Digitally connected communities in Southern Africa

Many communities in Africa, and specifically in Southern Africa, can be considered connected communities or communities that are in the process of becoming connected communities each with all related ethical challenges and opportunities. This chapter reflected on government role players and policy-making stakeholders as part of the digital landscape. The Southern African digital landscape is directly influenced by global tendencies, international policy guidelines and available digital infrastructure, as well as by the African continent's involvement in the global digital landscape. From this chapter it can be concluded that Southern Africa is sufficiently involved and connected to the digital infrastructure to ensure that digital citizens or cyber-citizens will need new personal skills in the digital environment.

The evidence gathered confirmed the need and readiness of the information societies in Southern Africa to be a significant role player in the global information society. The presence of the general political will, eager attempts towards establishing policy frameworks, as well as the availability of local, regional and international ICT infrastructure confirmed the motivation of the African continent to be integrated into a global knowledge society.

In this chapter it further became clear that in Southern Africa, besides technical requirements, human factors should also be observed during the process of developing knowledge societies. These human factors were described by various researchers and include various cultural elements related to people's beliefs and values that should be taken into account in the design of information policies (Engelbrecht, 2007). Already as early as in 1995, Schoof and Watson Brown indicated that policy frameworks should not be limited to the economic dimension only, but include the social and cultural dimensions as well. Füg (2008) went further and referred to the youth and their development as

human beings when identifying relevant indicators to decide if the digital content is harmful or not, and who will be responsible for censoring content. This is obviously relevant within the cultural background of each individual when they develop to become a cyber-citizen. In this process, international role players (like UNESCO), governments (at state and local level), teachers, schools and educational institutions, as well as parents and individuals all play significant roles in building sustainable information societies in Southern Africa.

Based on the multi-cultural environment in Southern Africa, it thus seems important for this study to also further attend to cultural practices and traditions. For now it seems that Information Ethics is influenced by aspects related to culture, cultural diversity, intercultural behaviour and multiculturalism. The mentioned cultural aspects could also have an impact on the acceptance and implementation efficiencies of the digital technology and related policies.

During the processes to develop policies, policy makers need to also understand the social environment in which policies should operate to guide and influence new digital-based human behaviour. To this aim, one should understand the essence of human behaviour from a cultural perspective. Furthermore, one needs to understand that culture and related human activities fall within the definition of cultural diversity in the digital environment.

The developments towards and within the digital environment obviously created various behavioural and ethical changes and challenges. These challenges seem to be based on not only the new and innovative technologies, but also on their impact on human behaviour. Human behaviour, in turn, is influenced by societies and cultures in general. Culture will always be used as a compass to guide the behaviour of communities and individuals. The changes in the behaviour of communities and individuals brought about by digitalisation will need guidance and direction. These behavioural challenges and cultural changes will be discussed in the next chapter. We will also observe what culture

is, and determine how culture and human behaviour are influenced by and interact within the changes brought about by adopting a sustainable digital environment.

3.6 Conclusion

The broad aim of this study is to develop a curriculum model to teach Information Ethics in Southern Africa. This chapter therefore aimed at understanding the elements and challenges that make up the Southern Africa digital reality, context and landscape by reflecting on the status quo of ICT infrastructure, the political will and policy frameworks needed to ensure that infrastructure is used resourcefully. A number of challenges were listed and discussed for the attention by governments to ensure a sustainable and ethical information and knowledge society.

This chapter described the Southern Africa digital landscape and found Africa and Southern Africa to be relatively well connected or at the least in the process to be become connected. This chapter listed the information ethical challenges that the region faces by being digitally connected and discussed the need for and role of governments in addressing these ethical challenges. The last part of the chapter further concluded that the ethical challenges that resulted from a lack of skills and training in the use of ICT and the need for a curriculum model to teach Information Ethics in the region with its multi-cultural environment.

CHAPTER 4 – CREATING A CULTURAL FRAMEWORK FOR HUMAN BEHAVIOUR, CULTURAL DIVERSITY AND CULTURAL CHANGE IN TEACHING INFORMATION ETHICS

4.1 Rationale of this chapter

From the previous chapters it became clear that human behaviour is to a great extent influenced by two sets of guidelines: (i) governance, policies, rules, and laws with decisions on what is right and wrong, and (ii) ethical decisions on what is good or bad. Ethical behaviour reflects on morality and human behaviour. The relation between ethics and human behaviour is therefore an essential part of this study. This chapter will also identify the possible influence of culture on mono-culture and multi-cultural societies as these possible influences will be needed in Chapter 6 for the detailed design of Information Ethics training programmes.

As an observation, it seems that in the short term, human behaviour is influenced by culture, but in the long term, culture is influenced by human behaviour. This interaction between behaviour and culture then also has an impact on cultural diversity, cultural change and normal change management processes when new technology is implemented. However, human behaviour and culture also eventually affect and are reflected in racism, radicalism, fascism and violent behaviour.

When observing cultural diversity, it seems that a number of focuses are at play.

- The first is a focus on what culture really is, which should be understood within the context of the academic definition of culture, cultural activities, role players and their actions.
- A second focus should be on the purpose and use of culture, which positions culture as a tool to arrange and order community life, monitor behaviour, safeguard people and guide people towards known best practices for their group.

- The third focus should be on a structure for culture, which leads to a better understanding of the similarities in the design and structure of cultures as well as the universal patterns of cultures.
- The fourth focus creates a better understanding of the interaction between cultures, which could lead to processes of understanding contact between cultures and, where needed, acceptable relations between cultures. This focus should also attend to acculturation, enculturation, cultural influencing, fear and anxieties between cultures, and sensitivities towards cultural diversity.

Mingling these focuses brings about more than one complicated set of variables that increase the opportunity for confusion and tension under the theme of culture and cultural diversity. According to a speech held at an IFAP conference on 5 June 2017 in Khanty-Mansiysk in the Russian Federation, the UNESCO Deputy Director-General, Mr Boyan Radoykov indicated that his organisation perceives the growth and impact of all forms of radicalism as one of the immediate global threats.

It seems that, internationally, many elements of radicalism can be linked directly to culture and culture-related traditions and beliefs. Ethnic radicalism, religious radicalism, cultural anxiety and feelings of vulnerability by groups and nations, anxieties related to cultural migration (refugees), fears of cultural 'overpowerment' or oppression, and even fears for local cultural imploding, ethnicity and the ever-present matter of racialism are all aspects that could end up as part of active (or reactive) radicalism. The mentioned elements, all contributing towards radicalism, are directly connected to the role of culture, which leads to identity, motivation and radical behaviour.

From my personal observation of the latest international refugee tendencies and noticing the response by nations, communities and some leaders (both in receiving of refugees and in causing unusual migrations), it seems that refugee management is becoming a complicated problem. It seems that some countries cause this problem by using refugees (created by dramatic political experiences in their own countries) as foreign crusaders and activists by intentionally dumping them in huge numbers as cultural threats in smaller

communities. Other countries are accepting these refugees to use them as young workers while expecting them to immediately blend into their new and culturally unknown communities. This lead to all kinds of anxieties and protectiveness that again result in cultural conflicts. Globally, this is seen by many as cultural harassments, while community tensions are observed as matters related to language, religion, economic conflicts.

Many elements of radicalism can also be linked directly to information sharing towards that purpose and within a particular cultural group. Since all these elements contribute towards ethnic, religious and cultural radicalism, it has become critical to understand culture and the influence of information sharing on good governance and peaceful societies.

From an ethical perspective, one may conclude that the concept of culture should once again be subjected to a critical analysis of the elements that motivate people towards government policies, human behaviour in general, and personal behaviour in particular. This analysis should attend to all information available for decisions about human behaviour – whether it results in radicalism, anti-radicalism or not.

Chapter 4 contributes to the central statement of this study, namely to develop a curriculum framework for the teaching of Information Ethics to various communities in Southern Africa. For this purpose, the study addresses the essence, impact and possible influences of culture, cultural diversity and multi-cultural interaction on the development of a curriculum to teach Information Ethics in Southern Africa.

4.2 Towards a hypothesis: background and guidelines

Once there was a world with many diverse cultures where people adapted in many ways to their unique living conditions and the environments they inhabited. These cultures developed differently for each of the groups, according to their environment, and there was no reason or pressure for them to convert to a single culture. As a matter of fact, such a scenario would not make sense, as each group (or culture) reflected the vastly different living environments and needs of the group. Today, many of those unique living

conditions are affected by modern technology, which makes universal behaviour in many instances much more predictable. Various information and communication technologies, as well as the internet, are good examples of such universal lifestyles that lead to the modern concept of globalisation.

The internet and ICTs became a conduit for information, systems, concepts, platforms and methods that prepared the world – even its most remote areas and peoples – to look differently at possibilities. These possibilities opened up a new way of thinking on working together and making developing opportunities more sustainable. Poor, struggling and remote societies could suddenly mature into information societies and, later, knowledge societies, and eventually the world could, on the level of information and communication, develop into a global knowledge society. The question is – has this already happened or is it happening now?

At this stage it seems as if the new information-driven and communication-driven internet platform is not a forceful seizing of people and their cultures, but rather an opportunity for them to willingly change in order to utilise new opportunities towards achieving an easier and, in some cases, a more meaningful life. This does not mean that change is any easier, and most of the time people see change as a fearful experience and a tedious process. Moreover, the enormous impact that the internet has on the lives of people eventually affects the way in which they adapt to their environments (i.e. cultures). This process, which started with new ways of communicating and managing information, now affects teaching and learning; hence we may soon see a completely new culture emerging.

Later in this chapter we investigate ways in which the internet could eventually affect people's language and vocabulary, their communication, education, legal systems, economy, philosophy, social order, security and their use of technology.

The internet and information and communication technologies in the Knowledge Society will eventually affect cultures all over the world. It cannot be suggested that rural groups with their cultures and limited vocabularies will be excluded from becoming information

societies. To argue that some cultures in their local languages do not have the vocabulary or terminology to cope as an information society does not make sense because only a few years ago no languages had those terminologies. Further to this, there were also no legal frameworks for digital operation in many countries at that time. The normal processes of acculturation are proof that one after the other, all communities and countries are struggling through the difficult process of borrowing and creating new terminology, new rules, new methodologies and new teaching curricula in the process to prepare for and adapt to the new digital world and its culture. They do this not because it is easy, but because they want to embrace the benefits of the digital world (and internet) as part of their toolkit to adapt to the new digital environment. Change is often difficult, but the sustainable benefits of change are worth far more than the struggle to adapt to what is new.

The fact that all cultures have not yet reached the same level of adaptation to the new digital world should not emphasise anything else than that cultural change is a process, not a one-time event. It might just be that all cultures have not yet been equally exposed to ICT and the benefits of the digital environment.

One can assume that the process of change will be easier, faster, and more affordable for some than for others, but eventually it seems that the digital world will converge towards standardisation in technology, terminology and methodology – and, hopefully, digital behaviour. The influence of the digital world on the technology, terminology and methodology (culture) of existing cultures will therefore be much less than the other way round. One cannot predict the future accurately, but it seems obvious that based on current experiences and policies (as discussed in Chapter 3), the general move will primarily be towards the culture (technology, terminology and methodology) of the digital world. This will again lead to standardisation of policies and legislation and eventually to unity in digital behavioural preferences, best practices and order.

In a personal e-mail (Wed 31-Aug-16 9:08 PM – coetzee@pamodzicc.co.za) Professor Dr Rafael Capurro guided the researcher in the composition of the background to this chapter with some personal remarks. These include the following:

- *If we take the example of the industrial revolution that was also global (and before that the different kinds of 'globalization': conquerors bringing/imposing their values to others: Buddhism to China, Mongolia to China and the Near East, Spain against Jews, Spain in South America etc., etc.), then we can see that a technological innovation never comes singly. This is the case with IT driven by powerful US companies (Google, Facebook etc.) imposing their values (or 'morality') to others.*
- *And there is the bigger issue about new forms of colonialism, exploiting other cultures in a more direct way as in the past. Think about Christian colonial powers, or Buddhism or...*
- *At a very superficial level, we have some kind of 'global' culture as is already the case with airplanes, cars, trains, etc. This includes some kind of technical standards for economic exchange as in the past. But this is not the issue concerning a global culture in a deeper sense which is a kind of ideal (ideology) of a unified society. This would imply a common language because if we have a plurality of languages we have a plurality of cultures. And such a plurality, as in the biosphere, is good (biodiversity is as good as cultural diversity). The idea of one language is a myth also in Christianity and in even in science.*
- *We must be careful to not give the impression (or more than the impression) that we defend cultures against new technology or, vice versa; that we believe, that using globally a technology (cars, airplanes, etc.) then we will get a global culture. We are now in the middle of a struggle concerning the change of the car culture of the 20th century into a new kind of mobility which will be different in different places, also 'inside' one country etc., depending on the needs of the people, also on their economic resources etc.*
- *Concerning IT globalization: I just come back from a conference in The Hague concerning AI/Autonomous systems/Robotics: this is also a coming 'world' 'revolution' or it is being sold as that by the industry (the classical and the IT) and by the academics and even by UNESCO that has installed now a special agency in*

order to convince the people globally (!) that they do not need to fear robots etc. In some way, we are massively relying on machines that 'think', and this is some kind of becoming like 'children', not being able to think by ourselves (vs. Kant... and Marx and... AI/Robots as opium...)

- *What kind of selves (individual and social) will arise in this century? what kind of diversity, interconnected by IT but differently as interconnected by airplanes, trains, cars ... and not any more by feet, horses... We should ask the question of power within all this, because someone is making money, exploring others etc. in the industrial revolution and today.*

These views are supported by the debate on trans-border data flow (TBDF) in the era of globalisation. From both an ethical perspective and a legal view, TBDF is crucial for developing countries. In spite of the general consensus that TBDF is vital for development, it raises some concerns such as the ethical question of infringement of individuals' right to privacy. Citizens' right to privacy has compelled countries and international organisations to regulate TBDF by means of data protection instruments. In some cases, such instruments put stringent conditions on TBDF, which could be an obstacle to the free movement of personal data across borders and may even serve as a non-tariff barrier against developing countries (Lukman, 2015).

4.3 International recognition of cultural diversity in the digital environment

It can be argued that the global discourse on information ethics acknowledges the importance of culture when it comes to the discussion of the modern information society.

For example, in 2005, the WSIS Action Line C8 on Cultural Diversity and Identity, Linguistic Diversity and Local Content states the following:

The promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development linked to SDGs: Good governance entails initiatives that promote

the role of culture in sustainable development and respect for cultural and linguistic diversity. National and local policies and strategies, including through ministries of culture and education, promote cultural and creative sectors, expression, education, dialogue and access to information and that ICTs are important tools of learning, creation and communication for capacity building, dialogue and cultural expression that contribute to sustainable development. While on-line platforms are used to build active links between people from different communities and a knowledge bank improves access to information promoting inclusive knowledge societies aiming for a pluralistic approach and sustainable development.

Platforms for communication, dialogue and diversity include community media and strengthening skills of local populations on reporting community issues, as well as exchange of experiences related to everyday life, cultural identity and practices.

Local populations and indigenous peoples have a unique understanding of the environment and context in which they live, and traditional knowledge and practice are important factors to sustainable development. ICTs support the development of local content and practice.

Following on the WSIS statement in 2005, and also related to culture and development, the UNESCO-UNDP Creative Economy Report 2013 specified the following:

Cultural and creative industries at the local level are using ICTs and are generating economic and social development. The creative economy is powerful in the local context and with small and medium-sized enterprises. It is an economic engine, providing jobs and boosting trade and the economy. At the same time, it plays a crucial social role, as a platform for identity, dialogue, social integration and an improved quality of life, thus achieving inclusive and sustainable development. Development policies should aim to invest in sustainable creative enterprise development across cultural value chain, including production and distribution infrastructure for creators and communities, and in building up local markets. Investment is also needed in local capacity-building to empower creators and cultural entrepreneurs.

Local communities are engaged in capacity-building and the development of networks to share knowledge and expand public outreach. ICTs preserve, make accessible and distribute local cultural content, help prevent knowledge loss, and help expand cultural exchange, innovation and creativity. This translates into economic opportunities in the culture sector (e.g. heritage and creative industries). Cultural goods and services are produced and disseminated through local, national and international markets.

Cultural heritage is a living part of today's societies and ICTs help to preserve it. Policies promoting the exchange of culture and knowledge between societies are essential. ICTs help ensure continued access to cultural and natural heritage via archived digital information and multimedia content in digital repositories, and support archives, cultural collections and libraries as the memory of humankind.

The promotion of local cultural content, goods and services, as well as heritage, leads to knowledge sharing, innovation and growth in cultural and creative sectors as well as sustainable tourism. Social and economic development is based on engaging communities as essential stakeholders. ICTs help preserve, affirm, and promote the diversity of cultural expressions and indigenous knowledge and traditions through the creation of varied information content and the use of different methods, including the digitization of the educational, scientific and cultural heritage.

Intercultural activities and cultural diversity are further acknowledged and addressed by the 2015 United Nations approved Sustainable Development Goals (SDGs). Goal 9 states that it acknowledges the natural and cultural diversity of the world, and recognises that all cultures and civilisations can contribute to sustainable development. Culture is both a driver and an enabler of human and sustainable development. It empowers people to take ownership of their own development, and stimulates the innovation and creativity that can drive inclusive and sustainable growth. ICTs provide a platform to promote, share and expand cultural diversity. Traditional food ways and local farming and fishing systems, all of which constitute a valuable intangible cultural heritage, can greatly contribute to food and nutrition security and sustainable agriculture. Furthermore, ICTs can be a powerful tool to ensure the transmission and the fair and equitable sharing of

local and traditional knowledge and practices, which are founded on the communities' comprehensive approach to specific rural life and environment (UN SDG Goal 9).

As recently as in 2016, the Deputy Director-General of UNESCO, Getachew Engida, mentioned in the foreword to the UNU Handbook (2016), that UNESCO recognises the transformative role played by information and knowledge across all spheres of human endeavour. According to Engida, ICTs enhance universal access to information and knowledge and thus become an important facilitator towards intercultural dialogue and peace. This transformative role played by information and knowledge across all spheres of human endeavour directly touches on all aspects of culture.

4.4 Cultural diversity and knowledge societies

What is then the reason for the importance of cultural diversity in building information and knowledge societies? Three main questions need to be answered: (i) Do we need to have a universal Information Society culture? (ii) Should we assist all existing cultures to develop new cultural elements, or should we change existing cultural elements to fit into the new Information Society culture? (iii) Should we adopt an approach where different concepts have different meanings and then try to work around the confusion (as was done in the biblical story of Babel)?

In comments on and responses to his recently published *Festschrift* (<http://www.capurro.de/thanksandresponses.html>, September 2016), Professor Rafael Capurro guides us towards answering some of the questions and challenges related to cultures within the information and knowledge societies.

Professor Capurro commented very pragmatically on the contribution by Soraj Hongladarom on Intercultural Information Ethics: A Pragmatic Consideration, which deals with the changing of cultures, intercultural information ethics and privacy. He observed:

Intercultural Information Ethics (IIE) is a mark I created in 2004 at the ICIE symposium "Localizing the Internet. Ethical Issues in Intercultural Perspective" in

order not to forget that we live in a world shared not only by a plurality of individual human beings but also by a plurality of social identities or cultures changing over time. Although the reflection on cultural issues of ICT goes back to the CATaC (Cultural Attitudes Towards Technology and Communication) conferences organized by Charles Ess et al. since 1998. You were probably the first scholar who wrote on ethical issues of ICT from a Buddhist perspective.

Raising the question of cultural diversity with regard to ethical values and principles is problematic if it is understood as opposed to universal ethical values and principles codified, for instance, in the Universal Declaration of Human Rights. Looking back into history one can even discover that some of these values and principles are the common heritage of humanity beyond cultural differences. You write that "[...] as the internet, both the original internet and the Internet of Things (IoT), spreads across the globe, a concern arises over the clash between the values originally embedded in the internet itself and those of the various cultures wherein it is introduced. Even within the culture where the internet originated we can find conflicts between varying sets of values." This means that although we can agree on the universality of some values, this agreement does not preclude their potential conflict in different situations nor that such values and principles can have different kinds of foundations.

Taking the example of privacy, you write: "The European emphasis on data protection and privacy, then, was understandable in light of the overall outlook of European culture that put less emphasis on individualism than did America from where the Internet originated." This is an inner conflict between two Western cultures, in case one wants to simplify the matter about one "American" and one "European" culture. "This shows," as you rightly state, "that the Internet, as with other forms of technologies, can lend itself to the cultural environment it finds itself in." It follows that instead of starting an ethical reflection with a universal a priori of whatever content – Kant was in favour of the formal criterion of universalisability – we can deal, as you do, with the factual situation of having different opinions and values, for instance about the role of the Internet, which shows "that culture does

indeed play a role, and it is to our benefit to look closely at this interplay towards an understanding of the philosophical insights one can obtain through reflecting on it."

Your arguments and particularly your "pragmatic consideration" of the question of privacy from a Buddhist perspective is one of the most illuminating arguments I have ever read concerning the importance of taking seriously cultural differences when it comes to looking for the ground(s) as well as for different ways of understanding ethical values and principles. What an amazing insight for me, a "Westerner," to find in compassion the Buddhist foundation for the right to privacy! The plausibility of universal ideas and ideals depends on how seriously we take the task of carefully and deeply analysing cultural differences and bringing them into a conversation. Striving towards universality through particularity is the royal road ("Königsweg") of Enlightenment.

Thank you for your friendship, your wisdom, and for the time we spent together in different parts of the world, particularly in Bangkok. We both found in Professor Makoto Nakada (University of Tsukuba, Japan) a friend and colleague with whom I have been working with for ten years.

In the same publication (<http://www.capurro.de/thanksandresponses.html> in September 2016), Professor Capurro shared his views on the chapter *Gramsci, Golem, Google: a Marxist Dialog with Rafael Capurro's Intercultural Information Ethics* by Marco Schneider. In response to Schneider's views, he wrote on the concept of culture, interaction between cultures, as well as universal values and particular morals:

*When you invited me to write an introduction to your book *A Dialectics of Taste: Information, Music, and Politics (A Dialética do Gosto: Informação, música e política, Rio de Janeiro 2015. See: www.capurro.de/schneider.html)*. I was aware of the fascinating conversation we were starting. We have in common not only South America as cultural background but also the transformation of labor and capitalism in the digital era as a philosophical challenge. Your book helped me to think anew intercultural issues of information ethics from a Marxian perspective looking at the*

points of conflict between culture and the productive forces set free by digital capitalism. The new interactive and inclusive communication structure of the Internet began as a huge promise for new forms of work, societal and cultural development. Your analysis of the relation between information, music, and politics is based on an interpretation of the Marxian (originally Aristotelian) concepts of use value (Gebrauchswert) as taste (gusto) and of exchange value (Tauschwert) based on different forms of commodification of cultural products. This allows a critique of new forms of social and cultural exploitation and manipulation in the digital age.

You write: "The fact that, for the first time in human history, a wide variety of societies and cultures are living in a concrete, common and synchronic history poses new challenges to any claim of universality in our interconnected, interdependent world." This is a new situation in human history that "would not be possible without the current stage of development of digital technologies of information." The concept of Intercultural Information Ethics and, as you suggest, of Dialectical Intercultural Information Ethics are possible answers to this historical challenge. It is "the theme of our time" (El tema de nuestro tiempo, 1923) as José Ortega y Gasset (1883-1955) would say. It was his first philosophical book where he develops the concept of "vital reason" (razón vital) criticising the onesidedness of the concept of reason in rationalism and the blindness of total relativism and mono-perspectivism. Indeed, "we must be able to articulate hard philosophical reflection with precise empirical studies and actions (in Marxian terminology, this articulation is called praxis)."

Your approach "considers the contradictions between the universal (symbolic) and the particular (the imaginary) in light of the traditional contradiction between universal values and particular morals. Second, we should consider the contradictions between singular concrete-living-individuals, groups or corporations and entire societies. Among these "groups," social classes deserve a special attention." And you follow Marx when you write that "the reduction of human subjects to objects, resulting from the universal exploitation of labor, in all its particular and singular forms, is ethically unsustainable. The corollary of this

exploitation is violence, irrationality, the abortion of the individual's creative potentialities for self-development, for solidarity and well-being. This reduction can (or should) be concretely surpassed." This is, indeed, the heart of Marxian ethics that you now extend to our historical situation in the digital age.

Concerning the concept of culture, you "highlight the fact that the idea of culture as a monolithic, homogeneous, stable unity does not correspond to anything in reality. Each human group is characterised by divisions of gender, generation and labor, the latter supposedly resulting from the former, as well as from other factors such as wars and conquests (violence). Such divisions necessarily place each subgroup in a different perspective with regard to the unifying culture. Each of these perspectives frames the subgroup's particular (imaginary) universal (symbolic) horizon." From this perspective you criticize culture in a negative sense or culture as ideology, i.e., "as a set of hierarchic frames of worldviews and social life representations, explanations, opinions, values, sympathies and rejections (tastes), senses of reality and the like, that justify and legitimate class exploitation through religion, philosophy, the economic and social sciences, cinema, TV, journalism, Facebook, common sense." You ask: "What does the above supposition imply?" Your answer is: "The most desirable goal is a transcultural ethics, that is to say in dialectical logical terms, the concrete and dynamic universality of the unity of the diverse. To translate this into ethical terms, it represents the theoretical and practical conciliation between universal and particular ethical values, from where singular ethical actions would have more favourable conditions to take place."

Thank you for bringing me to Gramsci, Golem and Google! An intercultural information flow is needed in order to bridge the informational and not only the digital divide. It is an honour for me to be mentioned in the same breath with Gramsci. Thank you for your friendship.

4.5 How are these matters relevant to the African continent and Southern Africa in particular?

Africa is culturally diverse with more than 3000 tribes, and more than 2100 languages. In addition to these social structures, Christianity, Islam, and Hinduism are some of the main religions practised, while many of the people practise traditional African religions (https://en.wikipedia.org/wiki/List_of_ethnic_groups_of_Africa). These observations are not presented as a conclusive cultural estimation, but rather as an indication of the enormity of variations and cultural options that are addressed in this chapter. Due to its focus, Chapter 4 is more concerned with reaching a conclusion that there are many cultures in Africa and that the concept of intercultural influences will have to be determined on a platform other than a direct analysis and comparison of one culture with another. Earlier in the chapter, various ideas were shared to determine the state of cultural diversity and the readiness of all the cultures to accommodate the changes that are needed for existing groups to join the Knowledge Society within a conservative cultural opinion.

To manage change in human behaviour is, however, not easy. Given the assumption that survival is a basic instinct of human life, there is always a need for the continued development of the individual within his/her community towards the sustainable interaction of individuals and groups with their environment. Fundamental to such development is the human capability to adjust to changing circumstances. This adjustment occurs at two levels, namely the development of the individual human being, and the development of the community or society as a whole (Bester et al., 2007).

In accommodating technological development (ICT towards a digital environment), an individual grows physically, spiritually, intellectually and socially within the context of his/her relationships with other humans. This growth, change or transformation influences the cultural, demographic and socio-economic context of communities within the context of the larger society and the environment. Community transformation and development involves the motivation of local communities to improve their own conditions in existing

systems, under the guidance of their own leaders, according to their own needs, within their own capabilities, in accordance with their own plans, and with support from inside or outside groups (Coertze et al., 1996). Put differently, it seems that cultural transformation is essentially a process of reconstruction – the shaping or reshaping of circumstances, individuals and groups.

During his keynote address at the African Information Ethics Conference Pretoria (South Africa), 5 to 7 February 2007, Professor Rafael Capurro discussed the international guidelines that refer to various cultural elements as articulated at the World Summit on the Information Society (WSIS) and subsequently again in the Geneva Declaration. Referring to the Geneva Declaration of Principles and its inclusion in the Tunis Agenda for the Information Society, he recalled specific articles of the statement of the Geneva Declaration related to the Ethical dimensions of the Information Society (Capurro, 2008):

“56. The Information Society should respect peace and uphold the fundamental values of freedom, equality, solidarity, tolerance, shared responsibility, and respect for nature.

57. We acknowledge the importance of ethics for the Information Society, which should foster justice, and the dignity and worth of the human person. The widest possible protection should be accorded to the family and to enable it to play its crucial role in society.

58. The use of ICTs and content creation should respect human rights and fundamental freedoms of others, including personal privacy, and the right to freedom of thought, conscience, and religion in conformity with relevant international instruments.

59. All actors in the Information Society should take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs, such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings.” (Geneva Declaration of Principles, 2003)

In this regard, WSIS in 2005 declared their desire and commitment to build a people-centred, inclusive and development-oriented information society, premised on the

purposes and principles of the Charter of the United Nations, international law and multilateralism, and respecting fully and upholding the Universal Declaration of Human Rights, so that people everywhere can “create, access, utilize and share information and knowledge, to reach their full potential and to achieve the internationally agreed Millennium Development Goals” (Tunis Commitment, 18.11.2005).

The importance of inclusion of the African continent in the digital world was confirmed in 2015 by the Sustainable Development Goals (SDGs) that were formulated by the United Nations in September 2015. These SDGs (as listed in Chapter 3) were developed from the Millennium Development Goals that had been formulated during the millennium change 15 years earlier (ITU, 2015).

4.6 Balanced interaction between current cultures and new behaviour in information societies

Towards the side of caution, one should note that in developing communities in Africa unbalanced priorities might become a challenge when one set of policy guidelines becomes more important than others. This alarm was already sounded by Goodwin and Spittle in their article that reflects on a discourse and policies of the European Union and the information society (Goodwin et al., 2002). Reflecting on an analysis of the debate on the social, cultural and economic impact of information society within the European Union, they criticised the language policies used in the EU in respect of the information society, and argued that the nature of language should change and be used as a mode of social action within the policy debate. Their argument concluded, inter alia, that discourses in the European Union favoured the economic dimension at the expense of social and cultural dimensions (Goodwin et al., 2002).

In seeking basic agreement on elements for a culture typifying a knowledge society, indications are that international role players directly and indirectly agree that the African continent should be prepared and positioned to participate in discussions relevant to

cultural diversity and its impact on teaching Information Ethics. The question, however, is what do the terms 'culture' and 'cultural diversity' mean?

4.6.1 Cultural patterns in the digital world

In bringing all the afore-mentioned concepts together, one should again state that technology is not culture, as economy is also not culture as such, but only an element of culture. Technology and economy are parts or elements of a culture, and technology is used by people (for the purpose of this study, digital citizens) to better their lives and to adapt more easily to their digitally developing environments. New technology will therefore become part of a cultural system when its use and benefits are perceived by individuals and communities as beneficial to the quality of their lives and their efforts to adapt to their possible new needs and environment (Bester et al., 2007).

Towards identifying culture and the structure of culture, different elements, facets or parts of culture must be recognised, as well as the ways in which they interlink. Understanding the description of the elements is a beginning of the process of managing information in developing communities. It is also used, in the context of this chapter, as a prelude to the preparation of guidelines on appropriate behaviour (cultural guidelines) for digital citizens with regard to the intercultural position, changes, tensions and opportunities that will inevitably accompany the use of digital technology in the information and knowledge societies (Bester et al., 2007).

When observing cultural and human behaviour in Southern Africa, one can conclude that culture in the digital environment should reflect some patterns that are important in understanding culture. These patterns include people and their activities, as well as their related perceptions, actions and motivations in the digital environment. Further to the basic patterns already mentioned, activities that connect people of the same culture, i.e. their habits and traditions, should be added to the list. Culturally spoken, it is then important to know how people decide what they have in common and why, and how this commonality is influenced and extended to include other individuals and groups – also as

cyber citizens in the digital world. Later in this chapter, more attention is paid to the relationship between cultural elements and basic human needs. The management of

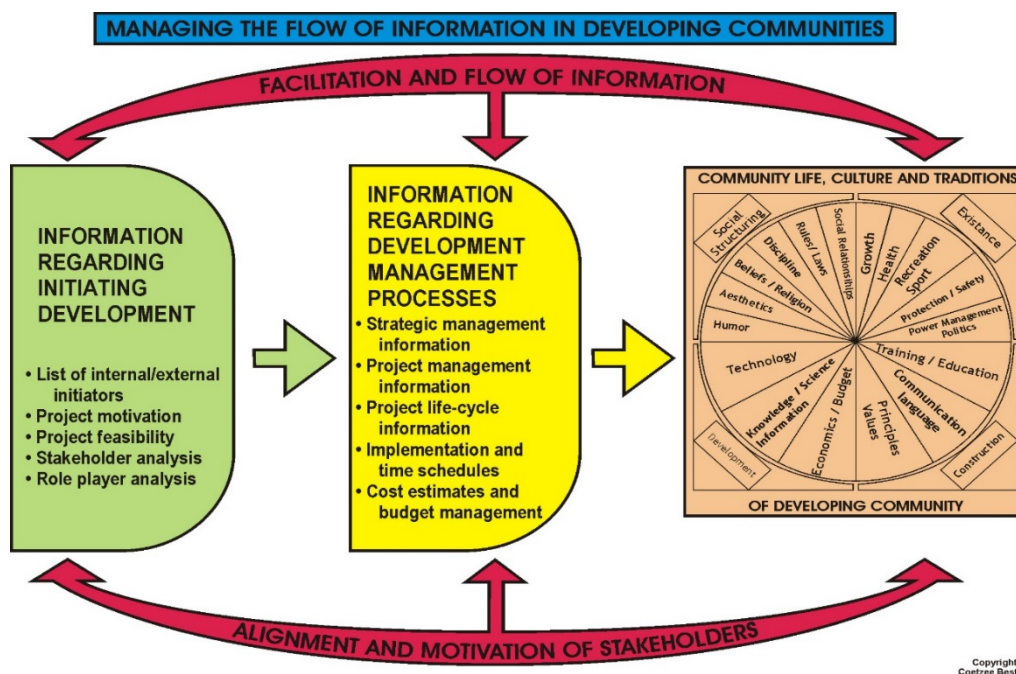


Figure 8: The relation between information management and the structure of cultures

transformation towards a framework of acceptable behaviour in the digital environment (digital culture) seems possible only if there is a genuine understanding the elements of culture, the relationship between these elements and the relationship between cultures. Figure 8 describes the basic elements of the relation between information management, human behaviour and the structure of culture (Bester et al., 2007). For the purpose of this study the mentioned graph is used as a platform for the construction of guidelines on how to understand the position of the developing digital citizen within his/her culture towards a digital culture.

Although Figure 8 was compiled by Bester (2007) as part of a study to illustrate the flow of information in developing communities, his proposed diagram includes important elements for understanding and accommodating the culture of the developing community and individual towards an information society culture. The third section refers to the afore-

mentioned elements of community life, culture and traditions. To achieve the objectives of this chapter, his contribution could be extended to include cultural activities and cultural role players within communities.

In developing a knowledge society or even guiding individuals towards such a society, it is important to understand the complete cultural framework and functioning. Using Figure 8 as a basis, one could extend the existing understanding of culture to guide role players (digital citizens) and communities in the process of developing a new digital culture.

Figure 9 presents an illustrated reflection of the structure, activities and role players that can be used to explain the concept of culture.



