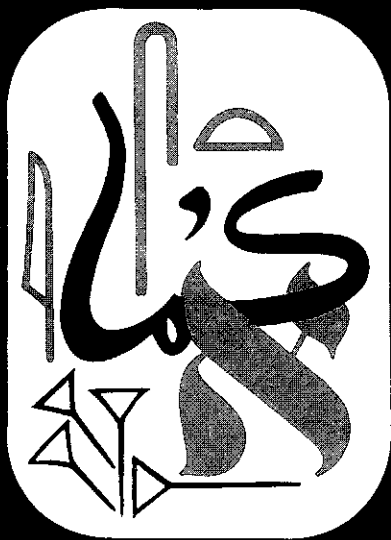


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Sacred space in cyberspace: an African perspective¹

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Abstract

Although information technology can currently be regarded as a vehicle of mainly Western civilisation and culture, Africans should not merely accept it