Figure 9: Cultural structure, activities and role players

One of the purposes of the discussion on culture is to position 'culture' as a practical concept to be understood by all. It is important to remember that "culture is not merely an expression that encapsulates a few memory-filled sentiments from way back when, nor should it be understood as a set of traditions that whips up olden-time emotions" (Coertze, 1996, Bester, 2007). Rather, it should be understood that culture is real and that it evolves in a universal framework and structure. Although the content of the elements of culture

might differ in detail according to environmental adaptations by different groups, the structure of culture demonstrates a pattern that is universal to all cultures (Coertze, 1996, Bester, 2007). In situations of intercultural contact or cultural diversity, it is important to remember that all cultures are equal in serving their people to successfully adapt to the environment – at that particular time. One culture might be better developed for a specific set of environmental elements, but without necessarily being a higher- or lower-level culture. In situations that require cultural transformation or change, people will learn and borrow from each other if the ‘new’ environment is the same. Later in this chapter, the concept of acculturation as well as the structure and pattern mentioned earlier are investigated and set out in a diagram.

As a personal observation during events where representatives of different cultures interacted at a very basic level (as was the case in South African politics for many years), it is often informally observed that it is vital for the structure and rules of cultures to be understood and observed. If an understanding of the universal structure of a particular culture is not respected, the status and possible dominance of one culture over another might become more important than the behaviour based on the culture itself. The remark (or threat) that ‘in my culture...’ this or that is allowed or acceptable is often heard, with a possible dubious intent. Often, one of the following objectives might surface: (i) wilfulness, that will present cultural differences as a cover for misconduct and even troublesomeness; (ii) justification for different views and interpretations in arguments; (iii) attempts by one culture to overpower or dominate another; or (iv) a real concern and desire to better understand the behaviour motivated by cultural differences.

One should also take note of the complicated picture of intercultural influences in Information Ethics, which become evident when the cumulative variants are considered, bearing in mind the existence of various cultures as well as various cultural elements within each culture. However, at some point, all the role players and stakeholders have to agree on a new set of rules to make a new working environment practical and sustainable. Maybe this is already happening? Rules and guidelines for practice and behaviour do exist. Adaptation to new environments and sustainability should focus on

the beneficial opportunities of new technology or methodology, rather than on the historic traditions and cultures of groups that wish to be included in the new beneficial environment.

Changes in culture, and related changes in behaviour, will be imminent when new technology is embraced as a way of enlightening the lives of people or of developing their living environment. These cultural changes could take place by way of mainly two routes: (i) through acculturation, i.e. by adapting from the 'outside world' the new technology with its benefits, risks and rules, or (ii) by enculturation, i.e. by learning from members of the cultural group exposed to the new technology within a new living environment, e.g. urbanisation and/or working milieus where peer feedback is possible.

Building on the diagram explained in Figure 9, Figure 10 indicates a relation between cultural aspects and role players, as well as some practical activities linked to each. Figures 11 to 13 are based on the four quadrants described by Bester (2007) as activities to ensure the *Existence* of a cultural group (Figure 10 - Q1), the *Construction* of the cultural group (Figure 11 - Q2), the *Development* of the cultural group (Figure 12 - Q3) and the *Social Order* of members of the cultural group (Figure 13 - Q4). Figures 10 to 13 extend Bester's (2007) initial understanding of culture to include community role players and functionaries who will have to be part of transforming communities into fully operational information societies.

As indicated earlier in this chapter, social scientists like Maslow (1970), Burton (1990) and Max-Neeff (1991) argued that basic human needs constitute the core of what makes us human and, when these are not fulfilled, conflict will follow. According to Maslow, the satisfaction of needs is a hierarchical process, i.e. the most fundamental need has to be satisfied before the next need can be fulfilled. By satisfying our needs, we could eventually attain self-actualisation. According to Maslow, basic human needs are ontological, and people have no choice in this regard. They cannot help but strive to have basic human needs fulfilled, simply because they are human (Maslow, 1970).

Burton (1990) agreed with Maslow that humans have basic human needs that must be fulfilled, but rejects the notion of a needs hierarchy. In his opinion, any basic human need that is compromised for any duration of time would lead to people coming into conflict with others whom they regard as hindering the fulfilment of these needs (Burton, 1990). The reasons for such conflicts, according to Max-Neeff (1991), might be because our needs influence our perceptions and motivate our actions. Burton (1990) and Azar (1990) argue, however, that basic human values such as religion and ideology, as well as interests such as scarce resources, when compromised, could also result in serious conflict.

From Figure 9 it becomes clear that culture as a concept refers to the multifaceted, adaptive and patterned ways of life created by humankind in a process of human adaptation to a complex environment and in accordance with the complex human nature (Coertze, 1968). Culture is multi-dimensional, and it comprises interrelated aspects or systems that include the economy, health services, knowledge, art, the military system, education, judicial system, religion, social organisation, games and recreation, political organisation, language, technology and a specific value system (Coertze & Coertze, 1996). Culture also includes the information, attitudes, ideas, beliefs, rules, values, perceptions, and standards that affect people's ways of thinking (Peoples & Baily, 2000). The dependence of a culture on the maintenance and application of traditional values and customs for survival and growth may be described as traditionalism.

It thus follows that community/societal life is also a multidimensional phenomenon: it could include one or more multifaceted cultures, depending on its social composition, the interactive dynamics of human characteristics, and the utilisation of environmental potential by the community to sustain itself and to adapt to continuously changing conditions of existence. The dimensions of community life and its existence are specific to the kind of community in question and its characteristic way of life. It also includes the way it responds to and manages cultural change and development – through the transfer of culture and the application of knowledge in community development by means of dynamic interaction with a specific set of environmental conditions.

According to Peoples and Baily (2000), culture is essential for the psychological and social development and patterns of behaviour of individuals within a group. The culture into which a human is born and educated acts as the source of information or knowledge that is needed to survive in the natural environment and to participate in the life of the particular group (Peoples & Baily, 2000:24). The specific culture of an ethnic group or a separate people is, therefore, the unique and patterned way of life of that group, based either on its traditions or on its innovative cultural adaptation to environmental conditions, with each individual member of that group making his/her own cultural contributions to the group (Coertze, 1968; 1973).

4.6.1.1 Human needs for existence and growth

Figure 10 (Quadrant 1) indicates cultural activities and role players that are involved in addressing the basic human needs for existence. These activities include growth, health, safety and protection, ways of relaxation, as well as political power.

Coertze (1996) mentioned that the first and most basic characteristic of human life (culture) is the capability to exist or, put differently, the effective survival and subsequent growth of humans and societies. Existence implies survival within a natural, unseen or supernatural environment, because human beings are equipped with the ability to operate at more than one level simultaneously – physically, spiritually, intellectually and socially. Humans can establish relations or communities that not only support them in their efforts to survive, but that could also enable them to grow through the application of values, principles, knowledge and rules (Coertze, 1996).

In preparing people for possible cultural changes and potential new behaviour (which implies a departure from their current cultural or behavioural environment), one should understand the basic structure of culture that influences behaviour. Indications are that, while Bester's 2007 model had as purpose the facilitation of a better understanding of how to interact with and facilitate new and/or different cultures, it could be extended to

address not only the significance of the cultural environment for the developing digital citizen, but also to explain the position of a person's current culture within a new or developing digital culture.

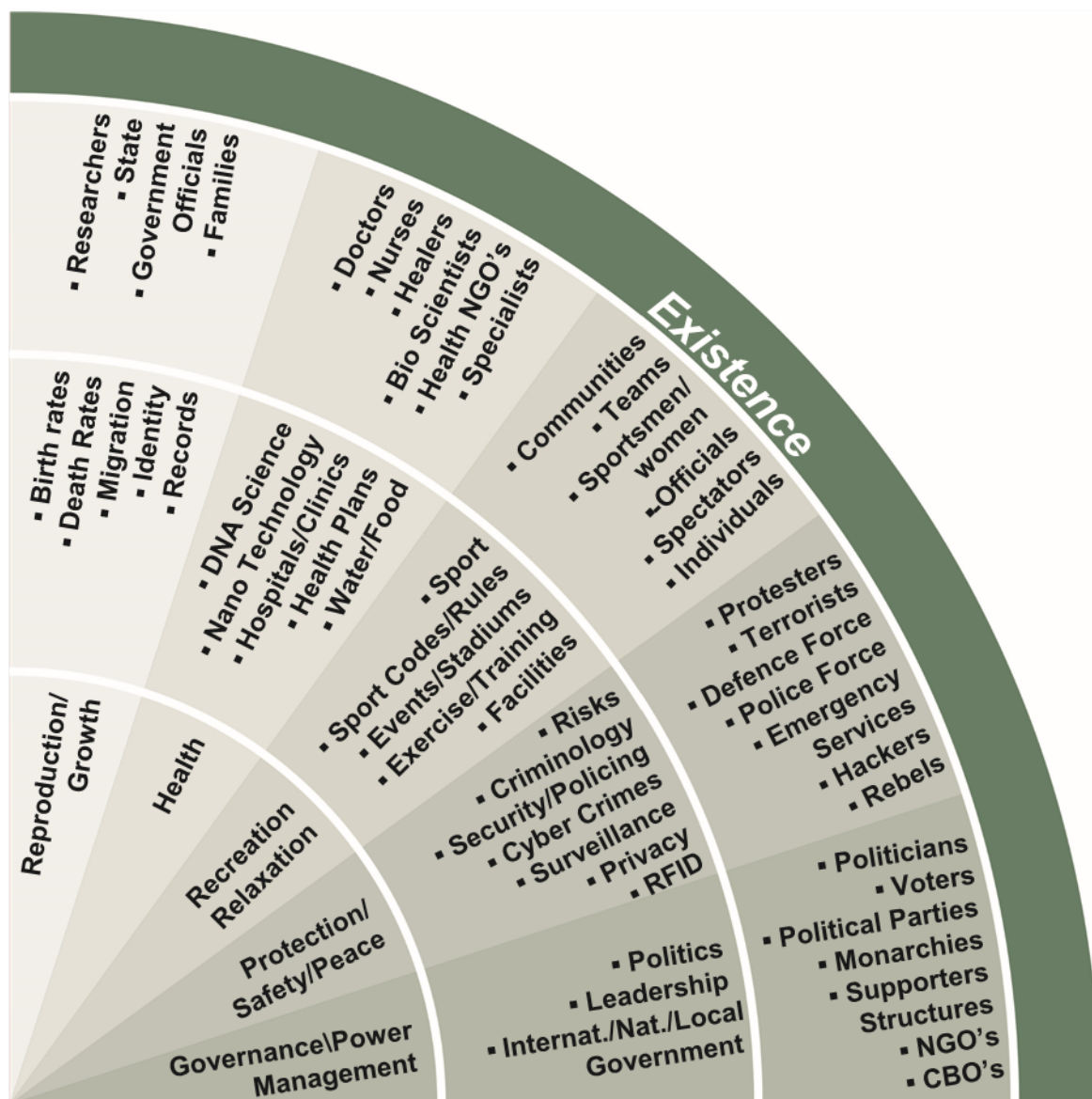


Figure 10: Culture Quadrant 1

4.6.1.2 *Health systems and forms of relaxation*

Crucial to survival and/or human existence is the notion of health, that is, limitation of illness, disease or injury and to be well in body and mind. A person could be healthy even though he/she is physically disabled, and a person could be unhealthy or ill even though he/she is able-bodied (Anyiam-Osigwe et al., 2002).

The health of humankind and its environment is maintained largely through health systems. According to Coertze and Coertze (1996), a health system, health service system or ethno-medicine is an aspect of culture that focuses on the maintenance of physical and spiritual health, the application of actions or methods, and material resources for the achievement and maintenance of health and the treatment of disorders and diseases. Regardless of the existence of scientifically based health systems and procedures, perceptions of health and its maintenance are often culturally based and in conflict with what is regarded as scientifically sound. Social development therefore often includes changes in the attitudes towards or systems used for health management.

Related to the maintenance of good health is the need for sport and recreation, which are necessary for the maintenance of the self and the community (Max-Neeff, 1991). Play, sport and recreation, including cultural activities that involve the intellectual, physical, spiritual and social characteristics of human beings, are highly valued elements of community life. Coertze and Coertze (1996) suggest that play and recreation not only differ from culture to culture, but are related to other aspects of culture such as cultural activities, religion and art, and the idealistic fantasies of children (Coertze, 1980). In numerous cultures, play-acting and educational games are powerful methods of teaching and exercising the various activities of learning and qualities and capabilities such as values and life skills.

4.6.1.3 *Methods of protection and security*

Protection and safety are fundamental to human survival and existence in any environment. Effective human and community development requires effective protection and safety measures. Protection and methods to achieve safety include cultural actions,

regulation of social behaviour and government-instituted measures to protect members of the society against threatening natural and supernatural elements, crime, military threats and dangerous human behaviour in general. In some cultures, even supernatural beings – such as ancestors or guardian spirits that are associated with specific humans – are regarded as protective entities (Coertze & Coertze, 1996).

Political organisation and control of the people by authorities and organisations are therefore fundamental parts of a structured society: the existence of political and other management structures are typical of social organisations and should be considered in community development programmes. Such structures are typically hierarchical in nature, as they consist of a central government and local authorities that act according to relevant legislation and regulations, order and administration. Political governance is closely interwoven with the numerical strength of a people and with other aspects of culture, including forms and methods of production, kinds of social structures such as foragers, herders and agriculturalists, and legal systems (Coertze, 1973a).

Developing countries often use a mix of governance structures, such as gerontocracy (governance by elders or wise old men); democracy (representative leadership, or governance by leadership that is elected by a public electorate according to a statutory-determined election process); monarchy (governance by a single person of royal blood); oligarchy (governance by only a few people); and plutocracy (governance on the highest level of state by a class of wealthy people) (Coertze & Coertze, 1996).

Observing the security framework in cultural transformation will eventually address a number of new risks in the digital environment. These risks include cyber-crimes, cyber-surveillance, cyber-intelligence, cyber-attacks and cyber-warfare.

4.6.2 Human needs for the construction of unity

Figure 11(Quadrant 2) indicates cultural activities in the *Construction* quadrant. These activities reflect actions that will educate and train cultural participants in the language, behaviour, morals and values of a community.



Figure 11: Culture Quadrant 2

4.6.2.1 **Construction and transfer of social commitments, culture and values**

Culture (traditions, customs and behaviour) is central to the way things are done in any particular society or community. This should also be the case in any Information Society. In this regard Taylor, Risvi, Lingard and Henry (1997), indicated that the processes of transfer of knowledge and thus the construction of the new member of society was based on the assumption that a society consists of interest groups and stakeholders who share

the same behaviour and values. These accepted traditions, customs and behaviour are constantly transferred from one generation to the other and from one individual to another by informal and formal training and education.

It seems that in many cases this traditional 'sharing/consensus view' of society may be strongly influenced by an approach that prioritises the 'maximum benefiting of the masses' among modern cyber citizens. In practice, this means that while the cultural leaders are considering the risks and opportunities of certain changes, the young people are challenging educational systems and even toppling democratic governments with the forces of social media and the like.

Influencing and changing cultures and the behaviour of communities may often require a pragmatic change in community culture and associated values. Towards understanding Robbins (1997), one should highlight the difficulty of changing the culture primarily because of the weight of embedded values. He argues that, if the culture is to be changed, the focus should be on changing the behaviour of individuals and groups within the community, rather than on trying to change the culture of the community as a whole. This, Robbins (1997) argues, requires a range of interventions, all contributing to the establishment of desired values in individuals and groups throughout the community. The use of new symbols, new stories, new habits and behaviour, all contribute towards growing the desired culture of the community (Robbins, 1997). To this list one could add new terminology, new meanings of existing language, as well as new rules and guidelines, and even new knowledge. Towards the central statement of this study the suggested interventions and training aims towards a best practice methodology in teaching Information Ethics in Southern Africa.

Robbins (1997) and Taylor et al. (1997) support Davidoff (1997) in emphasising the importance of culture and the underpinning values of any culture that should be clear, communicated to, and visibly lived by all stakeholders in spite of initial differences among them. Towards this aim, Davidoff (1997) warns against an atomistic view of the elements of culture. According to him all the cultural elements are interrelated and interdependent

and, while it is possible to describe them separately, they actually function in an integrated way. One malfunctioning element (like fake news on the social media) will affect the functioning of the entire community, and likewise, a well-functioning element will have a positive impact on all other elements.

4.6.2.2 *Education and training*

In any transformation and change, education and training (as planned interventions) are important aspects of community development. Education and training could take place informally or formally, in and out of institutions, and are typically influenced by the existing culture (Coertze & Coertze, 1996). Essential to education is the development of the character and personality of an individual and a desire to prepare the youth for adult life (Coertze & Coertze, 1996; Anyiam-Osigwe et al., 2002). This could either happen through the informal transfer of knowledge, skills and values from one person or generation to another in the course of daily living, or it could be the result of a formal intervention aimed at the achievement of agreed outcomes. Education programmes, formal or informal, are most likely to succeed if they include both traditional/indigenous and new/foreign knowledge (the first type of knowledge to ensure the survival of cultural values and ways of living, and the second type to help communities cope with changing conditions) (Bester, 2007).

4.6.2.3 *Behaviour and morality*

Values could be defined as the moral principles or accepted standards of a person or group; the standards or principles by which people live their lives; what is considered to be good, desirable and proper; what people find important and valuable in life; and what is perceived as morally right or wrong (Anyiam-Osigwe et al., 2002:156).

Core values, those that hold communities together, constitute the basis of everything a person believes and, as such, contributes to the identity of a person or group (Anyiam-Osigwe et al., 2002). Very often, these values are structured in the form of a religion and associated with particular religious rituals and/or ceremonies. Also relevant later in this chapter (under Q4 Social structure) are religious convictions that include a belief in

supernatural powers and entities that have the capability to influence life on earth and the spirituality of humankind, as well as religious procedures that are aimed at the achievement and maintenance of a harmonious relationship between humans and supernatural powers or entities (Coertze & Coertze, 1996).

4.6.2.4 *Language, terminology and communication*

Bester (2007) points out that different groups use different languages to express their thoughts, feelings, attitudes and ways of being, and emphasises that communication is important to the building and maintenance of relationships between individuals and groups (Anyiam-Osigwe et al., 2002). Thus, one needs to be sensitive to the language and communication protocols of the communities where change or development is envisaged. In this regard, it is especially important to be cognisant of the use of proverbs which, especially in developing countries, are vehicles for the expression of cultural wisdoms and values, metaphorical speech, alliteration and rhyme, and are transferred verbally from one generation to the next (Coertze & Coertze, 1996). In communities where new technology is introduced, it is important that new technology be explained, named and conceptualised in language that is understandable to the new users (Bester, 2007).

4.6.3 Human needs for development

Figure 12 (Quadrant 3) indicates the cultural activities that guide and motivate development in communities. These activities include knowledge and science, economic growth, as well as technological discoveries.

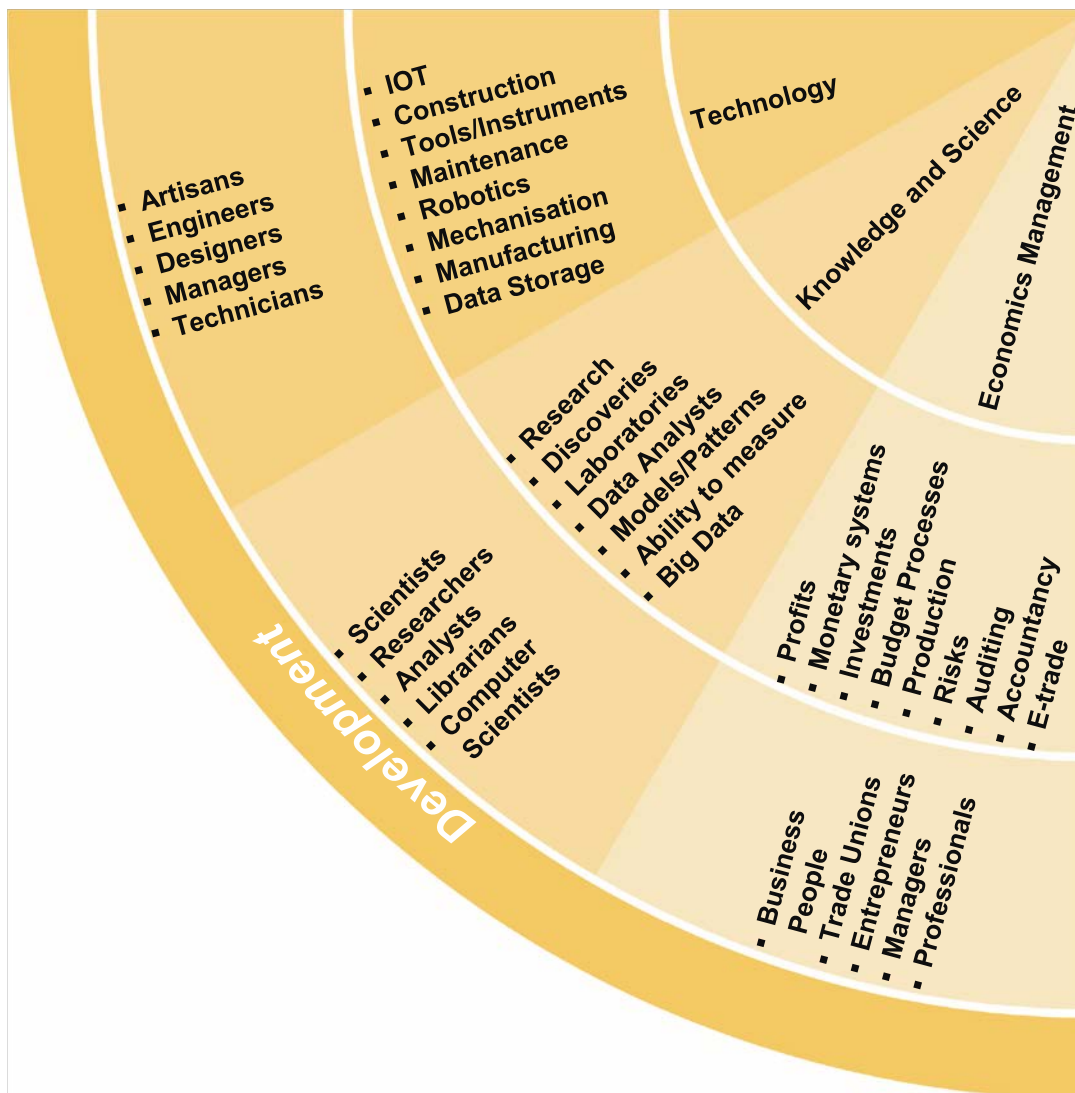


Figure 12: Culture Quadrant 3

4.6.3.1 *Development, economic systems and commercial activities*

Economics could be defined as the complex activities concerned with the production, distribution and consumption of goods and services. Business and economic activities in a country refer to the wealth and resources of a community or country, with a special emphasis on the production and use of goods and services (Anyiam-Osigwe et al., 2002). These activities are related to other aspects of culture, including the political system,

social life and religion (Potgieter, 1973). Examples of different kinds of economic systems are foraging, subsistence farming and herding, and commercial farming.

Culturally, an economic system is an element of human behaviour that include the acquisition of valuable items and the use of material resources through activities that include collection, hunting, cultivation, breeding, bartering, trade and manufacturing; the processing of resources, including consumer goods and prestige commodities; their storage, and their allocation and distribution to members of the society in an organised way (Coertze & Coertze, 1996; Potgieter, 1973).

In information and knowledge societies changes are recurrent and normal, while in a traditional society, where slow-moving subsistence economies are the norm, cultural changes are not that necessary and frequent (Potgieter, 1973). In observing human development, cultural adaptations were necessary during each of the acknowledged human development periods, which included foraging, domestication, farming and industrialisation.

Each of the above periods was known for its specific cultural activities, traditions and customs. Today we know that each period also required human activities (culture), including language and terminology, infrastructure and technology, as well as the ability to store and protect items of value during each period. Typical periods include:

- *Foraging* – hunter-gatherers get their food from collecting wild plants and hunting or fishing for wild animals in their environments. Foragers do not attempt to increase the resources in their environments by agriculture or breeding of livestock; rather, they migrate to those areas where game and edible wild plants are available during a given season (Peoples & Baily, 2000:87-91).
- *Domestication* – the intentional planting and cultivation of selected plants, the breeding of certain species of animals for food and raw materials, and the keeping of animals to perform work (Peoples & Baily, 2000:91-92). Pastoralists or herders acquire much of their food and raw materials by raising domesticated animals and

subsisting on the products of the animals. Their herds graze on natural forage and therefore must be moved to where the forage naturally occurs. Consequently, pastoralists tend to be seasonally nomadic peoples (Peoples & Baily, 2000:100-103).

- *Farming* – In the farming (horticulture) system, activities such as shifting cultivation (or slashing, burning and dry land gardening) take place. People use their physical energy and hand tools to clear land, prepare the soil, plant and harvest the crops, while settling in permanent villages where they practise a sedentary lifestyle. In intensive agriculture, fields are farmed more frequently and intensively with the use of substantial fertilisation, crop rotation, ploughing with draft animals and irrigation to produce higher yields and surplus production. These do not only support specialised workers, but also contribute to the development of infrastructure, government services and trade (Peoples & Baily, 2000:92-99).
- *Industrialisation* – In communities that developed towards *industrialism*, the organisation of society is characterised by a large-scale mechanised manufacturing industry (Collins, 2002). Allied to this is commercialism – the spirit, principles or procedures of commerce emphasise profit making (Collins, 2002). In modern commercialism, the market principle increasingly integrates the economies of countries across the world into a global economy – one in which raw materials, manufactured goods, infrastructure, information, communication, investment and services play an increasing and integrated role.

It is obvious that today all of these features or elements are also present in the latest human development period, which is called the Information Age. Some of the customs and traditions from previous periods, for example festivities in the agricultural communities around planting and harvest time, are still in some form or other part of modern societies today.

Bester (2007) suggests that in developing communities and countries, including Africa,

the mixture of traditional subsistence economic systems and variations of modern commercialism leads to changing forms of existence, values and education, community development and social structuring. Against this background, rural communities within more isolated, traditional cultural contexts may develop differently from urban communities that have to survive and grow within more heterogeneous, globally linked social and economic contexts.

In many communities, research and technology already address matters like Artificial Intelligence, the impact of Big Data and other continuously developing new ideas, methodology and technology. At this stage one can only assume that within years from now, all cultures will observe the possible benefits from these developments and will include those new developments as part of their own.

4.6.4 Human needs for social order and interaction

Social order refers to the establishment and maintenance of social structures or organisation, as well as to regulated social behaviour that is shaped through internal interaction between members of a single community. It also refers to external interactions between members and organisations of different communities. Social/community structures typically reflect the dominant 'culture' of the group, with each individual member carving out his/her own existence by co-operating with the group, from his/her own position and within a personal framework towards the maintenance of the whole (Coertze, 1968).

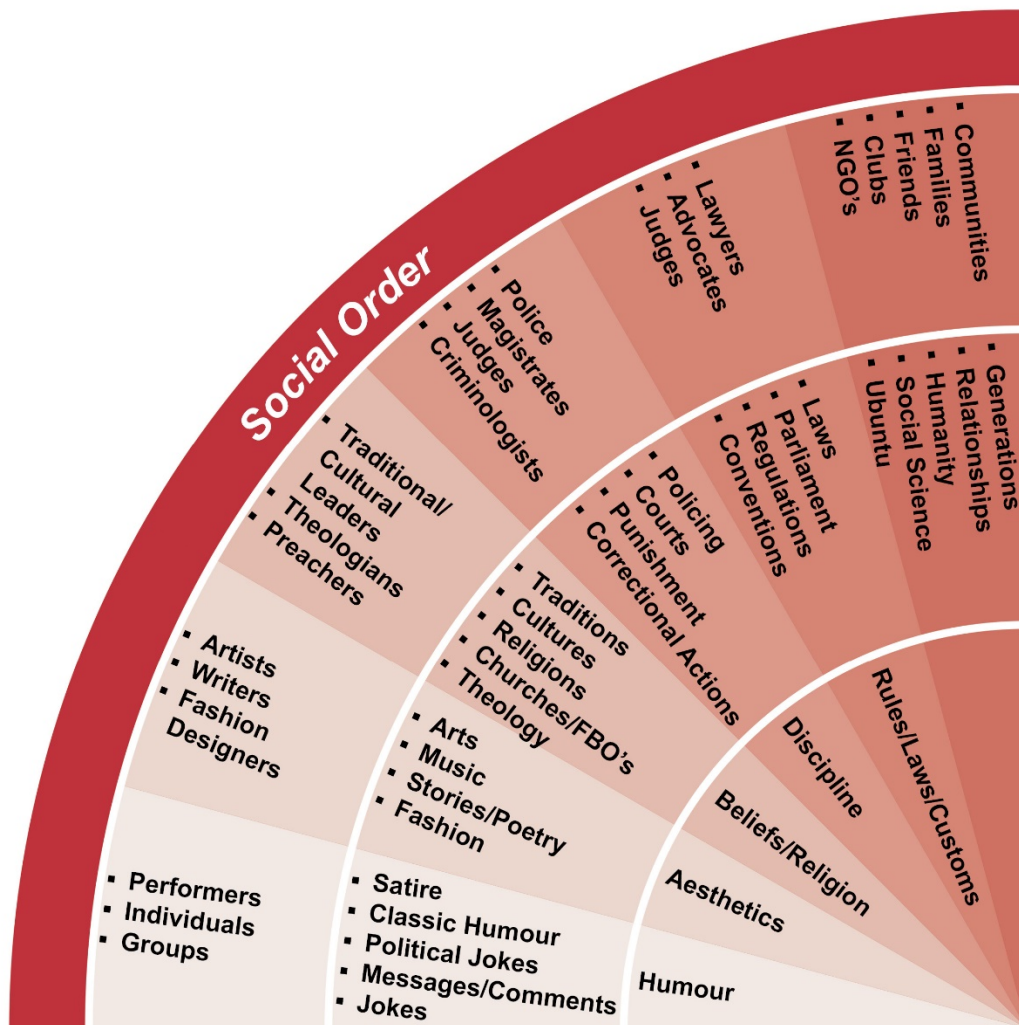


Figure 13: Culture Quadrant 4

As explained in Figure 13, the social nature of humankind leads to social order and personal relationships aimed at ensuring survival and co-operation. People live together or they manage common interests as structurally organised groups. Social order is the way in which people are grouped together and/or live together within a variety of social units, based on principles of relationship and according to common interests, values and the regulation of common behaviour (Coertze & Coertze, 1996). Social relationships are, therefore, typically structured in terms of the social organisation of a particular society.

As an aspect of culture, social organisation is the grouping of individuals within various cultural contexts as a variety of structured social units based on kinship, co-residence and interest groups, or as associations within which the behaviour and relationships of the individual are determined by social values, prescriptions or regulations (Coertze & Coertze, 1996). Among these organised groups, different kinds of organisations can be found, based on aspects such as kinship, politics and economics. For the purpose of this study, the following three community forms are described:

A **society** could be defined as all the people who live in a specific area, sharing a common culture whilst functioning fairly independently of people outside that area. Societies are usually made up of all the different communities in the same area who share the same values and have a common culture (Anyiam-Osigwe et al., 2002).

A **community**, on the other hand, could be defined as a group of people who share a common residential area, social life and interests based on and maintained through local knowledge and strategies of co-operation for survival and growth. A community could, therefore, be described as a group of people who are inhabitants and neighbours within a specific geographic area and who share a social life with common interests at a specific point in time. A good example of this would be a farming community (Coertze & Coertze, 1996). Community members share a sense of belonging and identity, and a community spirit exists among those participating in the activities of the community (Anyiam-Osigwe et al., 2002). These shared biological, intellectual, spiritual and social characteristics and needs of people determine the cultural achievements and behaviour of all those who are part of this community (Coertze & Coertze, 1996).

A **nation** could be defined as a complex social unit within a state. Typical of a nation is gradually integrate into the core group (Coertze & Coertze, 1996). In this case, the State may at any time attempt to stimulate unity and cohesion between different groups through a process of nation building or it may even try to establish an information or knowledge society for the purposes of (for example) developing a digital economy.

In modern, rural developing communities, the relationships of kinship and traditional leadership is largely responsible for social order and function. It is in these leadership structures where systems of rules for behaviour and ways of disciplining those who disobey them are created. Discipline – the obedient adherence to prescribed behaviour through inherent conviction or through external compulsion or force – is typically taught through systematic training in obedience, as well as through punishment and corrective action (Coertze & Coertze, 1996). Where there is discipline, there is order (Anyiam-Osigwe et al., 2002).

In more complex, multi-cultural (culturally diverse), urban societies there is a tendency to move away from kinship-based societies and their social cohesion, in some cases towards a more economically class-based society. Order in such communities is more likely to be maintained by means of a legal system, with laws that are enforceable through the courts' regulation of the relationship between the State and its subjects, as well as through the regulation of the conduct of subjects towards one another. In this sense, the fair and equal treatment of all people under the law would mean that the law is applied in the same way to all people without any exceptions, and that justice means giving a person what he/she deserves (Anyiam-Osigwe et al., 2002).

4.6.4.1 *Law and discipline*

Legal systems that add to the social order consist of coherent sets of written or unwritten compulsory prescriptions within cultural contexts, often derived from general customary rules, and practised as customary law or instructions, or as legislation issued by an authority. In both cases, discipline is the key requirement – the obedient maintenance of prescribed behaviour, either through inner convictions or through external enforcement by authorities (Coertze & Coertze, 1996).

4.6.4.2 *Religion- and faith-based organisations*

Structured supernaturalism typically manifests as categories of religion that include theism, personal supernaturalism and impersonal supernaturalism. Theism is the belief

in and worship of gods; Deism is the rational belief in a god that created but do not maintain its creation; Fetishism is the belief in a supernatural spirit that occupies a natural or human-made feature or object and is in some cases able to perform magical acts (Coertze & Coertze, 1996); Monotheism is the belief in and worship of a single, supreme god; and Naturalism is the belief in and worship of supernatural powers that are related to natural features (Coertze & Coertze, 1996).

While *personal* supernaturalism is the belief in and worship of independent supernatural beings whose favour must be gained by prayer or sacrifices (Coertze & Coertze, 1996; De Villiers, 1968), *impersonal* supernaturalism is the belief in a supernatural power that has no will of its own, but can be used for specific purposes (De Villiers, 1968). An example of this is divination, a process through which the unknown is believed to be exposed through the application of a variety of methods (Coertze & Coertze, 1996). A traditional healer, for example, is believed to apply his/her magical powers to act as intermediary between humans and supernatural beings (Coertze & Coertze 1996). The negative application of supernatural power or magical action could therefore be used to influence events or people (Coertze & Coertze, 1996).

Also relevant to this study are concepts often associated with religion – however, spirituality is a much more encompassing term. It includes the essence of morality, those principles that guide the steps of the individual or group and provide them with a frame of reference against which they could evaluate their own thinking and behaviour. Examples of such principles are trust, truth, credibility and accountability (Coertze & Coertze, 1996). In modern times, the exposure of traditional communities to foreign religions and values, as well as the absence of religion in much of modern society has a marked effect on the beliefs, perceptions and social behaviour of many community members. This suggests that ignorance or denigration of community values could lead to a rejection of everything and everybody associated with the development project (Coertze & Coertze, 1996).

4.6.4.3 *Humour in cultural contact*

Humour, the quality of being funny or the ability to see and appreciate the funny things in

life, to laugh and not to take everything seriously all the time (Anyiam-Osigwe et al., 2002), is a uniquely human characteristic (Apte, 1977). It reflects a cognitive experience of socio-cultural reality and of external socio-cultural factors that trigger this cognitive experience. It also echoes the pleasure obtained from the humoristic cognitive experience, and from external manifestations of the cognitive experience, expressed through mirthful laughter and smiling (Apte, 1977).

Humour is presented and experienced in many forms and during numerous kinds of occasions in different cultures over the world. It varies from the spontaneous and often-unexpected humoristic events that occur in everyday life to formally designed presentations such as visual and performing art forms, the communication of the lighter side of life in the media (e.g. published cartoons and comedies in plays). In many of these forms, humour is a powerful information and educational medium that effectively conveys values, information and prescribed behaviour in an interesting and entertaining way (Bester, 2007).

Among traditional communities, including ethnic populations in Africa, humour is an integral part of accepted social behaviour and relationships that involve joking behaviour as patterned social behaviour. Such joking behaviour is manifested in institutionalised kinship-related roles within the social organisation and is an essential aspect of social interaction with functional relevance to social structure and values (Apte, 1977). In kinship relationships, the joking relationship within the social structure is patterned playful behaviour between two individuals with special kinship or other types of social bonds between them. Such behaviour typically consists of reciprocal or non-reciprocal verbal or action-based humour such as joking, teasing, banter, ridicule, insult and horseplay, usually in the presence of an audience. Kinship-based joking relationships are more formalised, structured, institutionalised, socially controlled and obligatory in nature, and often reflect the nature of the relationship (Apte, 1977).

Some joking relationships are not kin-based; rather, they exist in different types of social groups such as age groups, among members of different villages, or among persons of

different occupational groups. Non-kinship-based joking relations are more person-oriented, voluntary, less formalised and a behavioural attribute of friendship (Apte, 1977). In the sprawling urban townships where traditional and foreign cultural traits are integrated into changed lifestyles, humour is reflected in adapted language traits, values and issues of everyday life. Physical objects, institutions, values, concepts and people are applied as humorous metaphors and meanings in communication, and present the lighter side of life in journalism (Makaringe, 1996).

4.6.4.4 *Art and aesthetics as aspects of culture*

Aesthetics is the study of the rules and principles of art, and a branch of philosophy concerned with the study of concepts such as beauty and taste (Anyiam-Osigwe et al., 2002). Art, on the other hand, is an aspect of culture that is concerned with the creation of beauty, a harmonious relationship between rhythm, sound, colour, line, form and movement (Coertze & Coertze, 1996). Performing arts include various forms of music, dancing, praise songs, mimic and drama, while visual arts include drawing, painting, engraving, body decorations, wall and textile decorations, etc., and art in literature includes poems, folklore, and so forth (Ember & Ember, 1973).

The largely religious and social-orientated expressions of art and aesthetic values in traditional communal lifestyles have to some extent changed to expressions of urban social forms of life and adapted European forms of art. Some modern developments such as commercialism and related aspects of technology have had a detrimental effect on aesthetic values and traditional forms of art (Bester, 2007).

4.6.5 *Holistic approach to culture in the digital environment*

As indicated earlier, the diagram in Figure 4.2 and each of the quadrants (Figures 4.3 to 4.6) are based on the work done by Bester (2007). In order to look deeper into the concept of cultural diversity, the 2007 diagram was extended to include the most recent digital concepts and ensure an improved understanding of the position of all activities and role players. This diagram and the four quadrants each indicates a category of different cultural concepts that are interlinked towards awareness of the 'current cultural' position

of each digital citizen or community. This is an important platform from where to guide transformation towards a possible 'new culture' of the digital community. The relationship between the digital citizen and the digital community will be based on cultural activities in each of the mentioned quadrants: existence, construction, development and social order. Eventually, it seems that, any new cultural guidelines towards (for example) safe use of information in communication, social media, research, work and leisure are important elements of adaptation and transformation towards a digital community.

A personal observation is that the speed of the ever-advancing digital technology further complicates the community/cultural consensus of what behaviour is acceptable to that specific knowledge society. The continuous improvement of digital technology and its impact on behaviour do not only enable confidence and consistency, but also serve as an obstacle to acceptable behaviour, culture and traditions of each Knowledge Society.

It seems one should be cautious and sensitive not to elevate the status of new technology as if it equals a new culture. For the moment, a more functional approach could be to emphasise that new technology (if fully accepted and integrated) could lead to new cultural guidelines and behaviour for the developing individual or community. When different cultures start to interact in a digital environment, one should be able to initially identify elements of my culture, your culture and our new culture.

4.6.6 Managing transformation and change towards possible new behaviour in the digital environment

In preparation for change or transformation in cultural and related human behaviour, Robbins (1997) describes change and resistance to change by referring to various methodologies, but also indicates that neither can be treated as an occasional disturbance in people's otherwise peaceful and predictable world. He notes that transformation increasingly takes place in an environment of constant and chaotic change, and that it is facilitated by specialist change agents or transformation agents (Robbins, 1997).

Robbins (1997) further indicates that the cultural transformation process should have a wide variety of action plans, strategies and tactics in reserve when community (culture) transformation takes place. This process involves a whole range of stakeholders with diverse needs and expectations, sponsors with strong views on their objectives, and an expansive workforce with its particular demands (Robbins,1997). Figure 9 (page 182) gives practical meaning to the diverse needs, objectives and stakeholders in the transformation process.

Referring again to Figure 9, cultural transformation towards community development should be understood as the application of action plans to community life (culture) in general (referring to Figures 10 to 13), not only with regard to the specific quadrant, but holistically. For the sake of sustainability, necessary transformation should be integrated with community life, culture, habits and traditions. Hence, interventions (in the case of this study, training according to the suggested curriculum) in community life should not only take note of one-dimensional transformation objectives, but also of the integrated impact of the final result on the traditions and socio-cultural aspects of the community. In order to secure the balance of activities in community life during transformation, cultural aspects should include at least those interrelated aspects that take cognisance of the economy, health services, knowledge, art, the military/security system, education, the judicial system, religion, social organisation, games and recreation, political organisation, language, technology and the value system of the community (Coertze & Coertze, 1996) as reflected in Figure 9.

To ensure the sustainable development of a new culture (or elements thereof) for digital communities, indications are that morality, ethics, culture and traditions have a strong influence on human behaviour, human needs and the ability of communities to accept transformation and change.

The motivation behind transformation and change is usually the result of a changing environment (or changing technology in this case) that confronts the community with new opportunities, new needs (wishes) or new ideas that affect the normal harmony and/or

balance in the community concerned (Coertze, 1973). In this sense, transformation can be defined as the reorientation of communities and/or the reshaping of individual thinking and behaviour through training, planned interventions, new experiences and/or structured transformation and formal change management programmes. Such planned interventions include the envisaged curriculum to teach Information Ethics in Africa. The suggested interventions typically require changes to existing cultural principles, values and community codes of conduct. It follows that such changes can only be successful if those involved know and understand the community in question and the environment in which it operates, i.e. the culture, beliefs, systems and structures that hold such a community together (Bester, 2007).

It would then seem that an integrated culture and community transformation requires a combination of various interconnected aspects of the culture, as well as the ability and commitment of cultural groups to survive and grow within a specific new environment. Critical to successful transformation will always be the imperative to balance needs for change with the envisaged benefits of the new or post-transformation position. All of these aspects could form part of a curriculum to teach Information Ethics in Africa.

4.6.7 Cultural change by means of an intervention

As mentioned earlier, every community has an existing body of knowledge that sustains the group at a specific time and within a specific environment. Development or change in communities can only come about if that body of knowledge is changed (Bester, 2007). For the purpose of this study, it is important to understand how the existing body of knowledge of a community could be developed or changed through a training curriculum.

As a source of community knowledge, enculturation is the result of internal knowledge transferred from one generation to the next, whereas acculturation happens when a community incorporates foreign cultural elements into its own traditions and ways of being (Coertze & Coertze, 1996; Anyiam-Osigwe et al., 2002), thus effecting changes to its established culture (Coertze, 1968). Direct acculturation occurs when cultural change is intentionally imposed from within (own authority) or from without (by a foreign authority)

(Coertze & Coertze, 1996). The acceptance and application of new values and customs from the modern international world, also through globalisation, are typically referred to as modernism (Coertze & Coertze, 1996).

In building the total body of knowledge for a community, Bester (2007) draws a distinction between the concept of indigenous knowledge and foreign knowledge in any community. He describes **Indigenous knowledge** as knowledge that is already intrinsic to a particular community and is usually based on local information, traditions and values perceived as necessary to the survival and growth of that community. Indigenous knowledge is typically transferred from one generation to the next through a process of enculturation and includes shared norms or ideals of how people should act in certain situations or towards one another. This set of knowledge could also include beliefs about the way of life that is desirable for society, symbols that communicate meanings of common interest, and different classifications of reality (Peoples & Baily, 2000). **Foreign knowledge** is knowledge that is new to a community, that enters a community from the outside, and is typically introduced into the particular host community through acculturation (Bester, 2007).

The survival and development of human society therefore depends on the knowledge of individuals, as well as on the shared pool of knowledge that communities constantly tap into in order to exist, to interact with one another, and to cope with existing and changing conditions (Bester, 2007).

The human environment is a reality upon which humankind depends for its continued existence, and it includes the natural environment, the socio-cultural environment and an intangible, unseen environment (Coertze, 1980; Coertze & Coertze, 1996). While the natural environment is the physical environment that consists of the earth and everything on it, climatic conditions and the elements in space, the socio-cultural environment is the cultural environment created by specific groups of humans, often through a process of enculturation or acculturation (Coertze & Coertze, 1996). Environmental resources are necessary for survival and the impact of humans on the environment should be a prime consideration in community development design (Anyiam-Osigwe et al., 2002).

4.6.8 Practical steps in facilitating cultural and behavioural change

Bester (2007) suggests a useful tool to facilitate the impact of cultural diversity in multi-cultural contact and transformation. The steps he proposes and discusses include a number of critical features that need to be observed, namely an understanding of both the internal and external needs for development; the formation of sufficient agreement and alignment among role players in developing communities; the use of existing and new information in the developmental process; and the role of information towards motivation and a sustainable focus.

In developing a curriculum to teach Information Ethics, it is also important to prepare teachers, lecturers and facilitators to create a platform on which intercultural contact can take place. In this regard, Bester (2007) poses a number of questions that could guide facilitators in their preparation for intercultural contact in teaching and learning situations.

Key questions that facilitators need to answer include the following:

- What is the existing level of information available on the topic(s) of contact in each of the involved cultural groups?
- What do the communities concerned understand regarding the envisaged cultural transformation?
- What are the different groups' sources of information? Facilitators must ensure that they are informed about existing credible sources of information as well as about the methodology that the particular community uses to share information. The latter might include electronic media, newspapers/letters, oral communication through community leaders such as clinic nurses/teachers, etc.
- Is there in any of the groups a possible lack of information in terms of the content, sources and format of the envisaged contact and transformation?
- How can facilitators ensure that the community receives information regarding the transformation while keeping in mind the content, sources and format of the needed information?
- How can new information be integrated into existing structures of information – for example, by making use of schools, clinics, community meetings, etc.?
- How can the community's traditions, beliefs, norms and values – the way the

community does things – be accommodated without compromising the aims and objectives of the transformation, that is, also in terms of the way in which information is communicated, used and applied by the facilitator?

- How can differences between existing information and new/foreign information be reconciled? (The facilitator should be able to interpret the new information in terms of the existing knowledge of a community. New information might require more background knowledge; it might even clash with the existing beliefs of a community. Information managers should therefore be prepared to resort from time to time to the methodology of change agents.)

Informed by the answers to the listed questions as well as the credibility and acceptance of the transformation process, teaching and learning facilitators should ensure that

- they are aware of the correct levels of knowledge and understanding of people in the community through whom they might be able to interpret the new information;
- timely, correct and credible information needed by the community to address the problem/need via the development project is communicated to the community concerned;
- information is made understandable and accessible through correct and usable formats appropriate to the specific community;
- the community's changing needs and feelings towards the transformation are monitored, interpreted and addressed, so that progress can be made in terms of the objectives of the project/programme;
- new information that is needed to fully comprehend the transformation objectives is made available to the community so that it can become an integral part of the community's existing knowledge of the objectives; and
- the reasons for possible community resistance against the transformation as well as ways in which such resistance might be dissolved – e.g. by keeping the community informed of small successes already achieved – should be timeously identified and addressed.

This chapter is the place to start thinking about the design and implementation of a

curriculum to teach Information Ethics in cultural diverse communities (further detail will follow in Chapter 6). Once complete, the curriculum and training programme should be one of the possible tools available to facilitators/trainers and it should focus on cultural transformation to establish information and knowledge societies. In implementing the curriculum, it seems that facilitators/trainers also need to understand influences that could affect the change/learning-teaching/transformation process (Bester, 2007).

In planning effective training, trainers/facilitators should strive during the first consultation stage to include community leaders who represent the various cultural components. Later sessions could focus on specific items, and community leaders could then suggest their own teams or specialised groups. Under no circumstances should community groups feel that they have been sidelined or left out, since this could eventually result in serious credibility problems, even if the project is clearly to the benefit of the community (Bester, 2007).

The facilitators could follow a number of steps to gain information on and better understand the transforming community.

(a) Step 1 – Gain information on laws, internal politics and governance

To be effective, facilitators must have, or develop, sensitivity to the political climate in communities, attitudes towards and the status of the new information, the extent of government involvement in the project and its control over the project. Without this kind of sensitivity, the project might fail, simply because of different political ideologies. This sensitivity must direct itself to all sources of power in the community, as well as to all stakeholders who are involved in managing this power.

Facilitators and programme designers should also have a sound knowledge and/or understanding of the legal and governmental framework within which the development will take place, and they should have the necessary information on the city council, municipalities, local government offices, provincial and national legislation.

It may also be necessary for the information manager to have some knowledge of the

constitutional framework of the country where the development project is to take place, not only because legal documents are typically based on the Constitution, but also because the latter spells out the human rights that may not be denied to people in this particular context.

(b) Step 2 – Gain information on specific cultural influences

In most cases, cultural/ethnic tensions in transformation unavoidably have an impact on teaching and learning projects. It might be crucial for the facilitator to consult widely with community leaders, religious groups and opposing ethnic groups prior to the commencement of the project. If not, it is quite possible that certain decisions and/or project activities might offend the community's cultural sensibilities and that, as a result, the community will oppose rather than support the development initiative. The most important rule in this regard is to show respect for the traditions and/or customs of the targeted community. Under no circumstances should the people involved in facilitating the project create the perception that they regard the community's cultural norms, standards and activities as inferior to their own. This in itself is enough to evoke the ire of community members.

(c) Step 3 – Gain information on infrastructure and services available

As discussed earlier in this study, the resource infrastructure and services need to be analysed for the successful management of the transformation. If resources like computers, ICT or electricity are unavailable but necessary, they will have to be procured prior to the commencement of the project. This could lead to delays, have financial implications and/or lead to a decision not to proceed with the project at all. It is therefore up to the facilitators to ensure that this kind of information is available in as much detail as possible when needed.

(d) Step 4 – Gain information on resources and the economic situation

Economic information refers not only to resources, finances or budgets required for community development, but also to the way such information is conveyed to the people concerned. The kind of economic information that communities would need might include information on the approved budget, its constraints, and possible benefits to the

community. It is once again the task of the facilitator to ensure that information on income and expenditure as well as on economic benefits is regularly and clearly shared with all concerned – not only to prevent deficits, but also to keep everybody motivated and focused.

(e) Step 5 – Gain information on levels of human development

Information on the developmental levels of communities is crucial to the identification of appropriate transformation strategies, processes and activities, given that literacy, educational and skills levels have an explicit impact on the viability of the project and on community members' understanding of the purpose and possible effects of the project on their lives.

Besides understanding the targeted community, consulting with local leadership is important in preparing for training sessions in developing information societies. An agenda for meeting with local leadership could include matters that aim to

- inform community leaders of the background to the new information and the suggested transformation, and provide them with basic information in this regard;
- answer possible questions that the community has, thus creating opportunities for leaders to report back to their constituencies or interest groups; and
- guide community leaders towards the set objectives and inform them of project progress. (This will ensure their experiences of movement and success by, for example, providing them with clear progress benchmarks and opportunities for community public announcements such as radio shows to announce new terminology or aspects of safer behaviour.)

After consultation with community leaders, and with a view to planning training sessions to develop information societies, Bester (2007) developed a checklist for community consultation. This checklist is equally practical in evaluating training outcomes and includes the following:

- A description of the envisaged transformation objective (maybe a behavioural change or a new terminology)
- Motives and motivation for the project (maybe international clarity or standardisation)

of terminologies)

- A strategy and management plan for the transformation (methodology)
- Financial benefits or implications for the project
- Possible local knowledge related to the project (maybe even better local terminology or methodology)
- Possible indigenous knowledge that could influence the project (maybe the historic understanding of transformation processes)

4.7 Conclusion

Chapter 4 contributes to the central statement of this study by addressing the essence, impact and possible influences of culture, cultural diversity and multi-cultural interaction on the development of a curriculum model to teach Information Ethics in Southern Africa.

The proposed model, as presented in Figure 9 of this chapter, provides a practical perspective on the 17 cultural components that ought to be considered in attempts to effectively and holistically train people. Each of the cultural components reflects a specific action of the community culture, with clustered activities and community (or appointed) leaders to guide the community on related matters. These cultural components and the related leadership roles do not present themselves as specialised areas as clearly in traditional communities in Africa as they do in Western societies. In the latter, one finds a health fraternity with doctors and nurses; a religious fraternity with pastors and priests; an educational fraternity with teachers and headmasters; a judicial fraternity with magistrates and judges; etc. In most traditional African communities, one tends to find that the traditional leader is also the leader in many or all of these areas.

Training in its very essence is meant to structure new knowledge and guide new behaviour. Taken together, these theoretical and practical perspectives emphasise the need for would-be trainers or facilitators as well as curriculum developers to understand and take cognisance – not only of cultural differences, but also of the importance of consulting cultural leaders and role players on the proper way of addressing issues related to cultural transformation. Understanding the interrelatedness of the cultural

components contributes markedly to a better understanding of cultural diversity and plays a significant role in the guiding of individuals and communities regarding the need to change their behaviour. Consulting communities in matters of cultural importance therefore implies that one needs to take note of each quadrant and component in Figure 9, as well as of all the role players. It seems logical that information facilitators and teachers in cultural transformation should base their community consultation process on these cultural components, and adopt a balanced approach that will accommodate all the cultural components of the developing community concerned.

Towards a better understanding of culture and its relevance for training programmes (Chapter 6) to enhance awareness and knowledge related to Information Ethics, this chapter described cultural diversity in four focus areas. The first is a focus on what culture really is within the context of the academic definition of culture, cultural activities, role players and their actions. The second focus was on the purpose and use of culture, which positions culture as a tool to arrange and order community life, monitor behaviour, safeguard people and guide people towards known best practices for their group. The structure for culture was the third focus which lead to a better understanding of the similarities in the design and structure of cultures as well as the universal patterns of cultures. The last focus created a platform for better understanding of the interaction between cultures, which could lead to processes for contact between cultures and, where needed, acceptable relations between cultures. This focus should also attend to acculturation, enculturation, cultural influencing, fear

Finally, this chapter listed practical guidelines on how trainers could interpret existing culture, traditions and behaviour in preparing communities (as it will be relevant in Chapter 6) for the curriculum model to train Information Ethics in Southern Africa.

CHAPTER FIVE: INFORMATION ETHICS AWARENESS, ADVOCACY AND TRAINING IN SOUTHERN AFRICA

5.1 Background

Understandings of Information Ethics as well as its origins and historical development were discussed in Chapter 2 of this study. Then, since the study focuses on the development of a framework or toolkit to teach Information Ethics in communities in Southern Africa, the third chapter contextualised these Information Ethics elements to within the digital landscape of the southern sub-region of Africa. It aimed to illustrate the digital status of the African continent as well as global and continental influences on Southern Africa in this regard. The cultural complexity of the multi-cultural Southern African environment was investigated from an ethical perspective in Chapter 4 and will again in full be discussed in Chapter 6. These perspectives were all vital elements to curriculum research and provided a better understanding of the operational environment of the envisaged model for the Teaching of Information Ethics in Southern Africa.

As indicated in Chapter 1, the research method used in this study is action research, which is generally explicitly political, rather than value neutral (Neumann, 2000:25). The action research data presented in this chapter therefore encompasses not only factual data, but also the affective response of research participants to the topics and issues related to the advocacy of Information Ethics on the African continent. Since one of the aims of this study is to raise awareness of the need to use information and information communication technologies responsibly and ethically, it was imperative to consider the different views that research participants – that is, all those participating in Information Ethics events and activities – held on the opportunities and challenges posed by the information and digital age.

Chapter 5 outlines the current status of Information Ethics teaching in Southern Africa. Its primary purpose is to describe the means used for the advocacy of Information Ethics in

Africa, the response to and impact of the advocacy on research participants, and the 'products' or 'tangible outcomes' (Capurro, 2007) of the advocacy campaign.

5.2 Introduction and purpose

Although the terms 'information' and 'ethics' are currently used in the context of digital technology (Information Communications Technology (ICT) in particular), this was not always the case. 'Ethics' used to refer to what was philosophically considered 'good' or 'bad' in respect of human behaviour, specifically in relation to the way people interacted with one another. 'Information', used in the context of human communication, referred to the transfer of content – sensory stimuli, impressions, facts, or data – from one information source to another. the focus was not on the information source (nature, people, pictures, or texts), but on people's engagement with the content – copyright, plagiarism, and pornography, among others. 'Information ethics', as defined by UNESCO, is more inclusive; a generic term referring to people's engagement with information and the ways in which they utilise the tools by means of which information is generated, accessed, processed and disseminated.

The term 'Information Ethics' was coined at the 2003 World Summit on Information Societies (WSIS) to refer to the need for a code of conduct to regulate the way in which people engaged with information communications technology. More specifically, given the emphasis placed on the role that digital technology should play in the alleviation of poverty and hunger, the provision of primary education for all, the eradication of gender and other inequalities, the reduction of child mortality and the improvement of health, the forming of global partnerships aimed at the creation of a more peaceful, just and prosperous world (WSIS, 2003). It seems these development purposes, albeit phrased in different ways, are in fact encapsulated in the WSIS definition of Information Ethics

In Africa, initial deliberations on Information Ethics and its role in the development of African information and knowledge societies, took place in 2007, at the first international conference on Information Ethics ever to be held on African soil. Since then, primarily due to the concerted efforts of different parties, awareness of Information Ethics and its role

in the development of information and knowledge societies has increased steadily but surely. Scholars are actively researching Information Ethics issues, both from a global and an African perspective, and a diverse conglomeration of information ethics advocates/agents/champions who use different means and strategies have sensitised the population at large to the often 'devastating' consequences (Mutula, 2013) of irresponsible or unethical digital behaviour.

The purpose of this chapter is to describe these strategies and means, as well as to indicate who acted as Information Ethics (IE) agents/champions, which means they used for IE advocacy, what challenges they faced in doing so, and what they did to overcome these?

5.3 The background of teaching Information Ethics in Africa

This definition is informed by the values espoused in classical Western/European philosophies – values that are assumed to be universally applicable. The validity of this claim can, however, be contested if these supposedly universal Western values are compared to those of indigenous cultures across the world who do not necessarily subscribe to them. Not all of these cultures, Africa being a case in point, regard values like privacy and individuality as important or even relevant to their way of life. In fact, the African value of 'ubuntu' is the direct opposite of these values, and it emphasises communality as critical to survival and harmonious co-existence. In this context, the use of Western values as the yardstick against which the morality, developmental status and eligibility to global membership are measured, might well be perceived as yet another 'colonial' attempt to erode or further marginalise indigenous knowledge and value systems.

The technological revolution referred to in Chapter 2 could potentially change all of this. Technology is not neutral: all technologies create new ways of being, influence people's relations with one another and shape institutions, economies and moral values in more or less radical ways (Brunet et al., 2004). It has its own culture, one to which, according to Mesbahi (2013:42) all digital citizens have to subscribe. What exactly constitutes digital

culture is, however, not clear. Could 'open access', 'information for all', and the use of English as the 'official' digital language, for example, be regarded as aspects of digital culture? If so, which value systems do they reflect? Is 'open access' a reflection of Western/universal or of African values? Does the use of English as the 'official' language of the digital society constitute neo-colonialism? Is the 'information for all' principle reminiscent of Communist or Socialist ideology?

Notwithstanding the lack of clarity on the nature of digital culture, people seemingly have no choice but to subscribe to it. Mesbahi (2013:42) warns, however, that such adherence must be approached "cautiously, and vigilant not only to the levelling and anarchy that it could create but also to its potential impact on national, local and indigenous cultures". Given the ethical implications in questions and concerns like these, digital technology training, application and use should according to Brunet et al. (2004) be approached from an ethical perspective. He does not, however, indicate how and from which ethical perspective this should be done.

Having reviewed the available literature to find answers to these questions, Capurro (2013:13) came to the conclusion that African philosophy not only has a "long and rich past" dating as far back as 3000 BC, but it has also during the course of its evolution integrated and incorporated ideas from the philosophies of other nations with whom it came into contact. Hence, current African philosophy reflects an eclectic philosophical mix of ancient Egyptian Ma'at views on life and death; values and principles derived from the Greek philosophies underpinning current Western thinking; anti-capitalist ideas on social, political and economic reconstructions reflecting Marxism, Socialism and Communism; to name a few. Because of this, Ocholla (2013:22) argues that African value systems have much in common with the values informing people in other parts of the world.

One could argue that this flexibility and the diversity of African societies signal the potential of African philosophical frameworks to also accommodate, albeit selectively, Western-oriented Information Ethics principles applicable to uniquely Africa situations

and contexts. The proviso is that the incorporation of these 'alien' views should not be aimed at the marginalisation or erosion of indigenous African knowledge systems (as colonialism is perceived to have done). The question to be asked is not 'how do we convince Africans to accept Western perspectives on Information Ethics and its roles/function' but, as Ocholla (2013:27) posits, how the conceptualisation and contextualisation of IE theories and relationships between ethics, laws and morals on the one hand, and multi-culturalism, trans-culturalism and inter-culturalism on the other, define and explain our understanding of African IE.

The African continent differs from other countries in many ways, especially when viewed "through the lens of colonial or modern socio-political, economic or technological challenges" (Ocholla, 2013). Firstly, Africa comprises 54 countries, some of which are ruled much like Western democracies, while others are ruled by dictators, despots or anarchists. Secondly, African culture is complex and represents a hybrid mix of traditions, languages, values, religions and beliefs. Thirdly, although it is the continent with the fastest mobile phone growth rate in the world (Gosier, 2012), much of Africa is still firmly rooted in the Agricultural or early Industrial Age.

Given these differences, the question is whether there is or should be a common Africa ethics that transcends all these differences? Is 'Ubuntu' perhaps such an ethic? According to Ramose (2002), ubuntu is defined in two ways: (a) *Motho ke motho ka batho* (to be human is to affirm one's humanity by recognising the humanity of others and, on that basis establish humane, respectful relationships with them); and (b) *Feta kgomo tshware motho* (if and when one is faced with a decisive choice between wealth and the preservation of life of another human being, then one should opt for the preservation of life). Regardless of the differences in these two definitions, the premise on which they rest is the same: one should share and care for one another, albeit in different ways. In the words of Olinger, Britz and Olivier (2005:293) "a person is a person through other persons".

In this community-oriented mindset, “to be is to belong” (Brannigan, 2005). In the African context, ‘to be’ is not, however, the same as ‘being’ as interpreted in some Western philosophical traditions. Whereas the latter is a metaphysical concept, the former is about “communal existence” (Brannigan, 2005), and a symbiotic “living with and through the other” – something akin to the “spirit of family life” (Brannigan, 2005). Is this way of *being* not perhaps closer to the digital culture referred to earlier? If so, should the ‘universal’, Western-oriented views on what is regarded as ethical not perhaps reconsider some of the principles informing current definitions of Information Ethics – specifically those related to ‘privacy’? Would this not establish the right balance between “the blessings of universality” and the need to preserve plurality (Capurro, 1990).

The key motive of such an inter-cultural approach to Information Ethics is not to promote the assimilation of one culture into another or to force people to associate or bond with others whose values are markedly different from theirs. Rather, its purpose should be to create opportunities for multiple “cross-cultural dialogues, marked by a fundamental respect for the irreducible differences that define our cultures and identities” (Ess, 2007:98). If those participating in the dialogue decide to ‘bond’, it should be because they believe that their lives will be “narrower and less full alone than in association with others whose lifestyles and worldviews differ from theirs” (Taylor, 2002:191).

That such bonding is possible was evident not only at international Information Ethics conferences and workshops on the African continent, but also from the extent to which ANIE members across the world were embarking on joint IE projects and/or research. The rest of this chapter is devoted to a description of these events, and the extent to which they contributed to a greater understanding of and respect for others’ life-worlds, life-styles and value systems.

5.4 Laying the foundation of teaching Information Ethics in Southern Africa

The foundation for Information Ethics advocacy was laid at an international Information Ethics symposium in Karlsruhe, Germany, in 2003/4. Attending scholars who attempted to gain a better understanding of inter-cultural ethics, engaged with one another in

discussions about ethical issues from their particular cultural perspectives. Concerned about the under-representation of African scholars at the symposium as well as in Information Ethics research publications, they identified the need for an Information Ethics symposium or conference on the African continent as a priority issue (Britz, 2007; Capurro, 2007).

In 2007, the South African Department of Communications responded to this recommendation and sponsored the first international conference on Information Ethics in Africa. Jointly organised by the universities of Pretoria (RSA), Wisconsin-Milwaukee (USA), and Pittsburgh (USA), the conference brought together policy developers, practitioners, and academics/scholars from Africa, the USA, the UK and Europe to experience the “joy of sharing knowledge” – the overarching theme of the conference.

Conference papers as well as subsequent discussions focused on one of three topics:

- Foundations of African Information Ethics
- Cultural Diversity and Globalisation;
- Development, Poverty and ICT

Delegates represented a diverse spectrum of expertise — governance; policy development; Information Studies/Sciences; Library and Information Studies/Sciences; Journalism and Media Studies; Business Studies; Theology; Religious Studies; Computer Science; Education; and Law – and shared their knowledge, perspectives and/or experiences with one another during plenary and breakaway discussion sessions. Critical reflections on the need for and nature of Information Ethics in Africa, as well as on the impact of traditional myths/beliefs on people’s attitudes towards and use of digital technologies in Africa, featured strongly in all deliberations.

A serious concern emerging from conference deliberations was the fear that the peoples of Africa, who were still traumatised by the effects of colonialism, might perceive the advocacy of IE in Africa as a neo-colonial attempt to further marginalise or erode Africa’s traditional knowledge and value systems. Aware of this concern, delegates suggested that all IE advocacy events should present those attending with the opportunity to discuss

Information Ethics in terms of its potential impact on indigenous knowledge and value systems, and in terms of the value that knowledge of such systems could add to Western/European perspectives on Information Ethics (Ess, 2007:114; Frohmann, 2007:139). They suggested, moreover, that IE conferences or workshops should include some instruction on the use of digital technologies in the authentication, mapping and restoration of marginalised African knowledge systems (Meshabi, 2007; Msuya, 2007; Löwstedt, 2007:205; Ocholla, 2007:242) and the stemming of the African “brain drain” (Britz, 2007).

Africa IE Declaration

In order to create and support a safe, structured and comfortable cyber environment where information societies can operate to their full potential we envisage collaboration and clear guidelines related to (a) the generation and gathering of information; (b) copyright, ownership and classification of information; (c) using, packaging, further processing and organisation of information; (d) freedom of expression and protection of personal information; (e) sharing, distributing, storage and retrieval of information, and (f) destroying of information (Draft document on Africa Declaration on IE prepared by ACEIE Director in support of UNESCO, WSIS Action Line 10).

Fig 14: Africa IE Declaration

Informed by their deliberations as well by the emphasis on inter-culturalism in the WSIS Declaration on Information Societies, delegates at this conference formulated their own ‘African’ Declaration on African IE (see Figure 14). Encapsulated in this declaration, which was referred to as ‘Tshwane Declaration on Information Ethics for Africa’, was delegates’ vision of an African society committed to peace, the upholding of fundamental values (freedom, equality, solidarity and tolerance), shared responsibility, and respect for nature. Delegates believed that by committing themselves to uphold these principles, they not only indicated their support for the ‘universal’ principles informing various international declarations (i.e. the United Nations Charter; International Law and Multilateralism; the Universal Declaration of Human Rights; the WSIS; and the Millennium Development Goals), but also made a “genuine African contribution to the UNESCO Code of Ethics” for Information and Knowledge Societies (Capurro, 2013: Foreword).

The signatories of the declaration suggested that six conditions had to be met to realise this vision. These were, in no specific order, (a) the founding of an Information Ethics Society for Africa (IESA) and the requisite structures for its operation; (b) the raising of people's awareness of ICT-related opportunities; (c) the training of government officials and IE 'missionaries'; (d) the promotion of Africa IE research; (e) the development of IE ethics models and/or education and training programmes; and (f) access to information and ICTs for all the peoples of Africa.

5.4.1 The Africa Network for Information Ethics (ANIE)

The first of the six afore-mentioned resolutions to be executed was the creation of a digital network or website that would enable academics, government departments, private sector companies, government departments, non-governmental organisations, UNESCO Head Office, Natcomm Offices and regional structures in Africa to interact with one another and with their global counterparts. Named the ANIE (Africa Network for Information Ethics), it would not only enable its members to stay in touch with one another, but also to support or collaborate with one another on research, curriculum development, and other Information Ethics projects. Through the ANIE, its members would moreover be alerted to upcoming, ongoing or completed IE events, projects and publications, thus ensuring that they would keep abreast with the latest issues and developments in the IE field.

Once the ANIE was up and running, its approximately 300 subscribers were encouraged to start local ANIE networks or chapters that would perform more or less the same functions as the mother network, but at local, regional or national level. Not only would such networks contribute to the expansion of the ANIE, but it would also facilitate Information Ethics advocacy in different sectors of society.

5.4.2 IE Advocacy Strategy

While the resolutions and recommendations made by delegates at the 2007 (ANIE) conference served as broad indications of *what* should be done to raise awareness of

Information Ethics in Africa, they did not give any indication of *how* this should be done. Put differently, the resolutions indicated only what the strategic goals should be; the plan/s for achieving these goals still had to be debated and drawn up. In January 2010, the ANIE Board, in conjunction with the University of Pretoria (UP), consequently ran a strategic planning workshop at the UP in January 2010. The workshop was informed by the strategic purpose which was to (a) determine progress made with the execution of recommendations made at the 2007 ANIE conference; (b) identify potential IE research projects, and (c) draw up a strategic plan for IE advocacy on the continent.

With regard to the execution of conference recommendations, the ANIE Board reported that the compilation of an African Reader containing the 2007 conference papers was nearing completion. Furthermore, a tentative “Grant Proposal for a 12-University Teaching Structure and Curriculum” had been drawn up for the Board’s comment and further input, and the greater part of the workshop was spent on this.

As to potential research projects, there was general agreement among participants that research should initially be related to curriculum development and delivery, and that the setting up of a journal dedicated to the publication of IE research would do much to generate research on Information Ethics issues. Hence, participants were urged to prepare research-based papers on IE matters for presentation at the 2012 SCECSAL conference in Zanzibar. Regarding IE advocacy strategies, participants recommended that conferences and workshops should be the primary means to create an understanding and awareness of Information Ethics on the continent. According to participants, workshops on e-governance and the establishment of an Africa-based Information Ethics Institute and Information Ethics Advisory Council were critical in this regard,

5.4.3 IESA/ANIE Support Structures

The establishment of the IESA administrative structure (a key recommendation of delegates at the 2007 ANIE conference) concluded the strengthening of the IE advocacy foundation. As the result of lengthy negotiations between the ANIE Board, UNESCO, the South African government and the Department of Information Science at the University

of Pretoria, such a structure was established on 15 December 2011. Manned by a small group of people constituting the IESA Secretariat, and named the African Centre for Excellence of Information Ethics (ACEIE), it was based in the Department of Information Science (one of the academic departments in the Faculty of Engineering, Built Environment and Information Technology) at the University of Pretoria.

The establishment of the office was made possible through the signing of a formal 3-year Memorandum of Agreement (MoA) between the University of Pretoria and the South African Government Department of Communications (DoC). In terms of this MoA, the maintenance and activities of the centre – the ACEIE – would be funded by the DoC, while the management of the office would be the responsibility of the UP. Also in terms of the MoA, the ACEIE had a dual function: firstly, to raise awareness of IE activities on the African continent and, secondly, as the IESA secretariat, to perform certain administrative functions. In terms of the former, the ACEIE had to promote Information Ethics research, provide IE training to various sectors of society, and develop tools for the practical application of ethical reasoning. In terms of the latter, the ACEIE had to convene IE conferences and workshops, ensure that conference decisions were executed, host IE awards ceremonies, and maintain as well as broaden the ANIE and its relationships with international and African organisations and institutions.

Informed by these requirements as well as by work already done by the ANIE since 2007, the ACEIE, planning to use the ANIE as its portal, set itself five strategic objectives: (a) to encourage and conduct research on Information Ethics and related issues; (b) to complete the development and roll-out of the 12-university IE curriculum project; (c) to finalise and distribute the Africa Reader on Information Ethics to participating institutions; (d) to conduct Information Ethics awareness workshops for government officials and communities on the African continent; and (e) to expand the ANIE through the encouragement of local networks in African countries and/or regions visited during the course of its IE advocacy activities.

In 2014, on expiry of the UP agreement with the DoC (since renamed as the DTPS (Department of Telecommunications and Postal Services)), these two parties signed a new 3-year MoA. In terms of the new agreement, the ACEIE continued with the activities stipulated in the original agreement, but also had to assist the DTPS in the roll-out of the RSA government's National Health Initiative (NHI) (5.7.2), broaden its scope to include the schooling sector in its IE awareness campaigns (5.5), and contribute to the internationalisation of research-based Information Ethics policies and practices for consideration by African and international inter-governmental organisations (the African Union, African Regional Communities), and UNESCO.

In the same year, the UP also renewed its existing MoA with UNESCO. In terms of the new agreement, all UNESCO projects run by the UP and/or ACEIE had to meet the conditions set out in the agreement, namely: (a) achievement of the IE and digital wellness objectives of all UNESCO structures in Africa (i.e. the National UNESCO Committees in participating African countries, the Communication and Information Sector (CI), and the IFAP); (b) alignment of all the Centre's UNESCO-funded projects, policies and investments in ICT infrastructure, equipment and training to the WSIS Action Lines to address the need for CI and IFAP empowerment in all information and knowledge society sectors; (c) involvement, where applicable, of UNESCO regional structures for the Africa Region, the East Africa Regional Office, the Southern Africa Regional Office in Harare, the SA Natcom office in Pretoria, and representatives of LDC countries in Africa, in the running of UNESCO projects, and (d) placement of an Africa focus on all UNESCO-funded projects and ensuring that they are youth-friendly, gender-friendly, and interdisciplinary in nature.

The ACEIE, having taken cognisance of the new requirements in both the DTPS and UNESCO MoAs with the UP, amended the four strategic objectives it had originally set itself. These objectives were to formally include the schooling sector as a target group for Information Ethics advocacy, to include UNESCO structures and/or committees in as many of its activities as possible, to keep records of IE research findings, and to use IE awareness events as opportunities to share such findings. For this purpose, the Centre

decided to strengthen the relations it had already established with international higher education institutions and bodies (including the Capurro-Fick Foundation), and to promote the involvement of ACEIE staff on UNESCO, CI and IFAP committees in the RSA.

5.5 Raising Information Ethics awareness in Africa

As was the case in other parts of the world, and as decided in the ANIE Strategic Plan, conferences and training workshops would be the primary means of sensitising the peoples of Africa to the nature of and need for Information Ethics. Other means included the founding of structures (Section 5.4 dedicated to the development of Africa as an 'ethical' macro Information and Knowledge Society; the promotion of Information Ethics research (Section 5.6); the creation of Information Ethics networks (Section 5.4.1); the development of Information Ethics education and training programmes (Section 5.11.1 and 5.11.2), and the infusion of Information Ethics principles into legislation, policies and codes of conduct (Section 5.7.2). Initiatives like these, the purposes they served, and the impact they have had on people's attitudes to and use of information and information communications technologies (ICTs) constitute the focus of this chapter.

The description of these initiatives serves three purposes: in the first instance, it illustrates the growth of information ethics awareness on the continent; in the second instance, it serves as an audit trail of the research methodologies used in this study (Section 1.5); in the third instance, it serves as research data which, when analysed, could be used as basis for the development of a curriculum model for the training of Information Ethics in Africa (Section 6.9). As indicated in Section 1.2.1, this is the primary purpose of this study.

Conferences, regardless of who organised them, served primarily as platforms for debates and/or deliberations on Information Ethics and related issues, and thus contributed to the generation of IE research. ANIE conferences specifically on IE as a concept and/or a way of life, highlighted the opportunities and threats associated with the use of information communications technologies (ICTs). Conferences organised by other parties – international bodies / organisations, private sector companies, government departments and/or institutions of higher learning, focused either on e-governance or on

the development of African Information and Knowledge Societies (Section 5.7), the use of ICTs for different purposes and specific IE issues (Section 5.8 – 5.11).

The same pattern presented itself in workshops. Whereas workshops run by other parties were used to sensitise target groups to the application of Information Ethics in the specific context of the organising party, ACEIE workshops were primarily used to highlight the opportunities and threats associated with the use of ICTs and the Internet, to train people as IE agents or ‘missionaries’, to support the design and delivery of higher education curricula, and to create an awareness of ANIE and ACEIE activities and products. Sometimes linked to conferences, sometimes run in their own right, workshops were also used to complete existing ANIE projects, to equip academics and government officials with the knowledge and skills they needed to effectively and efficiently execute their specific (sectoral) Information Ethics responsibilities, and to get ‘buy-in’ for specific ANIE/ACEIE projects from relevant role players and/or stakeholders.

Although the generic purpose of all the ACEIE workshops was to increase awareness of Information Ethics, their specific purposes were different, as well as their duration, format and content. One/two-day workshops, were of three kinds: pre-conference (attached to ANIE conferences), provincial (run in the RSA), and regional (run in the rest of Africa). Pre-conference ANIE workshops served a dual purpose. Firstly, they were used to give institutions participating in the 12-university curriculum project the opportunity to report on progress made in the design and integration of Information Ethics themes, and the design and implementation of stand-alone IE modules or programmes at their institutions. Secondly, they served as opportunities to train lecturers at these institutions in the design and delivery of academic IE offerings.

Provincial and short regional workshops typically focused on Information Ethics in practice, whereas pre-conference workshops and longer regional workshops focused on training. The key objective of RSA provincial workshops was to persuade higher education institutions to introduce IE teaching at their institutions and to sensitise governments and communities to the opportunities and threats associated with the use

of ICTs as well as the role of Information Ethics in this regard. To this purpose, they covered (albeit rather cursorily) different interpretations of IE, the principles informing them, and the different ways in which these principles could be applied in the use of ICTS, e-learning, e-governance, information management, policy development, and the development of Africa as an information and knowledge society.

While reflecting the specific needs of the country/region concerned, regional workshops run in the rest of Africa were typically aimed at raising awareness of Information Ethics, highlighting the relevance of Information Ethics to stakeholders and role players, involving academics and policymakers in discussions on IE as a critical policy component, developing and delivering IE education/training programmes, and increasing or enhancing Information Ethics research and teaching. Presentations at all of these workshops were, as a rule, followed by participant discussions of and/or comments on the issues addressed in the presentation concerned. The workshops were typically concluded with a call on participants to start local ANIE chapters in their own countries and with the distribution of IE resource materials developed by the ANIE or ACEIE for use in their own Information Ethics endeavours.

Informed by the need not only to raise awareness of Information Ethics, but also to guide workshop participants in the ethical and accountable use of ICTS, keynote addresses at regional workshops usually included a description or summary of the role that UNESCO and the WSIS played in the formulation of international guidelines on the ethical use of information in the digital age, as well as the steps the ANIE and the ACEIE had taken to promote IE in Africa. Subsequent presentations focused on different interpretations and applications of IE, guidelines for ethical thinking, or case studies illustrating the practical application of ICTs and IE in the lifeworld and context of the specific target group. Presentations were every time followed by plenary discussions on issues raised in the papers, anticipated challenges in implementing suggestions made, and ways of addressing these. Workshops were typically concluded with the distribution of ANIE/ACEIE resource material and appeals to start local ANIE chapters in their own regions/countries.

While the first day or two of longer, multi-day workshops resembled the shorter workshops, the last three or four days were devoted entirely to academic discussions and, in particular, to discussions on the implementation of the Information Ethics curriculum framework, localised curriculum design, teaching/learning resource needs, IE research and other academic matters. Specific workshop objectives included (but were not limited to) the creation of IE awareness; the ‘unpacking’ of its importance to stakeholders and role players; topical discussions on IE-related matters; the practical involvement of academics and policymakers in IE-related discussions; the coordination and interpretation of IE policy developments; enhancing IE research and teaching; and last but not least, listening to the Information Ethics needs of participants at the different workshops. Furthermore, when academics were present at workshops, the development and roll-out of the IE university curriculum was always on the programme agenda.

In 2013, following increased attention paid to the need of other sectors of society (schools, communities, etc.), the focus, purpose and nature of IE advocacy campaigns, as well as the target groups changed. In addition to promoting IE research and the continued teaching of Information Ethics at university level, the development of training programmes and materials targeting communities, school teachers and learners increasingly became the primary focus of IE advocacy activities. Since these sectors were not concerned with the theories underpinning Information Ethics or unduly alarmed about the erosion and/or preservation of African culture, but rather focused on the social, economic and educational opportunities created by ICTs, post-2013 advocacy activities primarily concentrated on these and on the risks associated with their use for these purposes.

The attendance of local and international IE-related meetings (see Figure 15) by one or more ACEIE staff members was regarded as critical to the sustainability and strengthening of the Centre’s national and international relationships.

<i>Type of meeting</i>	<i>Dates</i>	<i>Place</i>
UNESCO / WSIS meetings	25 – 27 February 2015	UNESCO Headquarters in Paris, France
UNESCO general meeting	November 2013	Paris, France

UNESCO-ACEIE meeting	November 2013	UNESCO Headquarters in Paris, France
WSIS +10 Summit	February 2014	Paris, France
Regional IFAP meeting	28 April 2014	Harare, Zimbabwe
SA National IFAP meeting	15 September and 10 October 2014	Pretoria, RSA
IFAP pre-conference workshop & provincial conference	26 – 27 March 2015	Eastern Cape, RSA
UNESCO IFAP meeting	26 May to 3 June 2016	Paris, France

Fig: 15 Critical IE committee meetings

The attendance of meetings like these resulted in, among others, an awareness of the ANIE and ACEIE and their IE and/or Digital Wellness activities, the appointment of the ACEIE Director as chairperson of the South Africa IFAP committee; the choice of the ACEIE as the national IFAP organisational office; UNESCO sponsorship for a number of ACEIE projects and opportunities to attend, present papers and run workshops at UNESCO and IFAP events (IE Teaching in Africa: 2012 to 2014).

The description of IE/digital wellness activities that follow next are in effect summative reports. They firstly indicate what was done when, where, why and by whom. Secondly, they indicate, albeit implicitly, which Information Ethics issues have up to this point received the most attention. For this purpose, the reports and the activities described in them are not presented chronologically, but according to theme. This decision was made on the assumption that thematic summaries are better suited to the creation of a holistic IE advocacy picture than to a chronological descriptive list of activities.

5.6 Information Ethics and research

The importance of IE research towards valid, reliable and authentic IE advocacy was not only emphasised by UNESCO, academics and policy developers, but also by the private sector, the education sector, and governments across the world. Views on the nature, function and impact of Information Ethics on the behaviour of ICT users, the opportunities and risks associated with the use of ICTs, the purposes for which people use them, the issues that need to be prioritised, the foci of IE education and training for tertiary and

school education, as well as on governance and community development, are no more than perspectives unless they are supported by research evidence. Information Ethics research is therefore not a 'nice-to-have' adjunct to IE advocacy: it is the foundation on which not only its definition but also its advocacy rests. It was, after all, the absence of African scholars at international IE events and their lack of representation in academic journals that urged academics in other parts of the world to recommend the convening of an international IE conference on the African continent.

That the people of Africa realise and acknowledge the importance of research, is evident from the insistence by conference delegates and workshop participants that research should be conducted on the issues raised at these events. Indications from the issues raised at conferences and workshops on the African continent are that the Information Ethics issues that are regarded as most critical, relate to the restoration of the human dignity of the peoples of Africa, the erosion of corruption at all levels of society, and the development of African countries as Knowledge and Information societies. Much of the IE research conducted on the continent since 2007 has focused on the potential impact of globalisation and a digital culture on society, the preservation and/or resuscitation of marginalised African knowledge and value systems, access to and the accessibility of information for all, the prioritisation of quality education, and the need for IT literacy training. In Africa, therefore, the imperative for IE research is in itself an IE issue.

The commitment of African scholars to promote and engage in research is evident, not only from the fact that IE-related papers at all conferences (irrespective of the themes and/or topics addressed) were research-based, but also in the emphasis placed on Information Ethics at conferences, the increased publication of IE research articles in academic journals, the extent of research that preceded the development of IE programmes and resource materials, and the training of students as IE researchers at higher education institutions across the continent. While all IE conferences either explicitly or implicitly contributed to the promotion of research, one in particular, the 14th Information Science Conference, held at the University of Zululand (RSA) in June 2013 illustrated the extent of this commitment. Not only was one of the panel discussion sessions devoted

entirely to the presentation of research (completed and in progress), but the conference itself was followed by a one-day Information Ethics research workshop for students.

The five students invited to attend the post-conference workshop had, during the course of their Information Studies, been tasked to research a particular Information Ethics issue. The workshop presented them with the opportunity to deliver their mini-research papers to a panel of internationally acclaimed researchers from the USA, Germany, and the RSA. Focusing on the application of Information Ethics in Africa, their papers addressed the following topics: “Scope of Information Ethics”; “The adoption and diffusion of ‘Turnitin’ among Faculty of Arts academics”; “Information access for the disabled in South African universities”; “An undergraduate student’s outlook on research: An Information Ethics Experience”, and “Access to information across rural and urban areas of South Africa”. The panel of expert researchers, having judged the papers, subsequently awarded a *Best Student Paper Award* (funded by the Capurro Fiek Foundation in Europe). It follows that an experience like this might inspire students to develop their research skills further, thus contributing to the expansion of IE as a field of study.

Another conference that implicitly promoted Information Ethics research was the November 2015 UNESCO Conference on Digital Wellness. Aimed, among others, at the collection of research data on stakeholder needs, conference organisers invited representatives from as many sectors of society as possible, including students, to present the results of their research on the needs in the sector they represented with respect to IE, the Information-for-All Programme (IFAP), the international programme for the development of communication (IPDC), policy development, and IE research.

Included in the cohort of delegates were government officials, NGOs, journalists, academics, students, private sector companies, and representatives from various UNESCO structures in Africa. Given the diversity of this cohort, opportunities given for critical reflection sparked lively dialogues not only between academics and policymakers, but also between delegates representing different sectors.

The key contribution that these conferences made to the promotion of research in general, and to IE research in particular, was the opportunities they created for budding and novice researchers to interact with and be mentored by experienced researchers (Section 5.8). The experienced researchers, in turn, had the opportunity to showcase their research in front of their fellow researchers. In doing so, they sensitised their fellows to new research problems or research methods, and thus contributed not only to new knowledge, but also alerted fellow researchers to the possibility that Information Ethics might have the potential to become a field of study in its own right. At the same time, they might have inspired novice researchers not just to continue with research but to do so for the general good. Specific reference was thus made to the contribution that Information Ethics could make in the development and sustainability of Africa as an ethical and responsible information and knowledge society.

Other conferences and workshops that focused specifically on Information Ethics research and/or the ethics of research were the April 2013 Research and Quality Assurance Conference in Johannesburg (RSA), two UP-INTEL Undergraduate Student Conferences (May 2013 and 2014), and the ANIE Curriculum Research Workshop, run at the UP February 2011. The importance of IE research was, however, also emphasised at government workshops and meetings. A case in point was the Practitioners Workshop on ICT in Education in Pretoria (10 April 2014). On this occasion, workshop participants emphasised the need for independent research towards the development of a government framework or set of guidelines for the optimal use of ICTs in schools (Workshop Report, 2014:8). This recommendation was based on their conviction that, regardless of lessons learnt about policy and practice during the past decade, emerging challenges regarding the coordination, integration and packaging of e-learning programmes necessitated research towards the development of an integrated e-learning implementation framework (Workshop Report, 2014:8).

One of the ways in which the ANIE/ACEIE wanted to promote research was through the publication of research articles in academic journals. Since there was no journal in Africa dedicated to IE research, delegates at the 2010 Botswana conference (Section 5.11.1)

suggested that the ANIE should launch one. Notwithstanding many negotiations in this regard, this did not happen. Consequently, the ANIE approached the editors of an existing Information Science journal – *INNOVATE* – with a request to consider the inclusion of IE research articles in one or more of its editions. In addition to the random publication of IE articles that satisfied the criteria set by the editors, the July/August 2013 edition of this journal was dedicated entirely to research articles on Information Ethics in Africa. The fourteen peer-reviewed articles that appeared in this edition were subsequently used as a resource by students wishing to conduct research on IE-related matters.

Research was also integral to the development of the ANIE / ACEIE Concept Book, Africa Reader (Section 5.12.1), and Handbook (Section 5.12.3), as well as to the development and roll-out of the IE curriculum framework for universities (Section 5.11.1) and the Digital Wellness Toolkit for schools and communities (Section 5.11.2). The ANIE played a seminal role in this regard. It did not only connect international IE researchers and government officials with one another, but also encouraged the creation of local ANIE chapters in different African countries, thus enabling local academics and government officials from various countries to establish participatory development relationships.

5.7 Teaching Information Ethics as part of development in Africa

Given the context in which Information Ethics was first highlighted at the WSIS, namely the development of Information and Knowledge Societies, initial IE advocacy events on the African continent were aimed at the development of African countries as information and knowledge societies. The first of these events was the *IDC Euro-Mediterranean Seminar*, held in Marrakech (Morocco) in October 2010. Since it focused specifically on the EU-Africa Relationship, it had the identification of factors critical to the sustainable development of new and emerging knowledge communities as aim. Although not explicitly highlighted as Information Ethics issues, the following three factors were identified as most critical in this regard: the availability of information and information sources (Okoruna, 2004; Van Dijk, 2005; Ajulu & Bester, 2005; Britz et al., 2006); access to information and information sources (Van Dijk, 2005; Ajulu & Bester, 2005; Britz et al.,

2006), and the influence that infrastructure has on such availability (Van Dijk, 2005; Coertze & Coetzee, 1996). As indicated in (Section 2.6), they were also key IE issues.

Information Ethics was, however, explicitly addressed at the next event, the 3rd International ICST Conference on E-infrastructure and E-services for developing countries, held in Zanzibar (Tanzania) in November 2011. In this instance, the ANIE Director was invited to do a poster presentation on ways in which not only ICTs, but also IE, could support and sustain development in Africa. He argued that, unless the requisite information monitoring mechanisms were in place, and unless communities were both cognisant of them and committed to their ethical utilisation, the opportunities that ICTs presented for sustainable development would be negated. Using this claim as his point of departure, the ANIE Director highlighted the role of Information Ethics in this regard, explained the term to delegates, indicated where it originated and what UNESCO and the ANIE, among others, were doing to create an awareness of IE in Africa. He concluded his presentation with an invitation to delegates not only to join the ANIE, but also to create 'local' ANIE chapters in their own countries.

These two international events were followed by a number of workshops dedicated to the training of African governments on e-governance, policy writing, and community development. A description of these events constitutes the focus of the subsections that follow.

5.7.1 e-Governance training

Initiated at a UNESCO steering committee meeting in Karlsruhe (Germany) in March 2008, an e-governance training event was jointly sponsored by UNESCO and the RSA government. Attending the meeting were UNESCO members, government officials from a number of African countries, and ANIE Board members. A key outcome of the meeting, which focused on the nature and scope of e-governance training in Africa, was the committee's decision to develop a workbook or toolkit on e-governance in Africa. In developing the toolkit – consisting mostly of generic guidelines on the use of digital technologies for development, human resource management, and/or other operations –

the committee believed that it was developing a document that could serve as the basis for e-governance training in Africa.

The first draft of the e-governance toolkit was presented for discussion and comment at an executive UNESCO seminar on e-government in sub-Saharan Africa in August 2008. In addition to the e-governance guidelines on e-interactions between governments, citizens and the business sector, the toolkit included an 8-step action plan towards e-governance maturity (see Figure 15) and an e-governance model that could be used to track progress towards e-governance maturity.

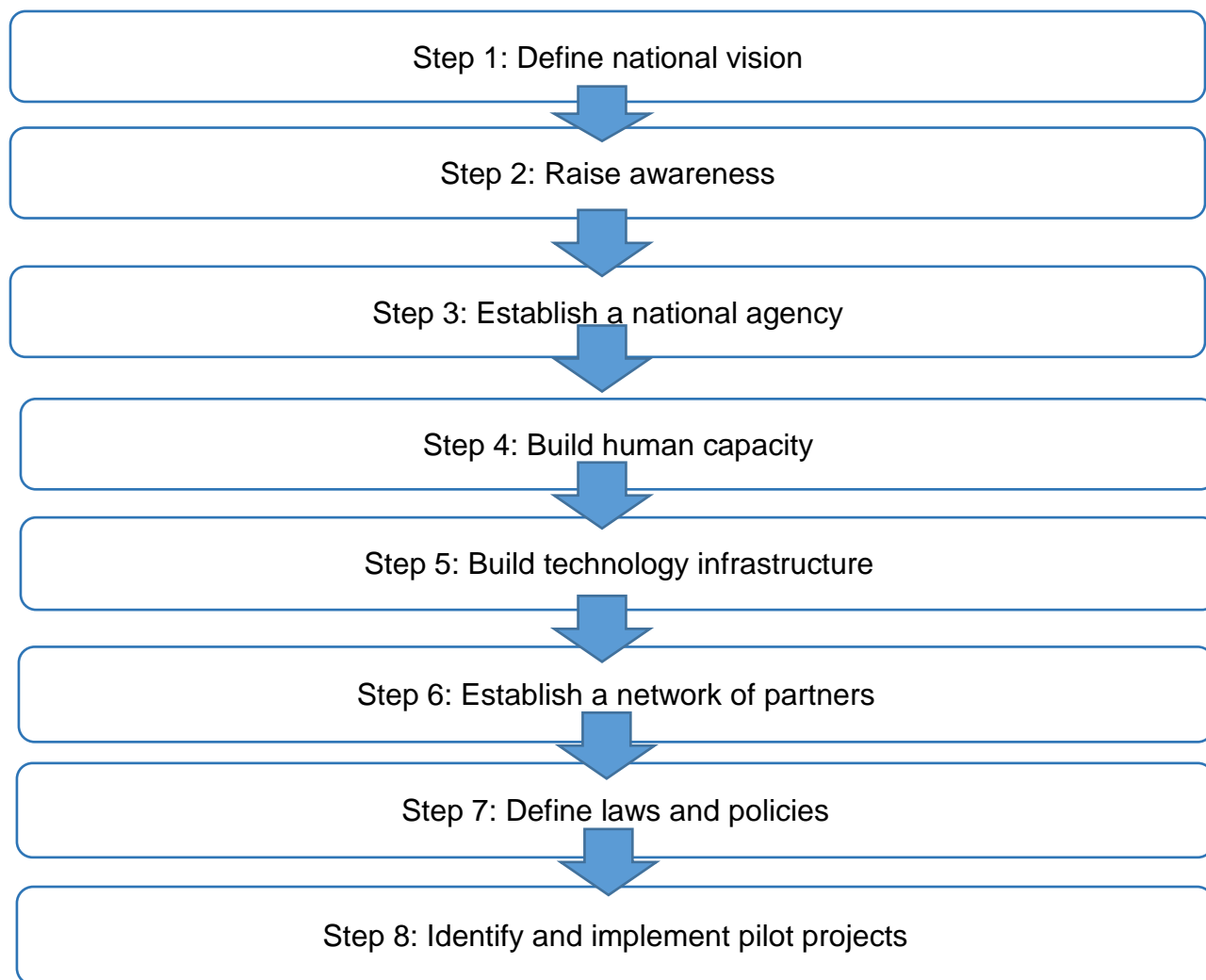


Figure 15: The 8-step action plan towards e-governance efficiency

Following deliberations at this seminar, the toolkit was contextualised in terms of the unique developmental challenges that African governments faced. These challenges involved the imperative for inclusivity on the one hand, and on the other hand the tensions related to differences between African traditions and the potential threats that the imposition of a digital culture posed to the resuscitation of indigenous knowledge and value systems in Africa.

The amended toolkit was subsequently used as basis for the first UNESCO workshop on e-government in sub-Saharan Africa. Hosted in Magaliesburg (RSA) in February 2009, it was attended by government officials from 15 African countries. Having given an overview of global perspectives on IE, workshop facilitators used case studies to illustrate the role that ethical reasoning played in ensuring the effective and ethical utilisation of information technology for governance purposes. Information Ethics issues focused on included access and accessibility; intellectual property; freedom of expression and censorship; privacy versus public need; transparency versus secrecy; rights, responsibilities and accountability, and trust. Using insights gained during the course of these presentations and the discussions following them, workshop participants who worked in country-related groups had to draw up a list of e-governance challenges in their own countries and suggest ways in which each of these could be overcome.

A general consensus emerged from the workshop that African development should not only be aimed at the strengthening of private and public institutions, but also at improving the quality of life of all citizens. To this purpose, participants suggested that governments should prioritise education, collaborate with other countries or regions facing challenges similar to theirs, and use pilot projects as a means of conserving limited human resources. They recommended, moreover, that a single, comprehensive and authoritative, Africa e-governance clearing-house should be established to collect, organise, index, translate, and preserve information resource management tools and techniques. To ensure that professionals, policy makers, educators and trainers had access to such information, the clearing-house should have its own website, created and regularly updated by clearing-

house personnel or, if they lacked the expertise to do so, by outside parties or contractors with the requisite skills.

Conferences and workshops not focusing specifically on e-governance, but touching on issues related to these, were the 14th Information Science Conference, the annual FW de Klerk Conference, the Southern African region multi-sectoral meeting, four UNESCO Southern Region IE workshops, the RSA Development Assistance Management Conference, and the 5th ANIE conference.

The first of these, the Information Science Conference, held at the University of Zululand (RSA) in September 2013, was attended by academics who taught and/or conducted research on information science topics, students who studied information sciences, and ANIE representatives. Discussions related to the development and governance of information and knowledge societies respectively focused on ethical issues related to the emerging field of big data and institutional repositories; the role of Information Ethics in innovation; inter-cultural aspects of digitally mediated privacy and freedom; the ethical dimension of Indigenous Knowledge Systems, information access, information poverty and the digital divide.

Following his presentation on the nature, purpose and importance of IE in the development of Information and Knowledge Societies at the annual conference of the FW de Klerk Foundation in Cape Town in February 2014, the ACEIE Director was requested prepare a report highlighting this issue. This report was subsequently submitted to the SA Parliamentary Portfolio Committee of Communication for consideration. Once they took cognisance of this report, the SA Department of Telecommunications and Postal Services reviewed the White Paper on e-Education.

In addition to these events, four workshops forming part of a UNESCO Southern Region development project were run in 2014/2015. The four countries targeted for Information Ethics training – Swaziland, Namibia, Lesotho and Mozambique – were not part of any IE awareness events or activities at that stage. The first two workshops were run in Mbabane

(Swaziland) and Windhoek (Namibia) in August 2014, the third one in Maseru (Lesotho) in October of the same year, and the fourth one in Maputo (Mozambique) in 2015. Aimed at engaging stakeholders, policy makers, academics and significant role players in conversations on the meaning, nature, value and application of IE, facilitators gave a brief overview of the origin and development of IE. They also explained the concept, described the role that ICTs could play in Africa's development, and highlighted the opportunities and risks associated with the use of ICTs. Moving on to the use of IE as a means of protecting themselves against ICT and internet risks, facilitators taught workshop participants three 'safety'/'security nets': the TL10 Traffic Light that could be used in the evaluation of online information; the MOVE technique for ethical reasoning or decision making, and the RISE principles that should guide ICT users' conduct on social media platforms.

Since the workshops formed part of a UNESCO-sponsored project, and were conducted in accordance with the UP-UNESCO agreement, all of them were hosted by the UNESCO Commissions based in these countries, and representatives of the commission concerned were included in the cohort of academics and government officials presenting papers and/or acting as facilitators at all of them. A key outcome of the collaborative presentation and facilitation of these parties was the subsequent forming of university and commission interest groups.

The RSA Development Assistance Management Conference took place in November 2016. Focusing on the critical role of access to information in the development and sustainability of Information and Knowledge societies, the conference was aimed at ensuring that African governments assume serious responsibility for providing information on sustainability issues (climatology, food security, and demographics, for example) to all their citizens, irrespective of their socio-economic status and IT literacy levels (Section 5.7) for conference details.

The 5th ANIE conference was held in Pretoria in 2017. Included in a series of round-table discussions, were seven topics that focused specifically on IE issues related to e-

governance: Information Ethics in Africa; Globalisation and cultural diversity; Development and poverty; E-government, Food and health; IT Infrastructure in Africa; and Information for All.

While not a direct adjunct of e-governance, the development and implementation of policies on the use of digital technology and the need to include IE principles in these were also highlighted as critical issues at the majority of events focusing on the sustainability of information and knowledge societies. The focus of the next section is therefore on the development and use of policies, and the imperative to ensure that they include and/or advocate a commitment to Information Ethics as critical to such sustainability.

5.7.2 Information Ethics and policy development

Following the publication of the e-learning policy of the SA Department of Basic Education (DBE) in 2004, and its review by the SA Department of Telecommunications and Postal Services in 2014, the importance of Information Ethics as part of ICT literacy at schools was highlighted at a Practitioners' Workshop on ICT in Education. Jointly organised by the DBE, the HSRC (Human Sciences Research Council), and the DST (Department of Science and Technology), the focus of this workshop was on progress made with the implementation of e-learning at schools. Following the presentation of progress reports by attending parties, workshop participants indicated among others the need for a research-based policy framework. The latter not only had to indicate how lessons learnt about the relationship between policy and practice could be used to ensure the optimal use of digital technologies for e-learning at schools, but also had to emphasise the need to use such technologies ethically and responsibly (Practitioners' Workshop Report, 2014:7/8).

The first workshop that focused specifically on Information Ethics as a critical policy component was run in response to a request for the ACEIE's assistance from the SA Civilian Secretariat for Police. Held in Kempton Park (RSA) in August 2014, the primary objective of the workshop was the development of a research-based framework for the

prevention and/or management of cyber-crime. The workshop was jointly organised by the Civilian Secretariat for Police, the National Science and Technology Forum and the ACEIE, and it served a triple purpose. Firstly, it was aimed at advising the Civilian Secretariat for Police, which serves as an advisory body to the Minister of Police, on technical, policy and research matters related to cyber-crime management. Secondly, it was aimed at deepening participants' understanding of the link between personal awareness, digital safety and ethical behaviour on the one hand, and the link between unethical personal behaviour and cyber-crime on the other. In the third and final instance, it was aimed at developing research-based guidelines, procedures and systems for the prevention and/or control of cyber-crime on the continent (ACEIE 2014: Civilian Secretariat for Police Digital Wellness Workshop report).

To this purpose, the three sessions comprising the workshop were devoted to presentations and discussions that dealt respectively with government perspectives on cyber-crime, the impact of cyber-crime on civil society and business, and the latest research on these and other IE and internet issues. Researchers attached to the ACEIE and academic institutions were invited to share with all present at the workshop their research findings on digital security, cyber-crime and crime prevention policies – with specific reference to human trafficking, drug trafficking, internet terrorism, and the vulnerability of banks and businesses (ACEIE 2014: Civilian Secretariat for Police Digital Wellness Workshop report).

A key outcome of the workshop was a decision by the Secretariat of Police to use the information shared and insights gained at the workshop to develop generic guidelines, procedures and systems for the prevention and control of cyber-crime. Once done, the guidelines would be used as a frame of reference for the development of a sustainable research-based Africa policy structure that could serve as platform for deliberations by the African Union on cyber-crime on the continent (ACEIE 2014: Civilian Secretariat for Police Digital Wellness Workshop report).

The importance of integrating Information Ethics principles with government policies was once again highlighted in 2016 at a series of community workshops at sites identified for the piloting of the SA government's National Health Initiative project. Since the project entailed the digital linking of government institutions responsible for the delivery of different services in these districts to ensure that communities would have access to information on these services, community members had to be trained in the use of these technologies, both in terms of technical (IT) skills and the ethics involved in accessing, disseminating and/or using such information (See Section 5.7.3 for more information on these workshops).

In February 2016, motivated by the enthusiasm of community members who had attended these workshops, the ACEIE, in consultation with the DTPS, ran a national e-strategy policy development workshop to obtain academic input on policy development. Two invitations to the ACEIE Director resulted from this workshop: one to deliver an address on cyber-security, cyber-crime and POPI (Protection of Private Information) at a Lex Informatica Business Breakfast meeting, and another to present the ACEIE/INTEL Digital Wellness Toolkit to representatives of the corporate and government sectors at a Cyber Security Launch held at the CSIR in Pretoria (RSA). The outcome of these presentations, both delivered in October 2016, was a commitment by attendees either to initiate a review of their existing company policies to ensure that they addressed IE issues, or to discard them in favour of the development of entirely new IE-oriented policies.

5.7.3 Information Ethics and community development

Whereas the development of communities was implied in demands by government representatives who attended e-governance workshops (Section 5.7.1) the thrust towards raising awareness of IE (or digital wellness, as it was referred to in this context) came from different sectors of society – governments, organisations concerned with the promotion of science and technology, and traditional leaders. Government representatives attending e-governance workshops were adamant that their governments should prioritise the improvement of their citizens' quality of life as an adjunct to the strengthening of private and public institutions. It was also they who recommended the

use of pilot projects to conserve limited human resources. However, the Society for the Advancement of Science in Africa (SASA) was the first to call for raising IE awareness in communities. An international conference in Polokwane (RSA), held in April 2013 and organised by SASA, was the first to highlight the need for community awareness about the role that digital technology could play in ensuring access to information for all, and, by implication, the first to indicate the need for IE/digital wellness training.

The South African government, committed to ensuring that information critical to the delivery of services was also available to vulnerable communities, especially those in rural areas, embarked on a country-wide national health initiative (NHI). Aimed at improving government service delivery in vulnerable communities, thus contributing to improved health, the project entailed the digital linking of government institutions (hospitals, clinics, educational institutions) in the identified regions/districts/municipalities to ensure easy access not only to the services rendered by these institutions, but also to information on these. It follows that, in order to derive maximum benefit from this initiative, targeted communities had to be informed about the project, what it entailed and how they could gain access to the services and related information. Implied in these imperatives was the need for NHI community training workshops.

The DTSPS was tasked with the piloting of this project and, being well aware of the importance of Information Ethics in the use of digital technologies to access information, decided to also sensitise communities to the role that IE played in digital wellness as part of the project. To this purpose, its renewed MoA with the UP (Section 5.4), stipulated that the ACEIE should be involved in the piloting of the NHI project. In accordance with this stipulation, the DTSPS and ACEIE therefore co-facilitated seven workshops in districts identified as pilot sites in the 2015/16 period: two each in the Eastern Cape Province – Mthatha (March 2015 and 2016) and Lusikisiki (April 2014 and 2016); two in the Limpopo Province – Thoyandou (September and November 2015); and three in the Northern Cape Province – Colesberg (February 2016) and De Aar (March and April 2016).

Aimed at alerting participants to the opportunities for healthier living created by the NHI, the emphasis in NHI workshops was, therefore, on community health and wellness, with specific reference to the contribution that the NHI project could make to ensure that the community would access information on government services in this regard. While the content covered in the workshops was basically the same, the methods used to do so were, as far as possible, harmonised with the demographics, literacy and digital competence of specific target groups. In order not to alienate or confuse participants, the emphasis was seldom on Information Ethics as a concept or theory; rather, it was usually referred to in terms of the contribution it could make to digital wellness. Using the Digital Wellness Community Booklets (Section 6.8) as basis, facilitators used case studies and role play to explain concepts, to demonstrate the possible consequences of irresponsible ICT user behaviour, and to teach them ways of safeguarding themselves, their fellow users and their devices against possible harm.

This approach was particularly effective not only in raising awareness of information ethics but also in equipping workshop participants with the knowledge and skills to subsequently run Information Ethics workshops in their own communities. The same approach was therefore used in August 2015, at a workshop on Foetal Alcohol Syndrome in Carnarvon (Eastern Cape). While much of the content covered in the digital wellness session was the same as that of the NHI workshops, the emphasis was on the benefits associated with the responsible accessing and use of information on Foetal Alcohol Syndrome (FAS), which is a major problem in the Northern Cape.

One of the issues related to national health, namely food security, was the focus of a seminar on Pulses and Food Security, jointly organised by the National Science and Technology Foundation, the South African departments of Science and Fisheries, and a private sector company called AGT Foods Africa. Held at Emperor's Palace in Kempton Park (RSA) in June 2016, the seminar paved the way for a conference on Integrated Environmental Understanding of Food Security in Africa. Jointly organised by the Institute for Development Assistance Management and the ACEIE, the emphasis at this conference was not on food security per se, but on the factors that could either contribute

to or undermine it. The conference was attended by academics, government officials, agriculturalists, private sector and United Nations representatives, all of whom had different views on the specific factors (climatology, demographics, information technology, etc.) that had the greatest impact on food security. Emerging from deliberations on this issue, however, was eventual consensus that, regardless of the extent of their influence, all of these contributed to a better understanding of the environmental factors influencing food security in Africa and, hence the need to manage them in an integrated way. Especially relevant to such management was the ethical generation and processing of information, and the imperative to make such information digitally available to all concerned.

The role of African governments to ensure that their citizens not only had access to such information but also the technological skills to do so, was again raised at the 5th ANIE conference in February 2017. Held in Pretoria under the auspices of UNESCO, it was supported not only by ANIE's historic partners – the DTPS, the Capurro-Fiek Foundation, the University of Wisconsin Milwaukee, and the University of Pretoria – but also by newcomers like the ICE and IFAP. Structured in the form of a series of round-table discussions, the focus was on Information Ethics issues related to the development of Africa as an ethical Information and Knowledge Society (IKS). What emerged from these discussions was the imperative to consider not only the 'big picture', but also the details. Put differently, the development and eventual sustainability of Africa as a macro-IKS would be a pipe-dream unless digital technology was used for 'ethical' development purposes – key among which was the alleviation of poverty. According to discussants, sustainable IT infrastructures, net neutrality, information for all, IT literacy, food and health (all of which are Information Ethics issues), were critical to poverty alleviation; hence the need to vigorously promote an awareness of and commitment to its principles and application.

The University of Pretoria, via its Department of Information Science, also made a contribution to community development in this regard. By law, South African universities have a tripartite mission, namely to teach, to conduct research, and to do community

service. All enrolled students are therefore required to participate in at least one community service initiative per year. Since one of the units in the Information Science programme is Information Ethics, students enrolled in this programme were required to teach Digital Wellness to communities of their choice by using the Digital Wellness Toolkit Booklet for Communities (referred to in Chapter 6) as one of their resources.

5.8 Information Ethics and cyber crime

Cyber-crime was an Information Ethics issue that was addressed either implicitly or explicitly at most conferences and workshops on IE awareness and/or digital wellness. In addition to the afore-mentioned Police Workshop (Section 5.7.2), six events focused specifically on cyber-crime, and three addressed it as part of conferences focusing on more generic Information Ethics issues. Four of the six events dealing solely with cyber-crime were Lex Informatica events, one was a UNESCO conference, and the other, the UP-INTEL Student workshop. A number of other conferences and workshops did not focus on cyber-crime per se, but either included it in its programme or referred to it by default as part of discussions on other IE issues. Included in these were an Information Science Conference on Information Management (Section 5.6) as well as a SCECSAL and ANIE conference on the use and abuse of social media platforms (Section 5.9).

The first Lex Informatica Conference on Cyber-crime, Information Ethics and the Law, held in Pretoria (RSA) in April 2013, was jointly organised by Snail ka Mtuze Attorneys and the ACEIE. Attended by academics, post-graduate students, legal practitioners and representatives of private sector companies from across Africa, it focused on the advancement of Cyber-law and Information Ethics in Africa and globally. Its four themes – Cyber-law, Forensics, IT Security, and Information Ethics – were aimed at ensuring an awareness of both legal and ethical perspectives on cyber-crime. Issues related to these themes – information integrity; intellectual property; the abuse of social media (online defamation in particular); tensions between the right to privacy; the need for state security – were examined from both these perspectives on all three occasions. A key lesson learnt from these discussions was that African and global ethical perspectives on these were markedly different.

Although the purposes served by the Lex Informatica Business Breakfast meeting (organised by Snail ka Mtuzi Attorneys) and the Digital Wellness and Cyber-Security Launch (organised by the CSIR) referred to in the previous section were different from that of the conference, some of the issues discussed at the Conference were raised again at these events.

Another event focusing specifically on cyber-crime was the United Nations (UN) workshop on Effective Cybercrime Legislation in Eastern Africa. Held in Dar-es Salaam, Tanzania, in August 2014, it was co-organised by the African Centre for Cyberlaw and Cybercrime Prevention (ACCP), the United Nations African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFR), and the Council of Europe. Aimed at the training of East African governments, attendance was restricted to the Ministries of Justice, National Prosecuting Authorities, Cybercrime and other law enforcement agencies in these countries. Informing the nature and content of the workshop were concerns about (a) the unsuitability of the ad hoc nature of support that regional, national, and international organisations rendered to long-term legislative reforms in Africa; (b) gaps in and/or inconsistencies of legislation with international standards; (c) the prioritisation of e-commerce legislation rather than criminal justice response; (d) insufficient safeguards and conditions regarding procedural powers, and (e) the lack of reinforcement capabilities and strategies.

Keynote addresses delivered on the first day of the workshop focused on international perspectives expressed at the Budapest Convention; cyber-crime and electronic evidence; cyber-crime legislation, procedural law and investigative powers; the nature and effectiveness of existing cyber-crime legislation; criminal law provisos, and the use of legislation in force in East Africa. Using case studies as basis, keynote speakers analysed legislative powers like 'search and seizure', indicating available safeguards aimed at the limitation of such practices. During the breakaway sessions following presentations, workshop participants had to (a) prepare an outline of challenges their countries faced in the development and enforcement of cyber-crime legislation; (b)

identify and discuss the requisite technical assistance to overcome these challenges; (c) indicate the steps that they believe should be taken to ensure an effective criminal justice response to cyber-crime and electronic evidence, and (d) draw up a list of recommendations for the development/revision of cyber-crime legislation and practices appropriate to their particular countries.

In addition to these events, which targeted people who were either practising or teaching law, were two Information Science events. The first one was the 14th Information Science Conference, held in Zululand (RSA) in September 2013. Included in its programme was a slot on Cyber-Ethics, Cyber-Law, Internet Ethics and Computer Ethics. Since the target group of the Conference was people involved in the teaching of Information Science and librarians at institutions of higher education, the legal issues discussed were either related to these activities or approached from this angle. More specifically, the focus in this slot was on the manifestation of cyber-crime in the use of ICTs and the internet, the possible reasons for its occurrence, and pro-active steps that could be taken to minimise or prevent its occurrence.

The second event, a Safety Awareness Day, targeted first-year Information Science students. Held at the University of Pretoria in October 2014, and sponsored by INTEL, this event was specially organised to give UP students the opportunity to showcase short videos on cyber safety which they had to shoot as one of their Information Science assignments. Not only did this give these students the opportunity to share their knowledge and perspectives on cyber-crime in a creative way, but it also sensitised the proponents of Information Ethics to an alternate advocacy strategy. In addition, because representatives of the South African National Commission and the Film and Publications Board (FPB) were invited to judge the videos to decide on a winner, they became ipso facto members of the IE advocacy movement.

References to cyber-crime at other conferences, especially those focusing on social media (Section 5.9) formed part of concerns expressed about the misuse and abuse of ICTs and social media platforms. At the 2014 ANIE conference in Kampala (Uganda), for

example, cyber-crime – identity theft in particular – was mentioned as one of the cross-cutting IE themes. Consequently, recommendations on how to address the irresponsible use of ICTs and social media platforms typically included either training in the responsible and ethical use of ICTs or the promulgation of new/stricter legislation and the prosecution of offenders. Since there was no guarantee that legislation in this regard would not pose a threat to citizens' fundamental rights to privacy, freedom of speech, and access to information, the teaching of Information Ethics, particularly at university level, was also considered as a prevention strategy; one which, according to a large percentage of delegates, might be a 'safer' and more 'democratic' option.

Another conference at which cyber-crime was addressed in two separate round-table discussions was the 5th ANIE conference, held in February 2017 in Pretoria (RSA). At one of the 'round tables' the focus was on the relationship between cyber-crime and cyber-security; the other dealt with a specific cyber-crime that included biometrics.

5.9 Information Ethics and Social Media

Given the rapid increase in the use and abuse of social media in Africa, a number of conferences and workshops focused specifically on the opportunities and threats associated with their use. The first of these was a workshop for journalists on *IE and the Media*. Aimed at determining the role that the media in general could play in promoting the ethical generation and dissemination of information, it was run in Groblersdal (RSA) in August 2011. Organised by a group of journalists who were concerned about the perceived threats to press freedom in pending media legislation in the RSA, it afforded the ANIE Director the opportunity to highlight the potential impact of media reports on society's perceptions of the ethical dimensions of their life-worlds. He therefore urged them to ensure that the information they disseminated through the media was accurate and unbiased, thus making a difference not only to the standard of reporting but also in their readers' perception of what is ethical and what is not.

The first event of note that focused specifically on the ethics of social media use in Africa was an international SCECSAL Conference held in Nairobi, Kenya, in June 2012.

Attended by a mix of university lecturers, secondary school teachers, librarians, representatives from parent-teacher associations, and information technologists, it was aimed at sensitising those present to the opportunities and dangers inherent in the use of social media and the need to raise public awareness on the nature of and need for Information Ethics.

The impact of social media on society was also the focus of 3rd International ANIE Conference in Africa. Taking place in Pretoria (RSA) in September 2012, this conference was aimed at creating an awareness of the role that Information Ethics could play in assuring justice and human dignity in information societies. Focusing on the responsibility of African governments in this regard, it emphasised the role that IE could play in globalisation, development, media legislation and education in Africa, and the imperative for extensive research in this regard. Breakaway group discussions therefore focused on these themes, and delegates were given the opportunity to deliver papers and engage in discussions and debates on related topics (see Table 1).

IE Themes	Related Topics
IE and globalisation	<ul style="list-style-type: none"> • Globalisation versus public Information Ethics from an African perspective • Integrity Management of Information for decision making in local government
IE and social media	<ul style="list-style-type: none"> • Child protection and social media • Ethical challenges of social media • Information Ethics and the social media: An LIS educationalist view • Challenges of social media in LIS Ethics in Africa • The Ubiquitous Impact of Social Media: The Good, The Bad and The Ugly • Ethical issues arising from social media use by libraries
IE and the law in Africa	<ul style="list-style-type: none"> • The impact of social media laws on privacy and freedom of speech • Are established democracies less vulnerable to internet censorship than authoritarian regimes? The social media test • Trends in transition from classical censorship to internet censorship: Selected countries' overview
Opportunities and challenges in IE research	<ul style="list-style-type: none"> • Challenges and supervision of undergraduate research – case study • Opportunities of social media research in Africa
IE and social development	<ul style="list-style-type: none"> • Social exclusion
IE teaching and learning	<ul style="list-style-type: none"> • Ethical dimension of social media in teaching and learning at the university • Opportunities of social media teaching in Africa

	<ul style="list-style-type: none"> • Students' perception on the dissemination of information through social media by university libraries – case study • Social media and Information Ethics awareness in universities – case study • Multi-institutional collaboration: Experiences, methods and techniques to support collaboration between universities in teaching and assessment of professional issues and information ethics • An assessment of the perspectives on Information Ethics and the social media of academic staff at the National University of Science and Technology (NUST), Zimbabwe • Mobile Learning and Information Ethics • Update on the teaching of Information Ethics at the University of Ibadan – case study
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Table 1: Breakaway group themes and topics

The next event, a public/private sector workshop, focused on Privacy and Social Media, one of the areas that featured strongly in ANIE Conference deliberations. Held in Pretoria (RSA), the workshop was jointly organised by the ACEIE, Vodacom, the Film and Publications Board (FPB), and the DoC. Since it was primarily aimed at sensitising influential role players in the public and private sector to the opportunities for development and improvement created by the use of ICTs (as well as to the consequences of their misuse), keynote speakers and facilitators were not academics, but practitioners representing various industries and the field of Information Technology. The emphasis was thus on Information Ethics in practice rather than on the theories, philosophies and/or value systems that would have been the focus of academic discussions in this regard.

Another conference that focused on more than one IE aspect was the 5th ANIE international conference. Held in Pretoria in 2017, its primary aim was to celebrate the successes achieved in the advocacy of IE during the 10 years since the first ANIE conference. Topics discussed at the conference served as reflections on issues raised at ANIE and other parties' conferences and workshops over the ten years that had passed. These started with a historic overview of the ANIE in terms of its founding, activities and achievements and ended with a session devoted to academic networking and the planning of activities for the next five years. Sandwiched between these two sessions were two and a half days of round-table discussions in a metaphorical 'World Café'. Twelve topics were discussed on these occasions, two in each session, with delegates choosing the 'tables' where topics of particular interest to them were 'on the table'. One

of these was on social media in general, and one on the specific social media issue of privacy and transparency. Two of the round-tables were devoted to social media, privacy and transparency.

Educator and community workshops on Information Ethics and/or Digital Wellness (Section 5.11.2) also focused specifically on the benefits and risks associated with the use of ICTs and the steps that users could take to ensure that their conduct on social media platforms pose no risk to themselves, their devices or other users. Informing all of the events described up to this point, but not explicitly addressed, is knowledge management and the role it plays in assuring information integrity. It is this aspect of Information Ethics that is the focus of the section below.

5.10 Information Ethics and Knowledge Management

While mentioned earlier in respect of IE and cyber-crime (Section 5.8), the 14th Information Science Conference held in Zululand (RSA) in September 2013 was dedicated specifically to reflections on the ethical management of information and knowledge in the digital age. It follows that the delegate component comprised mostly Library and/or Information Science lecturers, students and researchers, librarians and Information Technologists.

While all the papers delivered at the conference and the discussion following their delivery focused on the ethical dimensions of knowledge management, the angles from which these were approached were different. In some of these, the focus was on the generation of knowledge, in others on its processing, recording, dissemination or evaluation (see Table 2) but all related to IE. Papers and discussions on all of these informed the value that 'knowledge workers' attached to research, an element regarded as critical to the assurance of information and knowledge integrity.

<i>Panel theme</i>	<i>Panel topics</i>
	Research ethics at the University of Zululand: Status, trends and challenges

Cross-cutting issues	Inter-cultural aspects of digitally mediated who-ness, privacy and freedom Ethical dimension of indigenous knowledge systems
Cyber-Ethics, Cyber-Law, Internet Ethics and Computer Ethics	An Info-metrics view of the relationship between Internet Ethics, Computer Ethics and Cyber-Ethics Cyber-infrastructure and service: Mainstreaming the margins Power, programmes and ethics in cyber-space: Creating balance through proactive inter-disciplinary approaches A matrix for analysis of ethical dimensions of social networking: A Facebook case study Ethical and legal aspects of storing information in the Cloud: Lessons for information professionals in Africa
Information Ethics applications and implications	The role of Information Ethics in innovation, diffusion and technology adoption Ethical dimensions of e-school success A consideration of teaching Information Ethics at 2 nd year level at the University of Pretoria: A case study of integrating theoretical Information Ethics with practical application Does open access prevent plagiarism in Higher Education? The role of professional associations in Library and Information Science Ethics education Information seeking behaviour in the academic environment: A study of information sector entrepreneurship in Lagos State Information literacy programmes in selected Nairobi-based public and private universities in Kenya
Information access, information poverty and the digital divide, open access and institutional repositories	It is not 'that you know' (Big Brother) but 'how much you know' (Big Data): An ethical reflection on the new emerging field of big data Privacy and public access: Using Internet cafés in Zimbabwe The impact of the digital divide on the access and use of electronic information resources at Egerton University, Kenya Ethical dimensions of theoretical frameworks in qualitative and quantitative research: An analysis of modernisation theory UKS Software
Emerging ethical issues (Sessions 5 and 6)	Towards effective Library Information Studies Ethics curricula in developing countries Ethical issues and challenges in the access and use of information services in public libraries in Nigeria: A PAPA model analysis Electronic waste: The dumping site of the Information Age Ethical considerations surrounding the administration of Runyoka/Lunyoka (fidelity charm) in Zimbabwe The challenges of access and use of university library services in Uganda: Some ethical considerations Ethical effects of emerging technologies for society Information Ethics implications for knowledge management processes: A survey of selected academic librarians in Nairobi County Critical ethical issues of e-scholarship: Experiences from a South African and Kenyan university Information Ethics in Library and Information Science: What are we teaching? Information access in school libraries in Limpopo Province
	Students' perceptions about the Library Information Science profession and its career opportunities

Research in progress	Knowledge management practices by Faculty of Arts students
	Services offered to physically challenged students by the University of Zululand Library
	High school information sources and their effect on first- year university students' information literacy skills

Table 2: Information Ethics Panel Discussions

Apart from the fact that all the conference papers were informed by research, two-thirds of the conference was dedicated to the delivery of research papers in progress. This fact further emphasised the key role of research in the promotion of Information Ethics. Since Library and Information Sciences (LIS) was the original 'home' of IE, with the advent of digital technology continually changing the 'face' of libraries. The traditional library might well become extinct: library shelves are gradually replaced by computers and/or digital networks, books with kindles, and 'bookish' librarians with 'IT gigs'. It is therefore not surprising that most of the research on knowledge management presented at a conference on knowledge management was on issues related to IE. (see Table 3).

<ul style="list-style-type: none"> • Towards effective Library Information Studies Ethics curricula in developing countries. • Ethical issues and challenges in the access and use of information services in public libraries in Nigeria: A PAPA model analysis. • The challenges of access and use of university library services in Uganda: Some ethical considerations. • Information Ethics implications for knowledge management processes: A survey of selected academic librarians in Nairobi County. • Critical ethical issues of e-scholarship: Experiences from a South African and Kenyan university. • Information Ethics in Library and Information Science: What are we teaching? Information access in school libraries in Limpopo Province.
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Table 3: IE LIS presentations

In June 2016, the use of comprehensive approaches to the planning and revitalisation of academic libraries were specifically addressed at a workshop in Sandton (RSA) organised by Melrose Training. On this occasion, the ACEIE Director, having been invited by the organisers, delivered two IE-related papers, one on IE as a concept and field of study, and the other on the Digital Wellness Toolkit.

Implicitly related to knowledge management in a digital world is its transmission and acquisition through education and training. In this re, moves from traditional 'book learning' to e-learning are taking place all over the world, Africa included. The next section focuses on the need for IE education in this context, and on the steps taken in this regard.

5.11 Information Ethics and Education

The role of education in development is acknowledged throughout the world. In Africa, where a large percentage of people are still either illiterate or semi-literate, its role is not only important, but critical. The imperative for African governments to provide quality education for all was emphasised again and again at e-governance workshops, at conferences attended by academics and by community members attending training workshops. However, the focus of this section is not on education per se, but on the contribution that particular education sectors could make to the development of African information and knowledge societies. Assuming that education at school level is aimed at laying the basis for further education and/or lifelong learning, it could be inferred that its primary purpose is to equip learners with the basic literacy and numeracy skills needed for survival in the post-school world. Post-school education, however, serves different purposes – skilling or reskilling of blue-collar and white-collar workers, professionals, entrepreneurs, business- and sportsmen and women, to name but a few. Nonetheless, what all post-school education has in common is the emphasis placed on cognition or reasoning skills as basis for practice.

It is the emphasis that higher education institutions place on the development of reasoning skills that informed the recommendation of delegates at the first ANIE conference, namely that the teaching of Information Ethics at these institutions should be prioritised. The schooling sector only became a target for IE training much later, primarily as a reaction to the pending implementation of e-learning at schools, while community training (Section 5.7.3) was the consequence of specific requests from different sectors of society.

The focus of this section is on activities aimed at the infusion of IE at university and school levels only. More specifically, since advocacy at these two levels required the development of programmes and/or resource materials, much of what is described here relates to their development and marketing.

5.11.1 Information Ethics and Higher Education

This section focuses on the processes followed in the development of an Information Ethics Curriculum model for Higher Education Institutions on the African continent. Informing this initiative is the assumption that the offering of Information Ethics courses at HEIs would (a) contribute to the establishment of a pool of knowledgeable and passionate IE advocates; (b) stimulate research on IE matters; and (c) contribute to the development of stable and ethical information societies on the African continent. Stakeholders involved in and supporting this ACEIE initiative include the Africa Network for Information Ethics (ANIE), UNESCO, the Universities of Pretoria and Zululand in South Africa, the University of Milwaukee-Tennessee in the USA, the Capurro-Fiek Foundation in Europe, and the South African Department of Communications, later renamed as the Department of Telecommunications and Postal Services.

The focus on higher education is the result of a decision by delegates at the 2007 ANIE conference. Informing their decision was the role that the WSIS ascribed to adult education in the development of information societies.

“Continuous and adult education, re-training, life-long learning, distance-learning and other special services, such as telemedicine, can make an essential contribution to employability and help people benefit from the new opportunities offered by ICTs for traditional jobs, self-employment and new professions. Content creators, publishers, and producers, as well as teachers, trainers, archivists, librarians and learners, should play an active role in promoting the Information Society, particularly in the least developed countries.” (WSIS Statement 31)

Having considered the implications of this Statement, delegates at the 2007 ANIE Conference recommended the development of an Information Ethics programme and teaching structure for universities on the African continent. Such a programme/teaching structure, they argued, had the potential not only to equip students with IE knowledge, skills and attitudes critical to the development of responsible and accountable Information Societies in Africa, but also to stimulate critical debates on the moral values and practices informing the digital production, storage, distribution and accessing of knowledge in general.

Informed by these arguments, the ANIE Board developed a “Grant Proposal for a 12-University Teaching Structure and Curriculum”. In terms of this proposal, the envisaged curriculum would be piloted at 12 universities on the African continent that were already offering courses either explicitly or implicitly dealing with issues concerned with the ethics of information. This proposal was subsequently presented to a group of African academics for attending the ANIE strategic planning workshop in January 2010. While agreeing with the essence of the Grant Proposal, these academics cautioned that the eventual selection of curriculum content and teaching/learning approaches should be directed by the need to acknowledge and accommodate differences in national and institutional values, cultures and protocols.

In response to this caution, ANIE members at the universities of Wisconsin-Milwaukee and Western Ontario arranged a workshop in Pittsburgh (USA) to discuss the challenges associated with accommodating such differences. Attending academics and PhD students (from Europe, Asia, the Middle East and Africa) interpreted concerns for the accommodation of difference as a call to promote ‘inter-cultural information ethics’, and subsequently focused their attention on identifying the opportunities and challenges associated with the development of an ‘inter-cultural’ university curriculum. The proposal that emerged from their deliberations was that, like the UNESCO e-governance toolkit (Section 5.7.1), the proposed curriculum should be descriptive rather than prescriptive in nature. It should, therefore provide would-be curriculum developers at different higher education institutions with no more than key learning outcomes, core content, proposed

pedagogical approaches (not teaching methods), and a recommended reading list. They proposed, moreover, that (a) university managers and academia at higher education institutions should be trained on the nature and purpose of Information Ethics and the methodologies most appropriate to its teaching, and (b) IE advocacy campaigns should be aimed at convincing these parties of the value that IE as a field of study could add to the academic programmes already in place at their institutions.

The ANIE Board, having taken cognisance of these recommendations, organised a conference in Gaborone (Botswana) in September/October 2010 to discuss the 'status, opportunities and challenges' of Information Ethics teaching at higher education institutions in Africa. The first day of the conference consisted of delegates presenting reports on the content and methods used in the teaching of IE or IE-related issues at their institutions. The rest of the conference was dedicated to deliberations on the nature and content of an Information Ethics curriculum that would be appropriate to Africa and its peoples. As was the case at the Pittsburgh workshop, delegates at this conference were adamant that the eventual IE curriculum should be flexible enough to accommodate differences in student composition, lecturer competence, and university cultures/protocols. In addition, university managers and academics at higher education institutions should be trained on the nature and purpose of IE and the methodologies most appropriate to its teaching.

Indications from reports delivered on the first day – i.e. on the status quo of IE teaching at their institutions – were that 'Information Ethics' as conceptualised at the 2007 ANIE conference was in most cases not yet taught, although the 'ethics of information' was addressed in a number of under-graduate programmes (Law, Media, Communication, Library and Information Studies) and in all research programmes. The exceptions were the universities of Pretoria, Zululand and Tumaini. The first two had, after the 2007 ANIE conference, added an Information Ethics unit to their existing under-graduate Information Science (IS) programmes. The ways in which these units were structured or 'packaged', as well as the time and credits allocated to these were, however, different (see Table 4).

Moreover, the University of Zululand had also incorporated different Information Ethics themes/topics into some of their other Information Science modules.

UNIVERSITY	PROGRAMME	STRUCTURE	CONTENT	LEVELS	CREDITS
Zululand	Info Science & literacy	Integrated units	Current issues	L1	1 – 4
	Information Ethics & Infopreneurship	Half semester	Legal issues – intellectual property, copyright, industrial property, licensing, contractual rights, plagiarism	L3	8
	Information Ethics	Semester	Information policy Internet/cyber ethics Protection – copyright, censorship, surveillance, privacy	L4	16
	Research methodology	Integrated units	Plagiarism	L3	None
	Information literacy	Integrated units	Access – rights/freedom (expression + access), digital divide, open access,	L2	None
	Intro to info science & information literacy	Integrated	Introduction: purpose, history, theory of ethics & information ethics	L1	None
Pretoria	Information Ethics	Semester modules	Introduction to information & computer ethics	L2	20
			Privacy issues in information & computer ethics		
	Socio-political aspects of info in global context	Integrated in INL course	Information & computer ethics & accuracy of information Information & computer ethics & intellectual property Ethical issues involving security Information & computer ethics & access to information Importance of Declaration of Human Rights, SA Constitution & various laws & legislations underlying & facilitating the practical implementation of information ethics issues highlighted throughout the module	L3	
			Privacy – privacy & the right to information; the Data Protection Bill Accuracy – ethical issues concerning digital identity management Access – ethical dilemmas associated with WikiLeaks The Consumer Protection Act Information Philosophy Information Poverty Security – Information & cyber warfare Ethical & technical issues concerning information security	PG (Hons)	15

Table 4: IE units/modules at the universities of Pretoria and Zululand

At Tumaini University (Tanzania), a compulsory module on Information Ethics was added to the existing 3rd year BIM (Bachelor of Information Management) programme. Comprising six units – *Introduction to ethics; Concepts and terms of ethics; Introduction*

to Information Ethics; Principles of ethics; Theories of Information Ethics; Codes and conduct of information professionals – this module served as the foundation for a more in-depth study of Information Ethics in the BIM, as well as in other under-graduate and post-graduate programmes. Three academic departments or schools at Tumaini University – Education, Communication, and Human Resource Management – were also in the process of reviewing the content of their Bachelor programmes to make them more ‘Information Ethics sensitive’.

Library and Information Studies lecturers at some of the institutions had also begun to integrate specific Information Ethics issues into teachings related to the management of information resources (computer applications, record management, IKS and oral archives). However, according to Mabuwonku (2010), the issues being addressed, and the ways in which it was done (being determined by the lecturers concerned), was not standardised; instead, it reflected individual lecturers’ particular preferences and/or research interests.

Institutions that had not managed to effect any changes to existing programmes at their institutions indicated that this was due to a lack of interest among students; the absence of a ‘standardised’ Information Ethics curriculum; the absence of lecturers with knowledge of IE; lecturers’ preference for traditional ‘lecture’ methods; already overloaded Bachelor’s programmes; and insufficient support from university management. Notwithstanding these constraints, conference delegates were adamant that it was important to include IE in higher education programmes as a means to stem bribery and corruption at institutional and national level. According to delegates, examples of these malpractices included lecturers either demanding money from students in exchange for marks, leaking examination papers to them, or colluding with those who did, and students committing plagiarism, breaking copyright laws, ‘buying’ good students’ work from ‘secretarial bureaus’ and submitting it as their own. In addition to this, library books were regularly ‘lost’ or illegally downloaded, government and/or court files were ‘stolen’ or ‘misplaced’, and confidential information was divulged to individuals or groups not authorised to have such information.

Lessons learnt during the Botswana conference regarding the challenges facing academics who advocate for the incorporation of Information Ethics themes, units or modules into existing programmes served as basis for the tentative identification of content and research methodologies appropriate to an Africa-oriented Information Ethics curriculum at two subsequent ANIE curriculum research workshops. One of these took place at the University of Pretoria (RSA) in July 2011, and the other at the University of Wisconsin-Milwaukee (USA) in September of the same year. ANIE members representing the universities of Pretoria, Zululand, Wisconsin-Milwaukee and Kenya, as well as representatives of the International Centre for IE at these workshops agreed that, if the curriculum were to make a difference to people's digital behaviour, it should (a) stimulate critical reflection not only on the use of ICTs, but also on the impact it could have on people's relationships with one another and with their life worlds, and (b) existing research on Information Ethics teaching should serve as basis for the selection of curriculum content and teaching approaches.

Informed by this decision as well as by the recommendations on curriculum design put forward at the Botswana conference, workshop participants suggested the development of both an under-graduate and post-graduate curriculum. The under-graduate curriculum should ideally focus on Information Ethics theories while the post-graduate curriculum should focus on research that reflected students' ability to apply IE theories to specific cases, contexts and/or career fields. Curriculum content at both these levels should also equip students with the skills they need to explore and critically reflect on power structures, moral attitudes, and traditions. To this purpose, and also because it would ensure that their view of IE was holistic, students should be exposed to a range of philosophical, descriptive, and emancipatory theories.

As to the selection of specific content, workshop participants argued for the prioritisation of Information Ethics issues like privacy, access and accessibility to information for all, culture, the quality and accuracy of information, intellectual property rights, emerging trends and legislation. To ensure that the design and implementation of an IE curriculum

for Africa would yield the desired outcomes and have the desired effect on people's ICT attitudes and behaviour, they recommended further research and training on IE curriculum construction, materials development, teaching methodologies, assessment, service learning, distance education, and digital scholarships.

Having agreed on the curriculum goal and the broad principles to be used in the selection of content, participants focused on the format, structure and teaching approaches that were deemed most appropriate to effective delivery. They agreed that, given existing differences in university programmes, protocols and cultures, a curriculum consisting of a series of context-sensitive, theme-focused short courses would be the one most likely to find favour at higher education institutions on the African continent. As to the teaching/learning approach most appropriate to the exploration of Information Ethics themes/topics, participants opted for the integration of discursive and analytical methods. These should initially be aimed at engaging students in the identification, description and discussion of ethical problems or dilemmas, then in the analysis of case studies depicting moral problems or dilemmas, and finally in the examination of different theoretical/philosophical perspectives on moral problems or dilemmas.

Two months later, in November 2011, the ANIE Board embarked on a broad-based consultation process to determine whether the draft curriculum framework emerging from the Botswana conference and subsequent curriculum development workshops would gain the approval of higher education institutions on the African continent. Included in the consultation process was the posting of the draft curriculum framework on the ANIE website, its electronic distribution to participating higher education institutions on the African continent, and its presentation at conferences lending themselves to the discussion of Information Ethics and issues related to it. In all these cases, comments and suggestions were used as reference points for further development and/or fine-tuning towards the final framework.

The first conference at which the draft framework was presented for comment was the 3rd International ICST Conference on e-Infrastructure and e-Services for Developing

Countries, held in Zanzibar (Tanzania) on 23 and 24 November 2011. On this occasion the ANIE Director delivered a poster presentation on the development of Africa as a macro-information society and highlighted the contribution that Information Ethics and its teaching at universities could make to sustaining the development of Africa. He afterwards facilitated a workshop session on the draft curriculum framework and gave conference delegates attending the workshop session an overview of the background to and rationale for a university curriculum on IE. He also talked them through the process of developing a framework or toolkit before presenting it to them for comment and suggestions for further development.

In terms of the MoA between the UP and the DTPS, which led to the establishment of the ACEIE, it was up to the latter to finalise the IE curriculum framework and support higher education institutions in the design and implementation of IE curricula appropriate to their own institutions. To this purpose, the ACEIE used conferences, workshops and meetings with higher education institutions in the RSA and elsewhere in Africa to continue with the afore-mentioned ANIE consultation process. The ANIE also used the framework not only as a means of distributing knowledge on Information Ethics, but also to prepare higher education personnel for the subsequent design and delivery of appropriate institutional-based IE curricula.

In September 2012, having spent the period from December 2011 to July 2012 on an internal evaluation of suggested changes to the draft curriculum framework, the ACEIE presented the second draft to academics who attended a two-day curriculum workshop preceding the 3rd ANIE international conference. While they were satisfied with the changes effected to the framework, workshop participants indicated that the bureaucratic administrative procedures involved in curriculum revision at their institutions, their own and their colleagues' lack of expertise in the design of short courses, the integration of theoretical and practical Information Ethics components, and the use of interactive teaching/learning methods might delay curriculum implementation.

Workshop facilitators who had been sensitised to problems like these during past curriculum conferences and workshops used case studies to illustrate different approaches to the design of stand-alone Information Ethics courses and the integration of IE themes into existing programmes, units or modules. Participants were also issued with copies of the Africa Reader (Section 5.12.1) which could assist them in the selection of curriculum content. Following these presentations, participants were given the opportunity to develop generic guidelines for the selection, structuring, ‘packaging’ and teaching of IE content, as well as the assessment of student competence. The workshop was concluded with a brainstorming session on the arguments, techniques and processes that could be used by other academics and university administrators to introduce the study of IE at their institutions.

Consultation on and advocacy for the proposed framework continued until its completion in June 2013. One of the platforms used to this purpose was the 4th Annual ICT in Higher Education Summit held in Johannesburg (RSA) in March 2013. Although the primary focus of the summit was on the opportunities offered by ICTs and cloud computing in particular, the supportive role that Information Ethics could play in minimising potential ‘cloud’ risks was immediately acknowledged; hence support as pledged for its implementation at as many higher education institutions on the continent as possible. Following his presentation at this summit, a number of higher education institutions in the RSA invited the ACEIE Director and his team to do a presentation on the IE university curriculum project at their institutions. The ACEIE consequently ran six one-day workshops on the IE curriculum project at local institutions of higher education (see Table 5). Interspersed with these workshops were two ACEIE-UP meetings – on 5 April and 2 September – aimed at evaluating comments or suggestions, and making amendments to the framework. A third workshop held on 13 September 2013 was aimed at its finalisation.

<i>Workshop date</i>	<i>Institution visited</i>	<i>Workshop focus</i>
15 March 2013	University of the Free State	IE university curriculum
26 March 2013	University of Zululand	IE university curriculum

12 April 2013	University of Limpopo	IE university curriculum
24 May 2013	University of the North-West	IE university curriculum
6 September 2013	University of Zululand	IE university curriculum
13 September 2013	University of Pretoria	IE university curriculum

Table 5: Higher Education Workshops hosted by ACEIE

The order and manner in which the units would be offered were left to institutional curriculum designers. They could, for example, decide to use a cross-curricular approach with specific units being located in faculties or schools deemed most appropriate to their purpose and content. Alternatively, they could decide to either offer each unit as a stand-alone course or to combine the units into a single module attached to an existing academic programme. Teaching/learning resources would by implication be determined by the target group, academic level, delivery purpose and mode. Journal articles and other academic texts would be of critical importance to students at their HE institution, while workbooks and simplified readers would be more appropriate for contextual training purposes, community development and the training of trainers/facilitators. While the use of case studies and moral dilemma scenarios would be suitable for use in all these groups, they would have to be contextualised in terms of the needs of the target group concerned.

Due to the flexibility of the Framework, it is possible for institutions with different cultures, beliefs and protocols to use it as basis for the design of context-appropriate curricula and/or short courses. It follows that institutional Information Ethics offerings might therefore differ widely. The purpose and outcomes of each unit, the themes to be addressed, the questions that should serve as basis for the selection of content, and the academic levels at which units should ideally be offered, would however be 'fixed' or 'standardised'. Specific content, teaching methodologies and assessment methods are not prescribed: the selection of these is left to institutional curriculum developers, as are decisions on the most appropriate teaching, learning and assessment methods.

The Framework was completed in 2013. Its roll-out and implementation at the twelve pilot universities commenced in 2014. Included in this group were three South African

universities (Pretoria, Zululand, and the Tshwane University of Technology), one Nigerian university (Ibadan), two Kenyan universities (Moi University and the Kenya Polytechnic University College), two Ugandan universities (the Uganda Christian University and the EASLIS Makerere University), and one university each in Botswana, Ghana, Zambia and Zimbabwe (the Universities of Botswana, Ghana, and Zambia, as well as the National University of Science and Technology in Zimbabwe).

In order to support and guide the roll-out of the Framework, the ACEIE ran a number of workshops to support universities across Africa in the design and implementation of their own institutional-appropriate IE offerings. The first of these workshops was run in Tanzania (Zanzibar) in October 2013. Spanning four to six days, the first two days focused on Information Ethics in general and introduced new-comers to the notion of IE while giving those already familiar with the concept the opportunity to reflect on progress made with its promotion in Africa since 2007. To this purpose, keynote addresses delivered on these days covered the origin, development and functions of IE. They focused specifically on the role of IE in the development of Information and Knowledge Societies in Africa and elsewhere in the world, and on IE issues related to the use of ICTs and the internet.

The rest of the workshop was devoted to the Information Ethics curriculum. Having talked participants through the design of the curriculum framework, facilitators used case studies to illustrate how the framework could be utilised in the design of institutional-specific IE offerings. Alternatives presented in this regard included the integration of IE themes into different academic disciplines/programmes, the addition of IE units or modules to those programmes, and the design of stand-alone IE programmes or short courses. Following participant comments and discussions on these, the focus typically shifted to the implementation of IE offerings, that is, the training of those who would be responsible for teaching Information Ethics as well as for monitoring and evaluating its implementation. Participants then had the opportunity to discuss not only potential challenges in this regard, but also ways to overcome them. Workshops were typically concluded with a UNESCO presentation on best curriculum practice in other parts of the world and the

distribution of IE information resources that could support participants in the design and delivery of IE offerings.

Two more workshops, similar to the Tanzanian one, were subsequently run in Nigeria (November 2013) and Uganda (January 2014). In addition, shorter pre-conference workshops offered further training and monitored progress with the design and implementation of Information Ethics curriculum offerings across the African continent. Due to tremendous interest in and enthusiasm for IE teaching expressed on the Uganda Information Ethics Network, two workshops were presented in Uganda in July 2014. The first one took place at the Uganda Management Institute (UMI) prior to the ANIE conference, and the second, which formed part of the ANIE conference itself, was hosted at the Metropole Hotel in Kampala.

Conference reports on progress made with the design and implementation of IE offerings at higher education institutions indicated that IE teachings were embedded in courses taught across faculties, schools and departments (Information Studies, Communication Studies, Computer Studies, Engineering, Law, Business, Public Health and Medical School in particular), as well as in all departments offering research methods. According to delegates, this approach found favour with the majority of students at their institutions; they actually argued that Information Ethics teachings would effectively erode the malpractices that existed at their institutions.

Issues most commonly addressed in these teaching were directed by specific IE themes: the role of IE in information societies (access to information, copyright and censorship); information literacy (identifying sources of information, evaluating information, and the legal and ethical use of information); research (referencing and plagiarism); media literacy (accuracy and fairness in media reports as well as privacy versus public interest); intellectual property (copyright law, patents, confidential information and trade secrets); e-governance in information societies (public ethics and good governance); gender and culture in Africa (how culture shapes male and female positions in society); and statistics (ethics of data gathering and presentation of health and legal issues).

What also emerged at this conference was that the number of higher education institutions participating in the Information Ethics curriculum project had grown from the original 12 to 38. Since 2014 the number has again increased to 144 (see Appendix 1 for a complete list), primarily due to the influence of the ANIE, its localised chapters and the 'marketing' of the IE curriculum project and framework. Included in this list are a number of universities in other parts of the world – the universities of Tennessee and Wisconsin-Milwaukee in the USA, the Capurro-Fiek Foundation in Europe and the European-based International Centre of Information Ethics (ICIE) – which developed IE programmes appropriate to their contexts and priorities. ACEIE workshops (see Table 5.4), ANIE conferences and stakeholder meetings share (as a matter of course) information on progress made with the introduction of IE at higher education institutions, challenges faced and overcome, and the effect of IE teachings on ICT behaviour in general.

5.11.2 Information Ethics at primary and secondary school education

The imminent move towards e-learning at schools was signalled in 2004 with the release of the South African Government *White Paper on e-Education*. It subsequently served as basis for the Department of Basic Education's *Guidelines for Teacher Training and Professional Development in ICT* (2007) and its *Integrated Strategic Planning Framework for Teacher Education and Development in South Africa for 2011 to 2025*, and thus marked the inevitable move towards e-learning at school level. Nowhere in these documents was there any mention of Information Ethics, either as part of e-learning or for teacher training.

Having noted this omission, the ACEIE decided to use DBE educator workshops on ICT as platforms for Information Ethics advocacy. The first of these workshops, dealing with ICT literacy, was run by the Eastern Cape Department of Education in 2012. Attended not only by educators but also by government officials attached to the Department of Education, this was an ideal opportunity to sensitise especially the latter to the relevance of IE in the implementation of e-learning and the need to include IE training in teacher development initiatives if e-learning is to succeed (ACEIE 2012 Annual report).

The need to include Information Ethics training in the initial/pre-service training of teachers was highlighted at the 8th International ELA e-Learning Conference in Windhoek (Namibia) held in 2013. Focusing specifically on the inclusion of pedagogical approaches appropriate to the 21st century, delegates at this conference expressed their concerns about the risks inherent in the use of ICTs for school learning purposes. They were also adamant about the inclusion of IE in pre-service as well as in-service teacher training. Informed by concerns about the potential impact of mobile technology on African societies, conference papers and discussions were aimed at finding answers to three IE-related questions: (a) Could technology preserve tradition while simultaneously accelerating innovation? (b) Should innovation in education be a priority when there were so many contending pressures on African governments and their partners to provide “education for all”? (c) Could the dominance of English as the medium of instruction in MOOC (Massive Open Online Courses) and OER (Open Education Resources) be considered ‘fair’ in African countries where mother tongue (L1) school education was the norm? (2012 ELA conference report). The last issue, i.e. the perceived hegemony of English was raised again in June 2016 at a UNESCO IFAP Conference in Paris (France). However, on this occasion the emphasis was not on the perceived imposition of English in education, but on the impact that the use of non-indigenous languages could have on African development, the accessibility of information, the preservation of indigenous languages, and the multilingual nature of Africa (ELA 2013 Conference Report).

The need to also address Information Ethics as part of the in-service training of practising teachers was first mentioned at the 2014 Practitioner’s Workshop. Participants who acknowledged that their concerns about the “uneven access to ICT infrastructure” at schools had been partially addressed through the establishment of ICT laboratories, believed that this alone would not ensure effective e-learning. According to them, the computer literacy training for teachers that was conducted by provincial education departments and their private sector ICT4E partners was inadequate because it did not include any reference to Information Ethics issues. Given the increase in the irresponsible/unethical use of ICTs, especially by school-going children, workshop

participants believed that this omission could potentially undermine the effectiveness of e-learning (Workshop Report, 2014:3). The Department of Basic Education took note of the concerns and consequently developed an e-learning policy for schools.

A number of factors signalled the need for IE education to school children as well. In the first instance, research on the use, misuse and abuse of ICTs by the younger generation (school children and university students) indicated an alarming increase in the illegal downloading of new software, computer hacking, theft of computerised term papers or assignments, and internet gambling (Chien-Pen & Chen, 1999:4-6). Moreover, the media regularly report the dire consequences of irresponsible juvenile behaviour on social media platforms, suggesting the need for education and training on legal issues and Information Ethics related to the use of ICTs (INTEL, 2014). An urgency to train teachers in the use of ICTs for e-learning purposes and in IE was indicated at a number of conferences and workshops on the African continent (Section 5.11.2).

With this purpose in mind, INTEL sponsored a project involving first-year UP Information Science students in October 2014. INTEL was at that time one of the private sector companies assisting the DoE in the roll-out of its e-learning strategy and had published a guidebook for teachers – *Transforming Education for the Next Generation: A Practical Guide to Learning and Teaching* – on e-learning and teaching. The project – *Ethics in ICT for Schools* – was aimed at making school learners aware not only of cyber risks and threats, but also of Information Ethics as a means of safeguarding themselves against these. To this purpose, students had to create mobile phone videos on cyber security and Information Ethics issues/themes that were appropriate to the age group being targeted. They then had to use these videos as teaching-learning resources during their school visits.

The ACEIE too, being required to do so in terms of the new MoA between the UP and the DTPS, decided to increase its involvement in the training of school teachers in the 2015-2017 period. A seminal opportunity to do so presented itself when the Metropolitan East Education Department (MEED) in the Western Cape (RSA) approached the ACEIE for

help in the Information Ethics training of teachers at schools identified for the roll-out of e-learning.

One of the outcomes of this meeting was the development of a Facilitator's Manual and a Participants' Workbook that could be used as basis for the training of school educators. Another outcome was a MEED invitation to the ACEIE and INTEL to address school principals on Information Ethics and e-learning at a MEED Principals' Conference in Cape Town in January 2015. Combining their forces, the ACEIE and INTEL used this opportunity to alert principals to the potential consequences of ICT misuse or abuse, the threats posed by cyber-crime, the steps they and their teachers could take to protect themselves and the children in their care against these dangers, and the approaches they could use to teach children about ICT misuse. In conclusion, they informed principals of their intention to jointly develop an IE training programme and support materials for school teachers. To give them an idea of available sources that could support their implementation of e-learning, INTEL presented each of the attending principals with a flash drive containing its e-book, *Transforming Learning: A Buyers' Guide*.

In June 2015, at an INTEL Eduweek workshop held in Midrand (RSA), education professionals involved in educational technology (EduTech), early childhood development, as well as basic, higher, inclusive and vocational education not only had the opportunity to share their experiences with Information Ethics and e-learning, but also to express their views on the school booklets included in the developing Digital Wellness Toolkit.

The penultimate version of the Toolkit was subsequently presented for their comment and input to DBE representatives at a UNESCO-sponsored School Curriculum Meeting in Pretoria in July 2015. Comments and inputs made at this meeting resulted in minor adaptations to the Toolkit booklets for primary school learners and their parents. Following its completion, it was printed in hard copy, made available online (as part of the ACEIE's commitment to open learning), and used as basis for a Digital Wellness Workshop at a UNESCO-sponsored Digital Wellness in Africa Workshop in Pretoria

(RSA) in November 2015, as well as at an e-Learning Conference in Cairo (Egypt) in May 2016. Whereas the Cairo conference (the largest gathering of professionals involved in e-learning and ICT education and training in Africa) focused primarily on the crossroads between ICT and cyber safety, the UNESCO conference focused on the effect of the digital divide on the South African education system and on the imperative to ensure school children's digital wellness. Both the Digital Wellness Toolkit and a Digital Wellness School Newspaper project were used to illustrate how this could be done.

The final version of the Toolkit was used as basis for two Digital Wellness educator workshops held in the Western Cape Province of the RSA. These workshops, respectively run in May and June 2016, focused specifically on the e-distribution and e-management of knowledge, e-policies and practice, IE research and development. They were also aimed at encouraging educators to actively promote digital wellness in their schools, classrooms and communities. Each of the 600 attending teachers therefore received a copy of the completed Digital Wellness Toolkit booklets for schools.

Digital wellness workshops were also run in Kampala (Uganda), Nairobi (Kenya) and Malawi during the period 2015 to 2017. While all of these workshops had the promotion of digital wellness as purpose, the issues discussed in this regard were markedly different. In Uganda, discussions focused on creative commons, digital wellness, Information Ethics, and university student and volunteer IE projects. In Kenya, the focus was solely on the Digital Wellness Toolkit. Kenyan teachers and education department officials, having attended a UNESCO-sponsored workshop on IE as an element of digital wellness and a critical component of e-learning, were keen to follow the South African example of 'localising' the Toolkit for their conditions. This was done at a subsequent INTEL workshop, after which the Kenyan Ministry of Education committed itself to reformatting the Toolkit as a television series that could be used to promote IE and digital wellness in Kenyan schools and communities. In Malawi, the focus was more on the promotion of the whole IE advocacy package – the university curriculum framework, the Digital Wellness Toolkit, and the establishment of localised ANIE chapters.

5.12 Information Ethics Teaching and Learning Resources

In order to provide potential Information Ethics mediators with information on Information Ethics research and support the design and delivery of institutional-appropriate university curricula on Information Ethics, the ANIE/ACEIE compiled an *Africa Reader on Information Ethics*, developed an IE Concept Book and facilitated the writing of an IE Handbook on Cross-cutting IE themes. It is the development of these resources that is the focus of this section.

5.12.1 Africa Reader on Information Ethics

The first resource to be developed after the 2007 ANIE conference was the *Africa Reader on Information Ethics*. The Reader was a compilation of conference papers delivered at the 2007 ANIE conference. The compilation was started by the ANIE Board soon after its first conference and completed by the ACEIE after its establishment in February 2012. In March 2012, one thousand copies of the Reader were distributed to universities on the African continent. Thereafter, copies were issued to all those attending ANIE conferences and AEIE workshops. In 2009 the Reader was also made available online in terms of the open-learning and information-to-all principles that inform ANIE/ACEIE activities.

The compilation of the Reader was informed by requests from conference delegates for the compilation of conference papers since few (if any) texts on Information Ethics in Africa existed at the time. According to the delegates, the information in the Reader would not only provide them with the necessary information to raise awareness of Information Ethics at their institutions and in their communities, but it could also be used as basis for IE research, curriculum design and IE teaching.

5.12.2 Concepts in Information Ethics: An Introductory Workbook

Developed by a group of ACEIE staff members, the Concepts Workbook is aimed at non-professional information practitioners and students who enter the field of Information Ethics. The workbook consists of 65 alphabetically listed IE concepts – each of which is first defined and then briefly explained and/or illustrated – and it is essentially an easily accessible lexicon and reference manual. It could, however, also be used to train people

in different sectors of society in the use of IE jargon. To this purpose, some of the terms are accompanied by short workshop activities.

5.12.3 Handbook on cross-cutting Information Ethics themes

The conceptualisation of the handbook – *Information Ethics in Africa: Cross-cutting Themes* – was the result of deliberations at an ANIE workshop dedicated to the discussion of potential ANIE/ACEIE projects to be launched after the establishment of the ACEIE in December 2011. During the course of the workshop, which was hosted by the University of Zululand in March 2012, participants decided on the format and themes to be covered in the Handbook and identified potential writers for each chapter. Each of the chapters included in the final version of the Handbook is a mix of theoretical knowledge and indications for its practical application to various situations and contexts. Aimed at established as well as potential Information Ethics scholars, the Handbook should be equally useful to IE lecturers, students and would-be researchers.

The development of the Handbook was seen as a first step towards the ‘standardisation’ of Information Ethics teaching at universities on the African continent. Its primary purpose was to provide guidance and support to higher education Library Schools / Departments that wanted to incorporate IE issues into their existing curricula. Its secondary purpose was to lay the basis for the envisaged Information Ethics University Curriculum Framework.

The Handbook is freely available online according to the principle of open access and has also been distributed in hard copy to universities participating in the 12-university curriculum project. To ensure that it remains relevant, the authors have committed themselves to the regular updating of the Handbook with regard to new theories, new IE issues, and new ways of tackling these.

5.13 Conclusions

Chapter 5 addressed the fourth research question namely; Why is an Information Ethics curriculum model needed in Southern Africa and what should the main elements of such a model be?

In order to answer the research question, the focus of the chapter was on matters related to training and curriculum development theories most relevant course content, number of students, qualifications of lecturers, choice of involved African universities, textbooks, publications, readers, journals, public lectures and short courses. Information Ethics initiatives and activities at both the University of Pretoria and the University of Zululand formed part of this overview.

It was during workshops and academic conferences that academics from Southern Africa shared their Information Ethics experiences with one another. Based on Tables 2, 3 and 4 in this chapter, academic interaction contributed to a better understanding and appreciation of similarities and differences between their own experiences and those of conference delegates from other parts of the world. In this way, the conferences contributed not only to the growth of a truly international understanding of Information Ethics, but also to greater respect for and appreciation of the problems facing Africa and Southern Africa. The continent finds itself in a struggle between marrying its need to become a globally competitive society and sacrificing the values and ways of life it holds dear.

This chapter determined the curriculum goals and the broad principles to be used in the selection of content, participants focused on the format, structure and teaching approaches that were deemed most appropriate to effective delivery. They agreed that, given existing differences in university programmes, protocols and cultures, a curriculum consisting of a series of context-sensitive, theme-focused short courses would be the one most likely to find favour at higher education institutions on the African continent and Southern African region.

Related to the teaching/learning approach most appropriate to the exploration of Information Ethics themes/topics, this chapter indicates that participants opted for the integration of discursive and analytical methods. These should initially be aimed at engaging students in the identification, description and discussion of ethical problems or dilemmas, then in the analysis of case studies depicting moral problems or dilemmas, and finally in the examination of different theoretical/philosophical perspectives on moral problems or dilemmas.

As to the selection of specific content for the curriculum model, Chapter 5 argued for the prioritisation of Information Ethics issues like privacy, access and accessibility to information for all, culture, the quality and accuracy of information, intellectual property rights, emerging trends and legislation. Further to the design and implementation of the curriculum model both the desired outcomes and the desired effect on people's ICT attitudes and behaviour were recommended.

The next chapter describes the Information Ethics curriculum model in detail.

CHAPTER 6: THE CURRICULUM MODEL FOR INFORMATION ETHICS TEACHING IN A MULTI-CULTURAL SOUTHERN AFRICA

6.1 Introduction and Purpose

As indicated in Chapter 5, the idea of developing an Information Ethics Curriculum model for universities on the African continent was first expressed at the 2007 ANIE Conference. At this conference, delegates were sensitised to the central role that the generation of new knowledge plays in the development and sustainability of information and knowledge societies, and also to the negative impact that the misuse or abuse of information communications technologies could have in this regard. The delegates' awareness of these issues was coupled with their belief that the development of African countries as ethical information and knowledge societies would depend on the advocacy of Information Ethics on the continent. Delegates furthermore argued that the generation and

dissemination of knowledge was the primary task of universities, and therefore they recommended that an Information Ethics curriculum model be developed for universities to prepare students to act as Information Ethics advocates in their own communities, workplace and life world once they graduated.

The cohesiveness of the curriculum model was emphasised by the fact that participating curriculum designers agreed on the rationale for and purpose of Information Ethics teaching and learning within an understanding of the African multi-cultural environment (the focus of Chapter 4). They concurred that an awareness of the cultural environment and Information Ethics was necessary to address the potentially negative impact of digital technology on societal morals and state security, since legislation in this regard was not keeping pace with the development of increasingly sophisticated digital technologies.

Therefore, linking the understanding of multi-culturalism, culture and cultural impact (Chapter 4) to the content and the curriculum model (Chapter 6), becomes vital in developing a curriculum model for teaching Information Ethics in Southern Africa. Both culture and ethics are not exact sciences and will always be open to various interpretations but Figure 16 summarizes the general relationship and relevance between cultural activities as clustered in the four quadrants (explained in Figure 9) and terminology and philosophical reasoning used in Information Ethics.

Cultural activities clustered in four quadrants as explained in Figure 9	Relevance to basic concepts of Information Ethics and philosophy
Cultural activities related to Existence (Figure 10)	<ul style="list-style-type: none"> • Health and medical ethics • Cyber safety and cyber crime • Ethics related to RFID and ICT implants • Artificial Intelligence
Cultural activities related to Construction (Figure 11)	<ul style="list-style-type: none"> • Language • Knowledge (enculturation and acculturation)

	<ul style="list-style-type: none"> • Ethical matters related to education and training • Access and accessibility to information • Moral character (Virtue ethics)
Cultural activities related to Development (Figure 12)	<ul style="list-style-type: none"> • Intellectual property • Copyright • Business ethics • Use of information and communication technology • Research ethics
Cultural activities related to Social Order (Figure 13)	<ul style="list-style-type: none"> • Social justice and social order • Information and Knowledge Societies • Human behaviour • Human interaction • Happiness (Utilitarian ethics) • Ethics of care (deontology) • Ubuntu

Figure 16: relation between culture and information ethical terminology

6.2 Information Ethics Training Model Design Process

The theoretical frame of reference for the development and design of a curriculum model for the teaching of Information Ethics in Southern Africa – both as a new field of study and as a way of life – that is presented in this chapter, reflects an integration of principles derived from various approaches to curriculum and community development and cultural diversity. Whereas the eventual design of the Information Ethics University Curriculum Framework is outcomes-based in nature, the process that resulted in the design of this proposed model was essentially ‘naturalistic’ (Walker, 1971).

The naturalistic selection of learning content, teaching-learning approaches and learner assessment in outcomes-based curriculum design is based on pre-determined outcomes (Spady, 1981, 1988, 1992, 1994) or educational objectives (Bobbit, 1918; Tyler, 1949). Decisions on these in naturalistic approaches to curriculum design (see Figure 17) are

typically informed by curriculum designers' perspectives on the status quo of education (*what is*) and their assumptions/beliefs regarding *what ought to be* (the 'possible' and/or 'desirable' future of education) (Walker, 1971). Differences in the 'image' that curriculum designers and curriculum implementers or 'recipients' have of *what is* and *what ought to be* need to be discussed and debated with a view to reaching some consensus on key curriculum components – concepts, theories, aims, processes and procedures. Agreement often requires the use of data to justify particular positions or confirm the validity of claims made during the deliberation stage of the design process. Only when agreement has been reached, should the actual design of the curriculum take place.

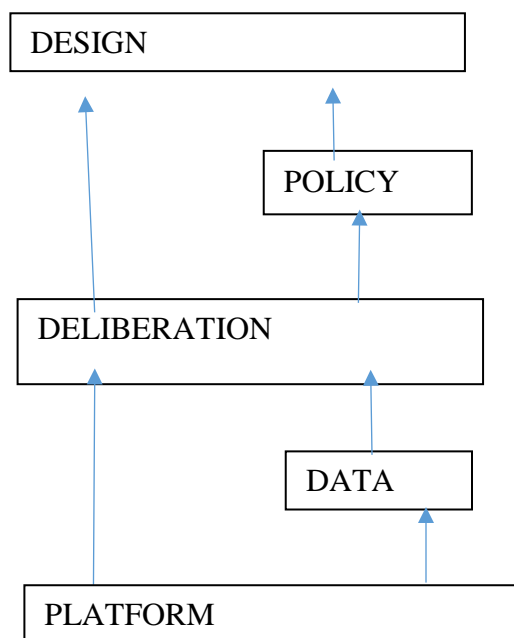


Figure 17: Walker's naturalistic curriculum design model

6.3. Design Platform for the Information Ethics Curriculum Model

As mentioned, the platform for the design of an Information Ethics curriculum model for Southern Africa emerged from two ANIE conferences, the 2007 conference on Information Ethics in Pretoria and the 2010 conference on Africa Information Ethics in Botswana (Section 5.11.1), both of which were attended by academics and policy makers from Africa, Europe and the USA. Beliefs about what 'ought to be' were encapsulated in

the Tshwane Declaration on Information Ethics (Section 5.4), a consensual vision of Africa as a mature and full-fledged Information and Knowledge Society, one in which information technology is not used for personal gain only, but as a means of strengthening Africa's global participation and competitiveness. The realisation of this vision, delegates agreed, could be done best by enhancing rather than detracting from Africa's moral core (its values, beliefs, cultural traditions and indigenous knowledge systems). It was to this end that delegates recommended the development of an Information Ethics curriculum for universities on the African continent.

Implied in this declaration, which was supported by all those attending the conference, was delegates' agreement on the meaning of Information Ethics as a concept, the benefits that Africa could derive from becoming a full-fledged information and knowledge society, as well as the opportunities that the responsible use of information technology could offer in this regard (Walker's diagram: Figure 17). Delegates also agreed on the need to create an awareness of the changes that the presence of and advances in ICTs could have on the relationships between peoples and their world (Walker's aims), as well as on the contribution that a university programme on Information Ethics could make to the realisation of this vision. Subsequent deliberations at Information Ethics conferences and workshops in the USA and Africa (see Chapter 5) – some of which were quite heated – resulted in agreements on the theories that should inform such a curriculum, the format and content of the curriculum, and the procedures that should be followed in its design and implementation. It was this collective vision that subsequently served as platform for deliberations on the design of the Information Ethics University Curriculum Framework described later.

Data on 'what was' (the status quo of IE education in Africa), collected by attending academics at their respective institutions, was presented in the form of reports on existing IE-related teachings at their universities to delegates at the Botswana conference on Africa Information Ethics: The Road Ahead. Indications from the data presented were that, although the term 'Information Ethics' was completely new to fellow academics, teachings on 'ethics' and IE-related issues (plagiarism, copyright, codes of conduct, etc.)

had already been addressed in a number of programmes (e.g. Law, Theology, Information Management, Library Sciences) in the context of the discipline concerned.

6.3.1 Higher Education Information Ethics Curriculum Model deliberations

Authentic deliberation, according to Schwab (1969), cited by Walker (1971), “treats both ends and means ... as mutually determining one another”. To this purpose, debaters should collect data on *what is*, as well as *what is not relevant* to the “case concerned”; generate “alternative solutions” if and when necessary; “trace the branching pathways of consequences which may flow from each alternative”; “weigh alternatives and their costs and consequences against one another”; and then “choose, not the right alternative ... but the best one” (Walker, 1971). Three ANIE events following the Botswana conference were devoted to deliberations on the specific purpose, principles, structure, content, teaching and learning approaches to be included in the Information Ethics University Curriculum Framework for Africa.

Deliberations on these (see Chapter 5) focused on tensions arising from the thrust towards globalisation (which was necessary for African development); differences in global and African values, cultures and beliefs; Africa’s readiness for and use of ICTs as a means towards its development as a full-fledged Information and Knowledge Society; and the development of the kind of university graduate who would best be able to contribute to the development of African information and knowledge societies. Emerging from these deliberations was general consensus that the long-term goal of a generic IE curriculum should be to contribute to such development. One way of doing this was to ensure that the inhabitants of Africa were aware of the development opportunities created by ICTs; the potential impact that digital technology and the use of ICTs could have on their values, beliefs, cultures, economic and social development; the risks associated with its use; and the steps they could take to safeguard themselves against such risks. The medium-term goal of the curriculum should therefore be to equip potential graduates with IE knowledge, skills, attitudes and values that would enable them to adopt the role of IE champions/missionaries in their own communities and places of employment. Implied in

this goal, is support for the development of students' *being*, their "becoming" through "knowing" and "doing" as propagated by Barnett and Coate (2004).

Due to the discussion and justification of alternatives presented at curriculum workshops and Information Ethics conferences, as well as to an increasing awareness of differences in the student composition, culture, policies and curriculum development procedures of universities, the decision was made to exchange the original conceptualisation of an IE curriculum standardised by means of prescribed content with a curriculum standardised by outcomes. Due to this shift, institutional curriculum designers, guided by the stipulated outcomes, would have the freedom to select content, teaching and learning approaches and assessment procedures deemed appropriate to their particular contexts. Thus, while the output of IE teaching and learning would theoretically be the same, the inputs would differ.

6.3.2 Benefits/advantages of a 'naturalistic' Information Ethics Curriculum Model

What needs to be noted with regard to the process is that while it was facilitated by the ACEIE, decisions on its design were taken not by the ACEIE, but by academics representing universities participating in the 12-university curriculum project. It was, therefore, essentially a 'bottom-up', 'inside-out' process, driven by those who would eventually be responsible for its implementation and management. It gave participating academics a sense of 'ownership' – it was 'their' framework, not one imposed on them by an external agency. Because of this, they felt comfortable with the end product, and were committed to subsequent processes associated with its implementation. Moreover, their active involvement in its design was a 'hands-on' learning experience, especially for those who had not previously been involved in curriculum development activities. This 'skilling' process gave them the confidence to embark on future curriculum development ventures, including the design and implementation of their own institutional-appropriate IE curricula.

The greatest benefit of the 'naturalistic' approach to curriculum development in this case was that the devolution of decision making to those who have to implement the curriculum

(using the standardised curriculum framework only as frame of reference) gave them a sense of ownership, while it also empowered them in the art of curriculum making. As indicated in the discussion of community development principles (see Chapter 4), empowerment and a sense of ownership are critical to the success of any community development project. The fact that these are the benefits that institutions derive from the curriculum development process, augurs well for its effectiveness in the development of African communities as information and knowledge societies and, ultimately of Africa as a full-fledged Information and Knowledge Society – equal in all respects to its counterparts in other parts of the world.

In retrospect, the decision to give institutions the opportunity to design their own outcomes-based curricula was a sound one. Some institutions decided to structure their Information Ethics curricula as short courses or stand-alone modules; some integrated IE themes into current/existing programmes across the curriculum; and some are considering the development of IE as an applied discipline in its own right. These differences seem to validate Walker's claim that a curriculum's design (i.e. "the set of relationships embodied in the materials-in-use") is determined not by circumstance, but by the "choices that enter into its creation". The choices made in the design of the different institutional curricula signify curriculum designers' explicit and implicit reliance on the "natural and conventional principles in their platforms and their deliberations" (Walker 1971:62), even though they are "condensations of practical experience" rather than "tested propositions" (Walker, 1971:63). Notwithstanding the presence of explicit curriculum design principles (i.e. outcomes, content, teaching/learning approaches and structure) that contribute to standardisation, none of these curricula are simply "a collection of objects, ... a list of objectives, (or) a set of learning experiences". They are "a set of deliberated design decisions" (Walker, 1971:63) emerging from a logical consideration of different viewpoints, different arguments for and against alternative decisions/choices, and different institutional cultures, policies and procedures. The accommodation of differences like these reflects an implicit understanding of and adherence to the principles espoused in anthropological theories on the importance of

both acknowledging and accommodating differences if development initiatives are to be valued by and be beneficial to all concerned (see Chapters 4 and 5).

6.4 Conceptualising the Information Ethics Curriculum Model

The decision to develop a curriculum model was the result of a recommendation by delegates at the 2010 Botswana conference to develop teaching/learning content, akin to the UNESCO e-governance Toolkit, with guidelines for teaching and learning rather than a curriculum that spelt out exactly what had to be taught and learnt and how this should be done. The use of curriculum frameworks, rather than curriculum models that reflect a particular curriculum orientation – i.e. content (Kelly, 1989); product (Bobbitt, 1918; Tyler, 1949; Spady, 1981, 1988, 1992, 1994); process (Stenhouse, 1975); or praxis (Doll, 1993), reflects a relatively new, post-modern approach to curriculum design; one that is informed not only by content, process and product as curriculum components, but also by an eclectic mix of philosophical orientations (Malan, 2001).

Curriculum models and frameworks are not curricula: they serve only as paradigms for curriculum design. The main difference between them is that curricula tend to be prescriptive while curriculum models and frameworks are mostly descriptive. Regardless of its orientation – content, product, or process – a curriculum would not only stipulate the outcomes, but would also prescribe/specify the content that must be covered in terms of each theme/topic, the teaching-learning methods that should be employed, and the procedures that should be followed to determine learner competence and progression. A curriculum framework, on the other hand, would stipulate only the purpose and outcomes or desired results of teaching and learning. Indications of themes/topics to be covered and approaches to teaching, learning and assessment (if included) would be no more than suggestions. Consequently, they provide prospective curriculum designers with a frame of reference within which they could develop curricula appropriate to the teaching of a specific subject or discipline. Informing the devolution of curriculum design to institutions is the assumption that it might minimise the gap that often occurs between the

“ideal curriculum” (the paper version) and the *“actual curriculum”* (the one eventually being taught in classrooms and lecture halls). (Malan, 2001).

Informed by this assumption, the Information Ethics Curriculum Framework therefore stipulates only the purpose that should be served by curricula, the desired outcomes of curriculum delivery, the themes and topics that ought to be addressed to achieve the outcomes, and the principles by which these should be directed. While it includes approaches to teaching, learning and assessment, as well as resource types that could be used to facilitate learning, these are suggestions rather than prescriptions. Neither the credits to be allocated to curriculum units nor the time allocated to them are specified, since the ways in which their content is offered – as stand-alone units, as cross-disciplinary or inter-disciplinary courses, or as themes/topics integrated into existing programmes – would be determined by individual institutions. Its purpose is not to replace existing university programmes/curricula but to add an extra dimension to them: the opportunity to create in students an awareness of the consequences that the irresponsible or unethical use of ICTs in their personal and professional career lives could have for themselves, for others and for the development of their countries as information and knowledge societies. (Malan, 2001).

It thus seems that towards assisting institutional curriculum designers in the design of Information Ethics curriculum offerings, the curriculum framework presented here should indicate what the outcomes of each unit should be. It should also list themes and topics deemed critical to the development of Information Ethics, knowing, doing and being, and it suggests different approaches to Information Ethics teaching, learning and assessment. In addition, it indicates the principles that should inform the selection of curriculum content, teaching-learning resources, and decisions on teaching, learning and assessment methods.

6.5 Principles for the design of the Curriculum Model

The principles informing the design of the Information Ethics Curriculum Model were derived from inputs made at ANIE curriculum conferences and workshops, as well as by

different theories on the design of curricula in general and the design of higher education curricula in particular. In the sense that it is outcomes-based, the Information Ethics Curriculum Model reflected product-oriented curriculum models (Bobbit, 1918; Tyler, 1949; Gagne, 1967; Spady, 1992). In the sense that it prescribes the inclusion of specific theories (philosophical, descriptive and emancipatory), themes and topics, it reflects content-oriented curriculum models (Kelly, 1980). In the sense that it requires the active engagement of lecturers and students with content and with one another, it reflects praxis-oriented curriculum models (Doll, 1978; Barnett & Coate, 2004). In the sense that it is not a prescriptive curriculum, but a descriptive framework or model for the development of curricula, it reflects post-modern approaches to curriculum design. The only 'prescriptive' guideline in this model is that the selection of content, teaching and learning activities should reflect a mix of descriptive, emancipatory and philosophical theories to ensure that students develop a holistic and critical understanding of Information Ethics (Capurro, 2007).

The choice of knowledge types and teaching-learning approaches described in the Information Ethics University Curriculum Model was influenced by ongoing academic debates on the purpose of education in general, the nature and purpose of higher education, the kind of knowledge to be pursued, and the kind of curriculum most suited to these. Included in these debates were arguments on the merits of pure and applied disciplines respectively. Some arguments claimed that new knowledge is generated only through the study of 'pure disciplines' that pursue knowledge as an end in itself, hence such pursuit is of the greatest value. Others claimed that the pursuit of knowledge is of value only when it is relevant, i.e. if pursued as a means to an end, as is the case in 'applied' disciplines (Muller, 2000).

Also part of the academic debate were the reasons for the pursuit of different knowledge types at different points in time. In this regard, Musson (2006) argues that since knowledge is a social construct, it reflects the values and interests of the historical and social context in which it is produced or pursued. Consequently, it is not the value of the knowledge type itself that is the issue, but the relation between its educational input and

output, and the cultural context that defines a nation's social structure and economic system. In addition to the content of Chapter 4, the knowledge that should therefore be of most value in the Information Age should be that which results in the delivery of "knowledge workers" and information practitioners. Why? Because, according to Drucker the knowledge that workers like these hold in their heads is the "key to production", social and economic development, and the solving of complex and unpredictable problems. (Drucker, 1999)

Thus, the "culminating outcome" (Malan, 2001) or product of education should not be knowledge, but a particular type of person or being. This is also the position of Barnett and Coate (2004), who argue that the purpose of higher education should not be to equip students with knowledge, skills and values – thus filling them with "facts and figures which only accidentally and infrequently have anything to do with the problems and conflicts of modern life" or their "own inner concerns" but to develop their 'knowing (not knowledge), doing (not skills), and being (not values, but self-understanding)" (Barnett & Coate, 2004).

Emerging from arguments like these is the realisation that it is not only the "value attached to particular knowledge types" that changes over time, but also the ways in which they are codified (Musson, 2006). As Muller (2000) and Boghossian (2006) suggest, one such change that might well be necessary as a result of an era characterised by digital dominance and relatively unrestricted and uninterrupted access to information, is the breaking down or transgression of disciplinary boundaries as "a matter of epistemic morality". What would emerge from this is of particular importance to this study, namely a greater "fluidity" (Muller, 2008) between disciplines that will create the opportunity not only for inter- and cross-disciplinary studies, but also for new ways of teaching and learning. The fluidity will eventually not only include inter- and cross-disciplinary but also new technologies and new behaviour and cultural experiences.

The emergence of Information Ethics as a potential academic field of study (Section 2.7.2 and 5.11.1) could perhaps be seen as a forerunner to such changes. In the sense that its emergence is a response to the challenges of the digital Information Age, Information

Ethics is a social construct in which information practitioners or knowledge workers are of particular importance. In the sense that it is aimed at the development of contemplative and critical reasoning abilities (the domain of the 'pure' disciplines), as well as at the solution of human problems caused primarily by the misuse or abuse of ICTs (the domain of the applied disciplines), it is by nature most suited to cross-disciplinary study. Moreover, the principles informing the teaching and learning of Information Ethics reflect the plea made by Barnett and Coate (2004) for the holistic development of students' 'knowing, doing and being' in that it includes the study of a range of philosophical, descriptive and emancipatory theories.

6.6 Design of the Information Ethics University Curriculum Model

The debates referred to earlier, as well as conference and workshop deliberations on its purpose, critical Information Ethics issues, 'standardisation' and implementation, resulted in changes from its original conceptualisation as a relatively prescriptive content-based curriculum to a primarily descriptive outcome-based curriculum model. While the original conceptualisation of its basic structure – a two-tiered (under-graduate and post-graduate) programme – did not change, the means used to 'standardise' it, as well as the ways in which it could be implemented, were reconsidered and, where deemed necessary, adapted to accommodate the needs of participating institutions. What emerged from this process was not (as originally recommended) a prescriptive Information Ethics curriculum, but the descriptive Information Ethics Curriculum Model or framework that is the focus of this section (Bester & Malan, 2015). The latter could be used by universities as a basis or frame of reference for the development of Information Ethics curricula appropriate to their institutional contexts as well as community needs and challenges.

Since the Information Ethics University Curriculum model includes both a post-graduate and an under-graduate component, it is a hierarchical, two-tiered structure. The purpose of Information Ethics teaching and learning at both tiers is the development of students' knowing what Information Ethics is, applying this knowledge in their academic, career and life-worlds, and integrating Information Ethics into their becoming digital citizens in one or more information and knowledge societies. The conceptualisation of these

qualities is, however, somewhat different at these two levels. These concepts and qualities on various levels need further explanation and description. In the following paragraphs the most relevant levels and concepts are discussed.

6.6.1 Post-graduate Information Ethics programmes

Assuming that post-graduate students are in the process of becoming information practitioners and Information Ethics researchers, the emphasis in the post-graduate component of the higher education framework is on the development of research expertise. The content, structure, teaching and learning activities involved in the development of students' research expertise would depend on the degree – Honours, Master's, or Doctorate – that would be conferred on students who had successfully completed the course. Post-graduate Information Ethics research could therefore form part of existing post-graduate coursework programmes, programmes that combine coursework and guided research or, as is typical at doctoral level, programmes that are entirely research-oriented. The proposed Model suggests that, regardless of the level at which students want to engage in Information Ethics-related research, the methods and the Information Ethics issues or problems typical of their academic field should serve as context for Information Ethics research.

What this implies, is that unless Information Ethics content is an integral part of their disciplinary studies, they either have to complete one or more of the under-graduate Information Ethics units prior to embarking on such specialised research project, or one or more of the under-graduate Information Ethics units (discussed later in this chapter) could be added to existing coursework programmes. The themes or topics in could then be explored in greater depth, either from the angle of the discipline concerned or from a multi-disciplinary angle. This would result in a merging of Information Ethics research frameworks, with the frameworks typical of the students' fields of specialisation.

6.6.2 Under-graduate Information Ethics programme

The under-graduate Information Ethics programme, as presented in the curriculum model, consists of five outcomes-based units. Each unit serves to prepare the student on

another Information Ethics concept and level and thus, by implication, serving a somewhat different purpose.

- i) The first unit, *Introduction and Orientation to Information Ethics*, is aimed at giving students a sense of what Information Ethics is and why its application is important – not only in their own lives, but also in the development of their countries as information and knowledge societies. (Focus of Chapter 2)
- ii) The second unit, *Information Ethics and Philosophy*, focuses on the exploration of relationships between Information Ethics (as an applied discipline) and philosophy (as a pure discipline).
- iii) The third unit, *Information Ethics and the Law*, is aimed at familiarising students with media and information legislation in their own countries.
- iv) The fourth unit, *Information Ethics in Southern Africa*, is aimed at exploring the opportunities and challenges associated with the use of digital technologies in a multi-cultural Southern Africa and the thrust towards universal Information Ethics. (Focus of Chapter 4)
- v) The fifth unit, *Information Ethics in Practice/Context*, has the application of Information Ethics knowledge and understanding as purpose. More specifically, it is aimed at giving students the opportunity to base their understanding of the relationship between Information Ethics and the law on contextualised decision making.

The numbers used to refer to the units do not necessarily indicate any prescribed sequence in which they should be offered. As indicated earlier, decisions in this regard will be made by institutional curriculum designers who might decide to offer the units as they are; to break them up into themes and/or topics that could be integrated with existing programmes deemed suitable for the discussion of specific Information Ethics issues; or to combine one or more units so as to develop in students the ability to compare and

critically reflect on different perspectives of Information Ethics. Should they decide to offer the units as stand-alone short courses without changing their content, it is up to them to decide which unit should be offered at which academic level and in which order this should be done. In doing so, they would however have to use the unit outcomes as indications of the academic demands (conceptual understanding and reasoning ability) associated with each unit.

The design of each of these units was informed by one or more questions. Derived, as they were, from the purpose to be served by the respective units, these questions also served as basis for the formulation of unit outcomes. The unit outcomes, in turn, served as criteria for the selection of themes and topics, and gave broad indications of what the focus of teaching and learning should be. Decisions on the specific, detailed 'input' are left to relevant institutional designers and/or lecturers and determined by the composition and academic level of the target group, the time available, and specific objectives of the learning event.

The themes or topics served as basis for the identification of teaching and learning approaches that should create opportunities for students' and lecturers' active engagement with content-related issues, as well as with one another. Since the overall purpose of Information Ethics teaching and learning is to equip students to develop their particular IE bases, such engagements should ideally be exploratory in nature. They should also stimulate the critical analysis of and reflection on Information Ethics theories and practices, power structures influencing people's ICT attitudes, behaviour, moral attitudes and traditions. This could for example be achieved by using news reports or case studies that reflect a moral dilemma or transgression of the law. The use of these approaches is, however, not mandatory: they represent suggestions made by the academics who participate in the design process based on their own experience in the teaching of university students. It is up to the lecturers to find the middle ground between their particular teaching styles and the learning styles of the student groups concerned. The only proviso is that learning activities should multi-faceted and involve all four the

language functions (talking, listening, reading and writing) in varying grouping configurations, namely individual, pairs, small groups and larger groups.

What follows next are the units as they appear in the model or framework, followed by brief explanatory summaries of how they could be implemented.

6.6.2.1 Unit 1: Introduction and orientation to Information Ethics

(a) Learning outcomes

On completion of the unit, students should demonstrate, in ways determined by the lecturer, that they

- have a basic understanding of Information Ethics and the principles underpinning it;
- are aware of Information Ethics issues, their potential impact on society and on the development of information and knowledge societies in a multi-cultural environment; and
- can critically reflect on the application of Information Ethics principles in specific contexts and situations as well as various legal and cultural environments.

(b) Teaching objectives

Lecturers should – in ways deemed appropriate to the students concerned and the context in which the content of this unit is dealt with –

- facilitate students' understanding of the concept Information Ethics';
- give students a sense of Information Ethics as a field of study; and
- provide students with a brief overview of Information Ethics themes covered in other units.

(c) Implementation options

Ideal for the orientation of first-year students

(d) Focus, content and engagement

<i>Focus</i>	<i>Content</i>	<i>Teaching and learning activities</i>
Clarification	<i>Ethics, information and information ethics</i> as concepts	- <i>Analyse/discuss</i> different definitions to obtain a better understanding of the meaning of each concept
	<i>Information types and sources</i> (internet, print media, statistics, word of mouth, research findings, social media, etc.)	- <i>Compare</i> different types of information in terms of their origin/source, type and purpose
	<i>Evolution and value</i> of Information Ethics as a field of study	- <i>Read and discuss</i> selected texts on Information Ethics as a field of study
Information Ethics issues	<i>Impact</i> of converging technologies on human conditions, cultural-based value systems, and behaviour (computers, internet, cell phones, social and news media)	- <i>Narrate and discuss</i> learner perceptions regarding the impact that converging technologies have on cultural, social, learning, work and living environments
	<i>Misuse</i> of information and information communications technology (in personal, academic, professional, governance, business and marketing spheres)	- <i>Analyse</i> media articles and/or personal experiences with the misuse of information - <i>Discuss</i> risks involved in using information communications technology as a means of sharing information (<i>share own experiences</i>)
	<i>Principles</i> for responsible information management (accuracy, transparency and accountability)	- <i>Critically discuss</i> the quality, accuracy, source, function/purpose of different types of information - <i>Discuss</i> the impact of poor information management on the lives of individuals and groups - <i>Brainstorm</i> ways in which information and information communications technology could be managed to minimise risks
Ethical reasoning	Information Ethics as a <i>cultural, values/moral imperative</i>	<i>Critically discuss</i> the negative effect that false or misleading information could have on individuals or groups
	<i>Philosophical perspectives</i> on morality	- <i>Present and compare</i> moral principles derived from different philosophical points of view
	<i>Ethical decision making</i> (moral dilemma discussions, philosophical principles and the MOVE model, for example)	- <i>Use</i> different <i>ethical reasoning techniques</i> to make decisions on Information Ethics matters (what to disseminate or not; to whom; why/why not; how and when)
Contextualisation	<i>Contextual application</i> of information Ethics (within a cultural personal, social, academic, work environment)	- <i>Discuss</i> ways in which Information Ethics could be applied in different real-life, study and work contexts and situations

		- <i>Use knowledge and understanding of Information Ethics and ethical reasoning in the evaluation of real-life incidents, media reports or scenarios dealing with contentious information issues within various cultural backgrounds</i>
	<i>Information Ethics, globalisation and the development of information and knowledge societies</i>	- <i>Share ideas on the relationship between globalisation, information communications technology and the development of information and knowledge societies</i> - <i>Discuss the impact that globalisation and information communications technology have on African traditions and value systems</i> - <i>Critically discuss the value systems and/or the motives of those driving development initiatives</i>
	<i>Information Ethics and the law (synopsis of country-specific media or information laws and the legal consequences of breaking these)</i>	- <i>Discuss media articles and reports on legally contested information issues (secrecy, freedom of speech, censorship, etc.)</i>

6.6.2.2 Unit 2: Information Ethics and philosophy

(a) Learning outcomes

On completion of the unit, students should demonstrate, in ways determined by the lecturer, that they

- have established their own moral base for decision making and behaviour in relation to the use of ICTs;
- have a critical understanding of the ways in which the misuse of information and ICTs undermine basic human rights within various legal frameworks and multi-cultural environments;
- are able to apply critical thinking and reasoning skills in the analysis and resolution of Information Ethics issues and challenges; and
- are committed to the responsible use of information communications technology in different contexts and situations.

(b) Teaching objectives

Lecturers should – in ways deemed appropriate to the students concerned and the context in which the content of this unit is dealt with –

- facilitate the development of students' critical thinking skills, and

- encourage their commitment to using information and ICTs with due regard for a variety of societal values, cultures and the rights of others.

(c) Implementation options

- As a stand-alone short course, either preceding or following the unit dealing with Information Ethics and the law
- As a stand-alone short course preceding the unit dealing with Information Ethics in Africa
- Merged with the unit dealing with Information Ethics and the law, or with the unit dealing with Information Ethics in Africa
- As a unit attached to existing philosophy programmes
- Integrated with relevant themes or topics in existing programmes

(d) Focus, content and engagement

<i>Theme</i>	<i>Content</i>	<i>Methodology</i>
<i>Philosophy past and present</i>	A mix of classical and modern philosophies relevant to Information Ethics issues and selected by the institution concerned while using Southern African philosophies to create multi-cultural context	<i>Discuss and analyse</i> selected philosophies with a view to extracting generic moral principles
<i>Philosophy and critical thinking</i>	<i>Different perspectives</i> on and/or approaches to the enablement of critical thinking appropriate to particular target groups or institutions	<i>Analyse and evaluate</i> selected philosophical arguments with reference to the premises on which they rest and the principles that they propagate
	<i>Ethical reasoning</i> as basis for responsible decision making and behaviour	<i>Construct</i> own philosophical arguments on different issues
<i>Philosophy and Information Ethics</i>	The <i>impact</i> of technology on human behaviour, multi-cultural communities and value systems	<i>Critically discuss</i> the impact of converging information communications technologies on culture, values, human rights and human behaviour
	<i>Violations</i> in the use of information and/or information technology as ethical issues (<i>e-waste, hacking, identity theft, pornography, etc.</i>)	<i>Critically analyse</i> case studies illustrating responsible and irresponsible use of information or information communications technology
	The <i>evolution</i> of Information Ethics as a practice and field of study	<i>Review and discuss</i> academic texts dealing with the evolution of Information Ethics

	<i>Moral (philosophical) principles and Information Ethics (honesty, integrity, accuracy, trust, responsibility, Ubuntu, social justice, etc.) within multi-cultural communities</i>	<i>Conduct theoretical debates on the reasons for Information Ethics violations and ways of preventing their occurrence</i>
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6.6.2.3 Unit 3: Information Ethics and the Law

(a) Learning outcomes

On completion of the unit, students should demonstrate, in ways determined by the lecturer, that they have

- acquired sufficient knowledge of their own country's information and media laws to know when these are breached and what the consequences of such breaches would be; and
- developed a critical awareness of citizens' rights and responsibilities in the field of information and information communications technology, as well as of potential tensions/conflicts between cultural, legal and philosophical perspectives on information rights and responsibilities.

(b) Teaching objectives

Lecturers should – in ways deemed appropriate to the students concerned and the context in which the content of this unit is dealt with –

- create opportunities for students' engagement with legislation and court cases related to the State's invasion of citizens' rights and/or citizens' abuse of IE-related human rights.

(c) Implementation options

- As a stand-alone short course either preceding or following the unit dealing with Information Ethics and Philosophy
- As a stand-alone short course following the unit dealing with Information Ethics in Africa
- Merged with the unit dealing with Information Ethics and the law, or with the unit dealing with Information Ethics in Southern Africa

- As a unit attached to existing Law programmes
- Integrated with relevant themes in existing programmes dealing with contextual legal issues

(d) Focus, content and engagement

<i>Theme</i>	<i>Content</i>	<i>Methodology</i>
<i>Information Ethics and human rights</i>	Human rights declarations (<i>UDHR, National Constitution and/or Bill of Rights</i>)	- <i>Identify, list and discuss</i> information-related human rights in the United Declaration of Human Rights (UDHR) and the Constitution or Bill of Rights of the country concerned
	Information-related human rights (<i>access, human dignity, privacy, freedom of expression, intellectual property</i>) within <i>Southern African countries and multi-cultural communities</i>	- <i>Reflect on and critically discuss</i> (with reference to the <i>reading of academic texts</i>) ways in which the use of information communications technology could affect/undermine information-related human rights
<i>Regulation of information and the media</i>	Information & media laws (<i>national & international</i>)	<ul style="list-style-type: none"> - <i>Make an in-depth study and discuss</i> legislative and other measures (<i>national and international</i>) taken to regulate access to and dissemination of information on various fronts - <i>Discuss</i> typical violations of these regulations (<i>own experience or media reports</i>) and the consequences associated with these (<i>pornography, libel, character assassination, cyber-bullying, hacking, etc.</i>) - <i>Distinguish</i> between regulatory measures that undermine and protect citizens' information-related human rights (e.g. <i>ensorship; surveillance, collection and dissemination of private/personal information</i>)
<i>Information Ethics, Philosophy and the law</i>	Correlation of and conflict in legal and philosophical positions on information-related matters (<i>human rights versus human responsibilities</i>) in <i>multi-cultural societies</i>	<ul style="list-style-type: none"> - <i>Determine</i> whether any of the philosophical principles on morality are reflected in the information and media regulations concerned (rights versus responsibilities, FAIFE, etc.) - <i>Debate</i> the extent to which the legislation concerned promotes or ignores the need for Information Ethics - <i>Critically discuss</i> specific violations of media/information regulations that indicate possible tensions in legal and philosophical positions (<i>rights versus responsibilities, appropriateness, etc.</i>) and <i>suggest</i> ways in which such conflicts may be resolved

6.6.2.4 Unit 4: Information Ethics in Southern Africa

(a) Learning outcomes

On completion of the unit, students should demonstrate, in ways determined by the lecturer, that they have

- read widely on and can critically discuss Information Ethics issues in Africa and the Southern African region;
- developed an appreciation of Southern Africa as a developing information and knowledge society;
- become critically aware of the ways in which African and other multi-cultural knowledge and value systems affect the development of information and knowledge societies in different African countries; and
- committed themselves to addressing the challenges that Southern Africa faces in becoming an ethically competitive information and knowledge society.

(b) Teaching objectives

Informed by the purpose of the unit, namely to *reflect* on the development of Africa as an information and knowledge society, lecturers should base the selection of teaching/learning activities on students' ability to

- write literature reviews of academic texts; and
- defend their own position on contentious issues with regard to such reviews.

Teaching/learning activities should also reflect *African ways of thinking and learning*, much of which require talking, listening and working together.

(c) Implementation options

- Integrate generic philosophical and legal themes into a unit or module on African development in the field of Information Ethics.
- Start with this unit (*Information Ethics in Africa*) and use it as basis for the acquisition of generic cultural, philosophical and legal knowledge in Southern Africa.
- Integrate the content of this unit with that of all the other units to maintain an explicit focus on Southern African development.

(d) Focus, content and engagement

Theme	Content	Methodology
Information and knowledge societies	<i>Features/characteristics</i> distinctive of information and knowledge societies (<i>attitudes, systems, use of converging technologies</i>)	<ul style="list-style-type: none"> - <i>Identify features (attitudes, systems, use of converging technologies)</i> in academic texts on information and knowledge societies - <i>Critically discuss</i> indicators that measure and compare the status or ranking of information and knowledge societies - <i>Analyse case studies (local and international)</i> that reflect the existence of different tiers of knowledge and information societies
	<i>Evolution and purposes</i> served by information and knowledge societies in the 21 st century	<ul style="list-style-type: none"> - <i>Critically reflect, with reference to relevant academic texts</i>, on the relationship between technological development, globalisation and the evolution of information and knowledge societies across the world
Africa as an evolving macro-level information and knowledge society	<i>Current status</i> of Africa as a whole and of Southern African multi-cultural countries individually as information and knowledge societies	<ul style="list-style-type: none"> - <i>Discuss /compare</i> case studies illustrating different African countries' status or ranking as information and knowledge societies and/or initiatives taken towards further development
	<i>Opportunities and challenges</i> in the development of information and knowledge societies in Africa <ul style="list-style-type: none"> - African knowledge and value systems - African oral and narrative traditions - Socio-political and economic factors - Rapid pace at which information communications technology evolves and changes - Infrastructural factors 	<ul style="list-style-type: none"> - <i>Critically reflect on and discuss</i> the ways in which African traditions, values and knowledge systems could be used to either hinder or support the development of information and knowledge societies on the African continent
Information Ethics in Africa and Southern Africa	<i>The use and misuse</i> of information networks and technologies in Africa <ul style="list-style-type: none"> - Personal sphere (<i>e-mails, e-books, music, finance and entertainment</i>) - Social sphere (use of internet and mobile devices – <i>Skype, Twitter, Facebook profiles</i>) - Educational sphere (<i>internet as access to information; use of Wi-Fi technology in institutions of learning</i>) - Business (<i>advertising, websites, e-billing, property transactions, e-commerce</i>) - Governance (<i>e-governance, evolving data-driven systems, communication, propaganda</i>) Cloud computing, robotics and other emerging trends	<ul style="list-style-type: none"> - <i>Narrate and discuss</i> learners' own use of and/or exposure to technologies used for the purposes listed in the content column of this table - <i>Compare</i> experiential narratives and international case studies - <i>Critically discuss</i> available statistics, media reports and other case studies

6.6.2.5 Unit 5: Information Ethics in practice

(a) Learning outcomes

On completion of the unit, students should demonstrate, in ways determined by the lecturer, that they

- can use information and information communications technology in a multi-cultural aware, morally responsible and accountable manner; and
- are able and willing to act as Information Ethics change agents who share their own knowledge, understanding and skills in the field of Information Ethics with others in their sphere of influence.

(b) Implementation options

While the outcomes for Unit 5 are the same, irrespective of the disciplinary or work context in which application occurs, the actual content and delivery mode should ideally be determined by a team consisting of academics and/or experts in the discipline or career field concerned.

Cross-disciplinary integration could take place throughout the entire programme, with Unit 5 disappearing as a separate unit but featuring as application exercises in all subject areas and at all year levels. Required applications should, however, be aligned to the unit content that preceded the application exercise – for example, critical discussion of cultural/legal issues following the acquisition of cultural/legal knowledge and understanding. Also, the kind of application required should be aligned to the academic and/or practical standards applicable at the different year levels of the subject concerned.

(c) Focus, content and engagement

<i>Theme</i>	<i>Content</i>	<i>Activities</i>
<i>Practical application of Information Ethics in different contexts and situations</i>	<i>Responsible use of information and information communications technology, academic learning or career-related activities</i>	- <i>Define/describe ethical conduct in terms of a relevant self-selected context that could include cultural differences, traditions and work environment behaviour</i>

	<p><i>Knowledge of and critical reflection on the presence of information ethics in academic protocol and/or professional codes of conduct</i></p>	<ul style="list-style-type: none"> - <i>Develop a values-based code of conduct applicable to the profession or occupation for which this discipline/subject is a pre-requisite</i> - <i>Describe the ethical dimensions of processes to be followed in the development and implementation of codes of conduct</i>
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6.7 Suggestions for the Design and Implementation of Institutional Information Ethics Curricula

A curriculum is not the document that specifies what has to be learnt, or the content that is prescribed. A curriculum emerges from the engagement of learners with the content, the teachers/lecturers, and one another (Doll, 1993). Therefore, the training of curriculum facilitators is critical to effective teaching and learning. Given the inter-disciplinary nature of an Information Ethics curriculum, its implementation cannot be a one-person show. It would be best to train a multi-disciplinary team of lecturers/facilitators in the use of some or all of the activities mentioned in the Framework. Such a team would ideally include a philosopher, an *information communications or library and information science specialist*, an *anthropologist or sociologist*, and a *person with legal knowledge and expertise*. In addition to their knowledge of and expertise in their own fields of specialisation, team members should be interested in and committed to the promotion of Information Ethics in Africa.

6.7.1 Suggestions for the selection of Information Ethics curriculum content and methodologies

Four principles should inform the selection of curriculum content, decisions taken on teaching and learning activities, the resources to be used, and the assessment techniques/methods to be employed. All of these principles should be 'designed down' from the pre-determined learning outcomes:

- i) Curriculum content should enable students to achieve the pre-determined outcomes. By implication, the selected content should include descriptive, emancipatory and

philosophical theories that would enable students to develop conceptual, contextual and procedural knowledge and skills appropriate to the particular academic year level at which courses are offered.

ii) Teaching and learning activities should be aimed at the development of students' *cognitive* and *practical* skills, as well as their *moral attitudes*, thus enhancing their "knowing, doing and being" (Barnett & Coate, 2004). More specifically, as proposed by Capurro (2007), these activities should create opportunities for students to do the following:

- Identify and describe power structures in their own country, institution or work context that exert an influence on information and communication attitudes and practices.
- Describe, discuss and compare the application of Information Ethics in the public and private sector in both their own and in other countries in the rest of the world.
- Critically reflect on moral (*life-world*) attitudes and traditions locally and internationally to determine how these affect attitudes and behaviour in the information and communications domains.
- Analyse and deconstruct past, existing and emerging myths (*general and specific*) on the use of information communications technology and the information life-cycle.
- Identify, uncover and critically discuss hidden contradictions and intentions in information theories and practices.
- Critically reflect on the politics of Information Ethics.
- Relate acquired knowledge and understanding of Information Ethics to other disciplines – e.g. anthropology, sociology, political science, information studies, media studies, computer science, social informatics, law, psychology, liberal arts, and library science – so as to gain a holistic perspective on human communication as a phenomenon.
- Compare different perspectives on Information Ethics as reflected in, for example, natural and common law, different philosophical traditions (locally and globally), and professional codes of conduct (medicine, media, research, law, etc.)

- iii) Teaching-learning resources should lend themselves to the acquisition of both kinds of knowledge (*conceptual and contextual*) and the development of students' 'becoming' (their knowing, doing and being). Journal articles and other academic texts are critical to higher learning, but should be supplemented with case studies and moral dilemma scenarios. They should also be contextualised in terms of the subject/discipline that serves as context for the teaching of Information Ethics and be adapted to the academic levels at which IE is offered. While these are not prescribed, the range of available ACEIE readers and workbooks (available on the ACEIE website) may be useful as teaching-learning resources.
- iv) Assessment should be aimed at determining the extent to which individual students have achieved the pre-specified or negotiated learning outcomes. By implication, it should not only intend to determine students' knowing, doing and being', but should also reflect the ways in which these skills were developed. In other words, assessment techniques/methods should not only attempt to determine the extent of students' knowing, doing and being, but should also reflect the ways in which they developed these. To this purpose, the IE framework suggests a combination of formative and summative assessment methods.
- v) Formative assessment
- is aimed at monitoring student progress towards the achievement of set learning outcomes so as to identify and address emerging learning problems/barriers;
 - is essentially diagnostic in nature;
 - should ideally take place during learning, that is, while students are engaged in various learning activities, such as *discussion groups, case study analyses, and/or field work*;
 - typically requires from lecturers to observe students' engagement with the content and with one another, and to jot down diagnostic 'field notes' that could

- serve as basis for the design of support or intervention measures if and when these are deemed necessary;
 - has the evaluation of student ability as purpose; and
 - takes place at culminating points in the teaching-learning process – end of term, end of year, etc.
- Summative assessment
- is aimed at determining whether students have achieved the outcomes and therefore qualify for progression to a higher level of learning;
 - is usually more formal, with lecturers evaluating learner competence in oral, written or practical assessment tasks;
 - results would determine whether a student passes or fails the course or subject concerned, therefore both the standard and the results of summative assessments should be monitored externally, ideally by other universities that also offer Information Ethics courses.

6.8 The Digital Wellness Toolkit

The first indication that there was a need to consider the development of Information Ethics curricula/programmes was the release of the White Paper on e-Education by the RSA government in 2004. This White Paper was to serve as basis for the Department of Education's Guidelines for Teacher Training and Professional Development in ICT (2007), as well as for its Integrated Strategic Planning Framework for Teacher Education and Development in South Africa for 2011 to 2025. Private sector companies, in response to the release of the White Paper, started forming partnerships with the Department of Education with a view to not only provide schools with the requisite digital teaching/learning technologies and teaching/learning materials, but also to equip teachers with the knowledge and skills they required to implement e-learning in their classrooms.

Having taken cognisance of these developments, the ACEIE realised that, although Information Ethics teaching for schools was not one of the foci included in the original Memorandum of Agreement between the Department of Communications and the

University of Pretoria, it might have considered broadening its curriculum development focus to also include school education. The urgency to do so was confirmed at two workshops – one hosted by the DoE (Department of Education) in the Eastern Cape (16 November 2012) and another hosted by ELA on e-Learning Africa in Namibia (20-31 May 2013).

In April 2014, during a Practitioners Workshop on ICT in Education in Pretoria, the perspectives of two additional stakeholder groupings – the Human Sciences Research Council (HSRC), and the Department of Science and Technology (DST) – were infused into the evolving curriculum development platform. Later that same year, following its participation in a University of Pretoria Ethics in ICT for Schools project sponsored by INTEL, the ACEIE and INTEL decided to join hands in the development of school-oriented Information Ethics programmes. Following this decision, INTEL and the ACEIE respectively presented papers on INTEL Education's Digital Safety Curriculum – a 6-hour course for secondary school learners – and the ACEIE's views on the process that could be followed in the development of a school-oriented Information Ethics curriculum/programme.

In late 2014, with the signing of the new (2014-2017) Memorandum of Agreement between the DTPS and the University of Pretoria, Information Ethics education for schools and communities officially became an ACEIE responsibility. More specifically, the new MoA required the ACEIE to also infuse its IE focus into the DTPS's community health projects. That community IE teaching was necessary, was also highlighted at an Office of the Premier (OTP) conference in the Eastern Cape. On this occasion, one of the traditional leaders who attended the conference and took note of the development of the Digital Wellness Toolkit indicated that rural communities desperately needed training of this kind. In the end, stakeholders and role players included the African Centre of Excellence for Information Ethics, the University of Pretoria, the South African Branch of INTEL Education, the National Institute for the Deaf, the Department of Telecommunications and Postal Services (formerly known as the Department of Communications), the Department of Basic Education, the Western Cape Education Department, the South African National Commission for UNESCO, the South African

Chapter of the UNESCO Information for All Programme (IFAP) , and the Departments of Education in Kenya and Malawi. The platform that should have served as basis for the Toolkit design therefore kept on changing, making the eventual curriculum development process more complex, more chaotic and, more confusing (Walker, 1971) than that of its university counterpart.

6.8.1 Platforms for the Digital Wellness Toolkit

The platform on which Digital Wellness Toolkit was based on but a differed version from that of the Information Ethics university curriculum in a number of ways. In the first instance, the design of the Toolkit was not a proactive recommendation by a relatively uniform stakeholder group: it was simply a response to concerns expressed at diverse conferences, workshops and meetings regarding teachers' unpreparedness for the implementation of e-learning at schools (Section 5.11.2). Thus it was a reactive response to government policies on e-education on the one hand and requests by information technology practitioners and communities on the other.

Secondly, the thrust for the development of the Digital Wellness Toolkit came from various individuals and groups with different needs, different levels of technological literacy and different circumstances. Thirdly, whereas the development of the university curriculum was a bottom-up, pro-active process initiated by academics who would be responsible for the delivery of the curriculum at their respective institutions, the Toolkit was not designed by those for whom it was intended (first and foremost for teachers, then for school children and their parents, and later, for community leaders); it was designed by external curriculum designers associated with the ACEIE and INTEL respectively.

Fourthly, while the university curriculum was developed for universities across Africa, the Toolkit was initially developed for Southern Africa. When countries on the continent indicated an interest in using it, it had to be adapted to suit different contexts. Since these adaptations required its 'localisation' to the contexts, cultures and needs of the countries concerned, more and more people became involved – not only in its implementation, but also in its development and/or design.

6.8.2 Toolkit Deliberations

Since the Toolkit was initially aimed at the training of school teachers who would as ‘master trainers’ have to teach their fellow teachers how to ensure the digital wellness of learners in e-learning classrooms, Toolkit designers assumed that it would be possible to adapt the IE University Curriculum Model to the needs of teachers. However, when this design was presented to the Metropole East Education Department (MEED) in the Western Cape, it was rejected on the grounds that it was “too theoretical”, that what was necessary was “a simplistic module to kick-start things, related to information ethics, digital footprints, dangers of the net, and protecting teacher and learners, all presented in a user-friendly manner” (Walker, 2014).

The ACEIE then developed a Facilitators’ Guide, a Participants’ Activity Book, and a Concept and Resource booklet that focused specifically on the training of teachers who would run workshops aimed at cascading the knowledge and skills they had acquired to other teachers. Due to a lack of funds, the project was however shelved. Instead, the MEED invited the ACEIE and INTEL, which had already developed a Cyber Security series of booklets for secondary school learners and teachers, to address a Principals’ Conference in the Western Cape (Section 5.11.2) on the need for digital wellness and cyber safety in the application of e-learning at schools.

The content and purpose of these booklets were shared with school principals at a subsequent Principals’ Workshop organised by the WCED. Each principal also received a flash drive containing INTEL’s e-book, *Transforming Learning: A Buyers’ Guide*, and a summary of its *Digital Safety Curriculum for Schools*. Principals’ enthusiastic response to these presentations convinced the ACEIE and INTEL that there was sufficient justification for them to proceed with the development of a digital wellness course that could be used by schools in general, rather than by Western Cape schools only. They agreed, moreover, to use INTEL’s existing *Digital Safety Curriculum for Schools*, which targeted secondary school learners, as basis or platform for the development of a localised South African Model.

The six-hour INTEL curriculum content was used as a source and packaged in the form of two booklets – one for learners and one for teachers/facilitators. Curriculum content was structured as hands-on activities, group discussions, case studies, scenario cards, reflections and worksheets. Explanatory notes as well as appropriate responses to these were included in the Facilitators' version only. However, since this curriculum was originally developed for use in India, it had to be 'localised' to suit South African conditions. Also, since e-learning in Southern Africa was not restricted to secondary schools, the package would also have to include something for primary school learning. Because the workshop package (Manual for Facilitators and the Activity Book of Participants) was being adapted to accommodate the requests of traditional leaders for community development and because of the MoA emphasis on the latter, the title would have to change to something simpler and more target-friendly.

6.8.3 The Digital Wellness Toolkit Design Process

The first step in the 'redesign' of the INTEL package was to adapt the workshop package to also include community leaders or activists as digital wellness facilitators. The second step was to 'localise' the activities in the INTEL secondary school curriculum package so that South African teachers and learners would more easily identify with them. The third step was to include two additional sections – one on South African media and information laws, and the other on Information Ethics – that were deemed necessary in the light of disturbing media reports on the illegal and irresponsible use of social media in the country. The fourth step was to develop a package for primary school teachers and learners because they had not been targeted in the secondary school package. Following inputs from the Department of Basic Education, the booklet for primary school learners was however adapted to one targeting their parents. This change was made due to the difficulty of developing a single booklet for all primary school learners, given differences in their literacy levels in different grades. In the end, only two of the booklets (those for secondary school learners) were explicitly derived from and based on INTEL's Cyber Safety package.

Tentatively completed drafts of the model were repeatedly presented for comment to stakeholders and role players. Once completed, the model was printed, packaged and posted on the ACEIE website (<http://www.up.ac.za/en/african-centre-of-excellence-for-information-ethics/article/2109737/digital-wellness-toolkit>). By making the model available in both electronic and hard copy, the ACEIE committed itself to the notion of open learning. Since there are no restrictions on its use and no royalties to be paid for its use, anybody who wishes to conduct digital wellness workshops – in their workplace, community or educational institution – is free to download whichever booklet or package of booklets s/he needs, without any cost to her/himself.

6.8.4 The Final Digital Wellness Toolkit

The initial plan was to develop a toolkit that would comprise five booklets, namely the ACEIE Concept and Resource booklet, two Teachers' Manuals – one for secondary school teachers and one for primary school teachers – and two Learner Activity booklets – one each for secondary and primary school learners (Bester e-mail2: 13/12/2014). In the end though, the Toolkit consisted of nine booklets – the three ACEIE booklets originally designed for the MEED teacher training workshops, plus two Teachers' Manuals, an Activity Booklet for Secondary School Learners, an Activity Booklet for Primary School Learners and their Parents, and a Pre-School Booklet with digital wellness rhymes.

The workshop package – i.e. the Facilitators' Manual, Participants' Activity Book as well as the Concept and Resource Book – is generic, hence it can be used as a reference and source for the training of facilitators at university, school and community level. Two of these (one for secondary school teachers and one for primary school teacher) are specifically designed to help teachers ensure the safety of the learners in their care. One of the booklets, an Activity Book, is aimed specifically at secondary school learners, another is aimed at the parents of primary school children, and the last one is meant for students and/or community leaders who want to run workshops in their own communities. Details of the content of each of are provided in the sub-sections that follow.

6.8.4.1 Facilitators' Manual

As indicated earlier, the Facilitators' Manual (Bester & Malan, 2015) was originally designed to assist Western Cape district officials, school principals, and senior teachers tasked in the training of teachers who had to implement e-learning in school classrooms. It was assumed that the teachers who would be trained as facilitators would already have been trained in the technical and methodological aspects of e-learning at schools, but they had not been alerted to the cyber safety and ethical dimensions associated with the use of digital technologies as learning tools. In its final form, the Facilitators' Manual is however also suitable for community and workplace training on Information Ethics matters.

Given its primary thrust, namely to guide workshop facilitators, the Foreword of the Manual focuses on the facilitation and management of workshops. It clarifies the concept 'facilitation', provides suggestions on how to manage workshops to effectively facilitate learning, and indicates which techniques are most effective for the active engagement of workshop participants. The approaches, teaching methods and techniques suggested in this section are not meant to be prescriptive: they are merely examples of how different themes could be explored/addressed. Workshop facilitators and teachers are encouraged to replace, adjust or add to these techniques/approaches based on their own experience and the needs of their particular target groups.

The content in the Manual is organised in the form of five thematic units – Digital Citizenship; Digital/Cyber-Security; Digital/Cyber-Safety; Digital/Cyber-Crime; and Information Ethics. Suggestions have been included regarding the techniques or methods that facilitators could use to introduce each theme, to engage participants in activities related to the theme, to debrief them after each activity, and to wrap up the session devoted to a particular each theme. Answers/responses related to participant activities are included in the Manual, but the detailed description of each activity appears only in the Participants' Activity Book. It follows that facilitators have to use the two booklets in conjunction with each other.

Given its original purpose (to support facilitators tasked with the training of Western Cape teachers), scenarios and activities included in the manual were originally school- and classroom-oriented. However, in response to requests from other role players and interested parties (e.g. the DTPS, traditional leaders, and community leaders), the final Facilitators' Manual now focuses on the training of adults in general, and includes suggestions for alternative scenarios and/or activities that are more appropriate and/or relevant to different target groups.

The Manual ends with a Bibliography that refers facilitators to additional sources, should they want more information on cyber-safety, Information Ethics and digital wellness as a whole.

6.8.4.2 *Participants' Activity Book*

Like the Manual for Workshop Facilitators, the Activity Book (Bester & Malan, 2015) was originally designed with the training of educators in mind. Consequently, the scenarios, case studies and activities included in it are primarily school- and classroom-oriented. Whereas the final version of the Manual for Facilitators includes suggestions for alternate scenarios and activities, the Activity Book does not. The responsibility to effect the necessary changes is left to trained facilitators, based on the assumption that they would be in a much better position to determine exactly what their target groups need and how to go about facilitating their learning.

The themes addressed in the Activity Book – Digital Citizenship, Digital/Cyber-Security, Digital/Cyber-Safety, Digital/Cyber-Crime, and Information Ethics – are, however the same as in the Manual for Facilitators, as is the order in which they appear. What is different is that the activities included in the Activity Book are described in sufficient detail for participants to know exactly what is expected of them. Open spaces have also been left for them to jot down notes or write down answers to the questions that have to be answered during the course of activities.

6.8.4.3 *Resource and Concepts Booklet*

The *Resource and Concepts* booklet can be used on its own or in conjunction with any of the other booklets. It was one of the first publications of the ACEIE after its establishment in 2012. The first edition, a Concept Workbook (Le Sueur & Bester, 2013), targeted “researchers, scholars, government officials, non-government organisations and community-based organisations” who needed resource to help with definitions and an “information ethics vocabulary”.

Given that all of these were either non-professional information practitioners or students who would eventually enter the field of Information Ethics, the workbook did not include in-depth discussions of concepts or philosophical content. Rather, alphabetically arranged Information Ethics concepts were explained by means of ‘descriptive paragraphs’, each paragraph followed by ‘a one sentence definition encapsulating... (its) core meaning’. Ample open spaces were left after each definition so that users could add their own notes, examples, or explanations (ACEIE, 2013:3). The final version, published in 2013, identified the need for further support and consequently added some guidelines for facilitators on the most effective way of using the workbook at/during training workshops.

The Resource and Concepts (Bester & Malan, 2015) booklet included in the final toolkit is more comprehensive. In addition to the definitions and explanations of Information Ethics concepts in the original workbook, the Toolkit’s Resource and Concepts booklet also includes a list of acronyms, useful internet links, questions frequently asked by novice ICT users, advice to parents on cyber-bullying, and the DoE’s e-safety guidelines for schools. The Resource and Concepts booklet could therefore serve as a valuable resource and/or reference book for facilitators, workshop participants, community developers, school teachers, management teams and governing bodies.

6.8.4.4 *A Roadmap for Campus Community Engagement*

The Roadmap for Campus Community Engagement (Klazar, Jordaan, Malan & Bester, 2015) describes a project that required Information Science students at the University of

Pretoria to interact with different communities on ethical issues related to the use of ICTs. Starting with a background, it describes the project, indicates why students are required to get involved in community outreach programmes, and emphasises the importance of cultural sensitivity in the running of such projects. A description of the general aims, processes and outcomes of the project is followed by brief summaries of four of the most successful projects. The booklet concludes with a discussion of lessons learnt during the course of the project and highlights the importance of students ensuring that they

- know who their target group is and what their ICT needs are;
- know what the objectives of the volunteer programme are and commit themselves to achieve these;
- are aware of the cultural and language challenges they might have to overcome
- have thought of strategies they could use to overcome these;
- are aware of and sensitive to legislative matters associated with community outreach programmes;
- are aware of the way in which their attitudes could affect community members and the outcome of their outreach efforts; and
- realise the importance of good planning, the forming of healthy partnerships, the need to respect and preserve the human dignity of participants, acknowledging of achievements, and participation in post-project debriefings.

The Roadmap is included in the Toolkit for four reasons: (i) it highlights challenges that anyone wishing to run a community project might face; (ii) it includes lessons learnt from the UP project that may be of use to students at other universities who want to engage in community outreach projects of their own; (iii) it could serve as an inspiration to others regarding the difference that a little enthusiasm, creativity and minimal effort could make to the development of responsible and ethical information and knowledge societies on the continent; and (iv) its content and guidelines are generic enough to be applicable to different contexts and purposes across Africa and elsewhere in the world.

6.8.4.5 *Activity Book for Secondary School Learners*

The Activity Book for Secondary School Learners (Bester & Malan, 2015) comprises a mix of localised content from INTEL's original Digital Safety Curriculum and a school-oriented adaptation of the Cyber Law and Information Ethics sections of the Activity Book for Workshop Participants.

Targeting Grade 7 to 12 learners, the booklet starts with an introduction and orientation section aimed at sensitising learners to the importance of using digital technology in ways that will not put their own or other users' safety and privacy at risk. It also indicates what learners should know and be able to do once they have worked through the booklet. The first two activities in the booklet – a quiz and a mix-and-match exercise – challenge learners to reflect on what they already know about the potential threats associated with the use of the internet, while the third activity enables them to assess their familiarity with digital wellness discourse.

The rest of the booklet contains short readings on specific safety risks, followed by activities that require learners to critically engage with and/or reflect on the issues raised in the readings. The readings in Activity 4, which describe common digital threats, are followed by an activity in which learners have to identify risks facing an imaginary user, decide whether the user should proceed with the activity, and reflect on the possible consequences if s/he did. The readings in Activity 5 provide learners with tips and guidelines on how to safeguard their cell phones and computers against different kinds of threats – malware infection, illegitimate access, and invasion of their privacy. In the Activity following the tips, learners first have to share in groups the problems they probably already experienced in this regard, then indicate how they overcame these, and lastly physically design safety signs representing these risks for display in their classrooms.

Activities 6 and 7 provide learners with steps they could take to keep themselves and their reputations safe during online activities. Once again they are invited to share with their peers any 'unpleasant experiences' they might have had in this regard. They are then presented with a number of imaginary scenarios in which the reputations of learners

in their age group have been harmed. They have to indicate what these imaginary characters did that harmed their reputations, and what they could have done to prevent this from happening. Using insights gained from this activity, they then have to design classroom posters illustrating the impact that 'risky' social media interactions could have on a user's reputation.

Activity 8, which focuses on cyber-legislation, alerts learners to different forms of cyber-crime and their legal consequences. It also provides them with a brief overview of SA cyber-laws, spelling out both their punitive and protective functions. Learners then have to study and respond to questions on different scenarios in which users either committed cyber-crimes – sometimes unwittingly – or were affected by such. The focus of Activities 9 and 10 is on Information Ethics, not on digital wellness. In other words, it emphasises the need for inner discipline in the use of ICTs – the values dimension of digital behaviour. Both the fable in Activity 9 and the moral dilemma scenarios in Activity 10 challenge learners to reflect on the relationship between their value system and their digital behaviour.

The last activity – Activity 11 – is a creative assessment task that requires learners to demonstrate their understanding of and commitment to digital wellness in ways that match their personalities and learning style – whether this be to write a newspaper article, compose a song, create a collage/painting, or design a board game.

The sources included in the Bibliography refer learners not only to written texts but also to websites and links that focus specifically on digital safety for teenagers. Should they at any stage be unsure about what to do or not to do, these sources (which are freely available) should be of great assistance to them.

6.8.4.6 *Manual for Secondary School Teachers*

The Manual for Secondary School Teachers (Bester & Malan, 2015), like the one for Workshop Facilitators, is in essence an instructional guide. Unlike the latter, though, it targets a very specific group, namely secondary school teachers. Also, like the Activity

Book for Secondary School Learners it represents a merging of the INTEL Education Cyber Safety Curriculum and the Cyber Law and Information Ethics section of the ACEIE's workshop package. Aimed at enhancing these teachers' ability to manage their own online activities as well as their ability to teach the same to learners in their classes, the manual is structured in the form of seven inter-dependent lessons.

Each lesson deals with one or more of the themes that inform the readings and activities in the learner books. The actual readings and activities are referred to, but not included in the teachers' manual. What is included, are techniques for sensitising learners to the themes informing the readings and for engaging them in the activities associated with these.

Lesson 1 focuses on digital wellness (Activities 1 and 2 in the learner book), and Lesson 2, Cyber-speak, on digital discourse (Activity 3). Lessons 3 to 7 focus respectively on cyber-threats (Activity 4), digital safety and security (Activity 5), social media safety (Activities 6 and 7), cyber-legislation and Information Ethics (Activities 8 to 10).

The selection of facilitation techniques and approaches included in the Manual are based on the designers' own experiences of secondary school learners' language proficiency, learning styles and preferences. These might not be applicable to all contexts and target groups, and should therefore not be regarded as prescriptive. Teachers, who know their own learners better than the designers do, should feel free to change, replace or add to these activities in order to ensure that the learners in their classes derive the greatest benefit possible from their engagement with the content in their activity books.

6.8.4.7 *Manual for Primary School Teachers*

The Manual for Primary School Teachers (Bester & Malan, 2015) focuses on the provision of guidelines for the teaching of digital wellness in terms of three generic digital wellness themes. The focus of the first theme – Learning the Lingo – is on key concepts and terms associated with the use of information communications technologies (e.g. mobile phones and computers). The second theme – Safety First – focuses on the risks/threats

associated with the use of these technologies and the steps learners and teachers could take to protect themselves, their phones and their computers against them. The third theme – Sharing and Caring – focuses on user behaviour, that is, on what learners should and should not do while using these technologies.

Given the age range of the children concerned, the Manual emphasises both active and rote learning. Since most learners in this age group learn best by playing, teachers are urged to use games, pictures, songs, rhymes, puzzles, movements, etc. to teach learners the basics of digital wellness. Examples of activities like these are included in the Teachers' Manual but are not in any way prescriptive. Teachers should ideally design their own activities, preferably ones that stimulate learners' sensory perception while alerting them to the opportunities and risks associated with the use of information communications technology.

6.8.4.8 *Activity Book for Primary School Parents and Learners*

Aimed specifically at the parents of primary school children, the Activity Book for Primary School Parents and Learners (Bester & Malan, 2015) contains guidelines for parents on how to keep their children safe while at the same time guiding them towards the utilisation of digital technology for learning and social communication. The first section of this Activity Booklet highlights the importance of parents being aware of and involved in their children's ICT activities, and talks to parents about the pros and cons of technological devices. It also provides suggestions on how they could establish the kind of trusting relationship with their children that will ensure the latter's digital wellness.

The second section of the booklet describes some of the steps parents could take to protect their children's devices against viruses, hackers and other internet threats. It also deals with the installation of security software, talking to their children about digital safety and security, and playing 'safety and security' games with them. The third part provides parents with information on typical internet abuses – cyber-bullying, cyber-predators, and identity thieves – and supplements these with mini-case studies. Parents are encouraged to engage their children in reflection on these cases studies. They should invite them to

indicate what they think the imaginary person did that was wrong, what the consequences could be and how they could have protected themselves.

The fourth and final section focuses on safe digital behaviour, and suggests that parents should initiate a discussion on the nature and function of rules. The discussion could then move from rules informing the way they and their children behave towards each other, to the kind of rules that should inform their children's internet behaviour. The key message behind these discussions is that rules should be negotiated rather than imposed.

6.8.4.9 *Pre-school booklet*

The Pre-school booklet - Let us play in safe nests! – (Fischer & Von Solms, 2016) is essentially a book of rhymes with elementary moral remarks, and each rhyme is accompanied by an illustration that conveys its key message. The idea is that the little ones should memorise and recite the rhymes out loud. In doing so, it is hoped that the message will become part of the child's frame of reference and essential building blocks as a digital citizen, and that it will 'kick in' whenever the child finds him/herself in a potentially dangerous ICT situation.

6.9 Proposed Model for Information Ethics Education and Training in Southern Africa

Notwithstanding different processes, divergent stakeholders and design differences, the design of both these programmes – the Higher Education Curriculum Framework and the Digital Wellness Toolkit – was essentially 'naturalistic' in nature. Both emerged from a platform of values or beliefs about 'what exists' and 'what is possible' (Walker, 1971). Where necessary, opinions were tested and data was collected to justify design decisions; arguments for and against these were considered; and the most defensible course of action was adopted, subject to acknowledged constraints.

Also, notwithstanding differences in their platforms, the formation and involvement of stakeholder groupings, and deliberations on their purpose, content, design and delivery, both programmes reflect the benefits and challenges associated with the adoption of a naturalistic approach towards curriculum design. In both cases, designers had to

determine the knowledge of and attitudes towards Information Ethics of those targeted for training. They constantly had to reconsider their initial decisions, and compare the validity of arguments for or against specific design choices, prior to taking final decisions. Moreover, the design of 'sub-packages' for specific target groups had an impact on the design of packages preceding and following it, and compelled designers to constantly review each sub-package in relation to all the others.

Given the benefits of the naturalistic curriculum design process highlighted earlier – ownership, implicit training, networking, etc. – the process should also be utilised in the design of sector and/or community-specific Information Ethics or digital wellness courses, programmes and curricula. The conceptual model proposed in this section is informed not only by this conviction, but also by lessons learnt from the analysis of debates, discussions and data collected during the course of the action research described in this research report. Some of these lessons, especially those pertinent to the design of the model and the design of curricula using it as point of departure, are the following:

- Although Information Ethics is considered a relatively new science, it was important to discuss the historic development of the terminology and the definitions that are used in conceptualising and understanding the concept. During the study it was found that the concept of Information Ethics was relevant to the Southern African region and that various universities were involved in teaching topics that form part of the concept of Information Ethics. In the region, many tertiary educational institutions seized the opportunity to further become involved in developing the framework as described in this chapter.
- Various countries on the African continent were analysed to establish the policy framework of each country, as well as its political, infrastructural and geographical influence on the Southern African region. The current status of the digital infrastructure and policy development in Africa (and specifically Southern Africa) creates ethical challenges associated with access and accessibility to safe and reliable information. Furthermore, it became clear that the governing structures

had the political will and that these countries were strongly committed to becoming information and knowledge societies.

- The reality of multi-cultural societies is an important element in understanding human behaviour and the interpretation of Information Ethics on the African continent and in the Southern African region. The concept 'culture' and the ways in which the multi-cultural environment of Southern Africa influences people's behaviour and understanding of Information Ethics are significantly influenced by the structure and core values of individuals.
- When all sector-related (policy, governance, infrastructure, behavioural and cultural) evidence is interpreted within a digital environment, the need for a framework to teach Information Ethics in Southern Africa is obvious. This framework as proposed in Chapter 6 should not only be accepted internationally, but it should also be relevant to Southern Africa and lenient enough to allow interpretation within a local context.

6.10. Conclusion

This chapter described the model for the teaching of Information Ethics in Southern Africa in two sections; (i) it described the structure and content of the curriculum model to teach Information Ethics at universities in Southern Africa and (ii) the structure and content of the Digital Wellness Toolkit. This 9-book toolkit aims at teaching Information Ethics at community level as well as secondary and primary schools and toddlers. The toolkit also designed a model for community and student volunteers to engage with communities

Chapter 6 concluded with the set objectives by creating an active link between culture and curriculum content towards the curriculum model. Chapter 6 presented a curriculum model for universities in Southern Africa with units for under graduate and post graduate students. The chapter also presented the 4 level-digital Wellness Toolkit with the design of 5 teaching units, each with its focus, content and teaching/learning activities.

CHAPTER 7: ANSWERING THE RESEARCH QUESTIONS AND FINAL CONCLUSIONS ON THE CURRICULUM MODEL FOR INFORMATION ETHICS TEACHING IN A MULTI-CULTURAL SOUTHERN AFRICA

7.1 Introduction and Purpose

The primary purpose of this chapter is to reflect on the extent to which the study has succeeded in addressing the research problem as stated in Chapter 1. The research problem was stated as the need for a conceptual curriculum model within the parameters of which Information Ethics could be taught in Southern Africa. The research question and sub-questions in Chapter 1 were aimed at developing such a curriculum model. These were broken down into the following:

- i. What is Information Ethics and how has the development of its awareness on the African continent at large influenced Southern Africa? Although Information Ethics is considered a relatively new science, it was important for the sake of this study to discuss in Chapter 2 the historic development of the terminology and the definitions that are used in formulating and understanding the concept. Chapter 5 focused on activities in both Africa and Southern Africa that were used to better understand the current digital environment. Emerging answers to this question were thus presented in Chapters 2 and 5 of this study.
- ii. What is the current status of the information infrastructure and policy development in Africa and what are the main ethical challenges associated with these developments? The situation in various countries on the African continent was analysed to establish a policy framework of each. The political framework was analysed to understand both the political will of the governing structures and the commitment of these countries towards becoming information and knowledge societies. The above questions were addressed in Chapter 3 of the study.
- iii. What role does multi-culturalism, culture and cultural diversity play in understanding and interpreting Information Ethics in Southern Africa? The concept

of 'culture' is described and interpreted in the fourth chapter. The challenges of multi-cultural societies in Southern Africa are also explained in terms of different communities' understanding and interpretation of Information Ethics.

- iv. Why is an Information Ethics model needed in Southern Africa, and what should its main elements be? This question constitutes the focus of Chapter 5 of this study. In addressing this question it is established that the provision of a curriculum model for formal training on Information Ethics is and should be the prime objective of this study. This objective gradually took shape during a series of awareness workshops attended by an international ACEIE team in Africa and Southern Africa.
- v. With regard to the design of the curriculum model, Chapter 6 started with a summary of the profiles of role players and stakeholders. It identified various groups of cyber-citizens (according to age, gender, culture, profession, geographical area) as participants in the digital environment. It went on to address the question about the most significant factors that would influence the profile of this study. Chapter 6 thus aimed to answer the following questions:
 - Should such training take place?
 - What content should be covered?
 - What should be the sequence of the content?
 - What form should it take?
 - Who should be the role players and stakeholders?
- vi. As for the detail of the curriculum model, Chapter 6 summarised all the building blocks of the curriculum model. It also confirmed the answer to the question on the vital features that should be considered in the structuring of a training model – all of which now form part of this study (see Figure 18).



Figure 18: Critical aspects having an impact on a curriculum

7.2 Observing the rationale for an Information Ethics University Curriculum Model

As mentioned in Chapter 5 and Chapter 6, the idea of developing an Information Ethics Curriculum for universities on the African continent was first expressed at the 2007 ANIE Conference. Delegates were focused on the development and sustainability of information and knowledge societies. They also considered the potential negative impact of the misuse or abuse of information communications technologies. Their awareness of these issues was coupled with their belief that the development of African countries as ethical information and knowledge societies would depend on the advocacy of Information Ethics on the continent. The 2007 Conference furthermore argued that the generation and dissemination of knowledge was the primary task of universities. For this reason, they recommended that an Information Ethics curriculum be developed for universities to prepare students to act as Information Ethics advocates in their own communities, workplaces and life worlds once they graduated.

In support of this rationale, the cohesiveness of the curriculum model was ensured because participating curriculum designers agreed on the need for Information Ethics teaching and learning. They further decided that an awareness of Information Ethics was necessary to counteract the potentially negative impact of digital technology on societal morals and state security, since legislation in this regard was not keeping pace with the development of increasingly sophisticated digital technologies. Both the Information Ethics curriculum (for universities to prepare students) and the Digital Wellness Toolkit (for communities and learners at school level) that were presented in Chapter 6 support the rationale and the research questions mentioned in 7.1.

7.3 Conclusion – Contribution and significance revisited

This study responded to an urgent need for the development and structuring of an applicable and relevant curriculum model for Southern Africa that could teach people the importance of safe information and alert them to safe ways of accessing such information.

As indicated earlier, the main objective of the present study was to develop a curriculum model to teach Information Ethics in Southern Africa. Hence, the study not only reflected on past and recent contributions and research results, but also recognised current attempts to teach Information Ethics in Southern Africa. Chapter 2 discussed the first sub-question related to the concept of Information Ethics from a historic perspective. It also considered the development phases of society – from gathering and hunting, through agriculture and industrialisation, and up to what is now known as the information age. It further indicated how this discipline developed on the African continent at large, directly influencing Southern Africa, and aided in the creation of a definition of Information Ethics.

In Chapter 3, the study further attended to the second sub-question about the current status of the information infrastructure and policy developments that influence human behaviour and Information Ethics in Southern Africa. In addition, it attended to the main ethical challenges associated with these developments and the role governments can play in providing policies and infrastructure.

The third sub-question was dealt with in Chapter 4 and answered the question on the role that culture plays in understanding and interpreting Information Ethics on the African continent. Chapter 4 also included a discussion of Southern Africa's cultural complexity and its impact on ethical reasoning. The chapter created a multi-cultural context that should shape not only the discipline of Information Ethics on the African continent and in Southern Africa, but also the different notions of Ubuntu, copyright, privacy and information sharing.

The last part of the study (Chapter 5 and 6) formulated a curriculum model to teach Information Ethics in Southern Africa and described the main elements of the model. Throughout the study, the researcher acknowledged that Africa was susceptible to the usual challenges of a developing continent, and to challenges experienced by rural communities in particular. In support of its main objective, the study designed the content and structure of a curriculum model that would contribute to the standardised teaching of Information Ethics in Southern Africa.

Finally, the theoretical frame of reference for the development and design of a curriculum model for teaching Information Ethics in Africa – both as a new field of study and as a way of life – reflects the integration of principles derived from various approaches towards curriculum and community development. The final design of the curriculum model was outcomes based in nature and the process that resulted in the design was essentially 'naturalistic' (Walker, 1971).

As mentioned, the selection of learning content, teaching-learning approaches and learner assessment in an outcomes-based curriculum design is based on pre-determined outcomes (Spady, 1981, 1988, 1992, 1994) or educational objectives (Bobbitt, 1918; Tyler, 1949). Decisions on these naturalistic approaches to curriculum design are typically informed by curriculum designers' perspectives on the status quo of education (*what is*) and their assumptions/beliefs regarding *what ought to be* (the 'possible' and/or 'desirable' future of education) (Walker, 1971). Differences in curriculum designers' and curriculum implementers' (or recipients') image of *what is* and *what ought to be*, need to be discussed

and debated so as to reach some consensus on key curriculum components – concepts, theories, aims, processes and procedures. It seems that agreement often requires the use of data to justify particular positions or to confirm the validity of claims made during the deliberation stage of the design process. Understanding this, it further seems that the actual design of the curriculum should only take place once consensus has been reached.

With regard to the implementation of the curriculum model, this study (supported by Walker (1971)) concludes that the criteria informing deliberation should not be defined socially or psychologically – they should rather be logical. Participants in their role as debaters should be given the opportunity to present their arguments for or against a particular proposition. However, since “alternatives are often formulated and defended before the issue has been clearly stated”, and because “personal preferences are expressed in the same breath with reasoned arguments”, feelings could “run high”, resulting in “chaos and confusion” (Walker, 1971:55). This is not unnatural: it is the “inevitable consequence of deliberation”. Once the confusion has been cleared and logic prevails, much better buy-in can be expected from those involved in the deliberation process. This is primarily because they have had the same opportunity as every other deliberator to express their views and to indicate and justify their particular preferences.

7.4 Suggestions for further research

Opportunities for further research arise from addressing limitations, and they emerge from the scope of the study and its findings. Future studies can be expanded to address related topics that will indirectly support both the objectives of this study and relevant related matters. Four such topics were identified and are discussed in more detail below.

7.4.1 Informal digital teaching and learning

The process of informal learning and teaching in the digital environment is mostly observed in the use of mobile phones and related applications and features. Over the past two decades, many people have learnt how to use rather complicated digital equipment without receiving any formal training. This learning process somehow developed mobile phone users into digital citizens without mobile phone companies

incurring high costs or making unbearable demands on users. The correct research question may well guide study towards a new form of teaching and learning in the digital environment and explore possible future human development.

7.4.2 Future cities

The concept of smart cities is becoming increasingly important in the digital environment. While regional and international policies will create the digital environment, smart cities will be the local place where digital citizens can experience it and where their digital behaviour will be relevant. It can be assumed that modern cities in Africa will become part of this concept. Understanding smart cities with its technology, rules and behaviour will allow comfortable human communities that are connected and digitally operational. Future research on smart cities should include matters related to smart houses, smart campuses, smart schools, e-governance, e-health, etc. Research should also be conducted on how they are joined together as a digital community.

By reflecting on the role of humans as digital citizens, such a study can interpret behaviour that will develop the innovative capacity of citizens to find practical solutions to the problems they encounter in daily living or to improve their quality of life in the digital environment. For this purpose, smart cities need to embrace the innovative capacity of their residents, while treating them as recipients of services (or even customers) and as participants in the co-creation of an improved quality of life. This can be done by

- investing equally in smart people and smart technology;
- encouraging the use of technology on all levels of daily life; and
- implementing a mind-set that is digital citizen and human based.

7.4.3 Information society culture

The modern era of globalisation will inevitably have an impact on cultures, people and their behaviour, as well as on digital communities in general. Chapter 4 of this study suggests that the main characteristics of a global knowledge and information society should become the focus of future research to better understand the ethical challenges in a possible new digital culture. Such a study will also create a better understanding of

cultural diversity, cultural tensions and cultural radicalism in a global world driven by modern ICTs.

7.4.4 The impact of the fourth industrial revolution on aspects of culture and human behaviour of digital citizens

The new digital technology revolution is one of the most impactful transformations in the history of humankind. It is fundamentally changing the way we work, relax and interact with each other. We need to understand the changes that it will bring and the possibilities that will grow from this revolution. It therefore becomes increasingly important to understand the impact of digital development, constant technology breakthroughs, nanotechnology, energy storage, 3D printing, artificial intelligence, robotics, the internet of things, drones, autonomous vehicles, as well as medical and biotechnology. The various research questions related to the fourth industrial revolution should focus on the response of human beings to both technology and the changes that it will bring. Such a study could assist in shaping and guiding human behaviour in this revolution to ensure a constructive impact and stimulates an acceptable human response.

7.4.5 Sign language as a tool to give access to information

According to the 2017 Annual Report of the National Institute for the Deaf, communication with people with hearing disabilities is one of the most difficult skills to master. The information ethical topics of access to and accessibility of information to people with hearing disabilities should be urgently explored. Research on the opportunities that may be created in the digital environment for deaf people to gain access to information, can assist about 2 million people in the Southern African region alone. The effectiveness of sign language, together with the recently announced 'speech visualiser', might mean that the focus of research can be shifted to sub-questions dealing with assistance to deaf people to communicate effectively and gain access to information.

7.4.6 Further consultation with African Philosophers

In addition to the areas suggested for further research it is imperative that credible African Philosophers are identified and consulted in addressing ICT related ethical problems. This

methodology is also strongly suggested for debating current and future challenges and solving ICT related ethical dilemmas in Southern Africa, Africa and globally.

7.5 A personal final word

In writing this thesis over the past seven years, I learned that change towards an information and knowledge society is inevitable. Although change is never easy, it is to some extent predictable. The predictability of the future is directly related to the human ability to prepare and plan for the implementation of change. This curriculum model is an attempt to prepare and plan towards (and in) an information and knowledge society. This study is not meant to be a theoretical and philosophical debate; instead, it aims at combining various sciences to create a practical model that will smoothen the journey to the new era and make the future more predictable.

The creation of an information and knowledge society in Southern Africa is inevitable. I believe this curriculum model and the suggested future research will help to prepare us all to live safely and comfortably in this new society. Personally, I am not part of an age group that particularly likes change or being confronted by the realities of the digital environment. However, I am excited about the whole new world that awaits all of us and I look forward to sharing this time and space with persons from all age groups. Wherever we find ourselves in this age cycle – whether we are the grandparents, the children or the grandchildren – we need to recognise the importance of safe information and know how to use it responsibly.

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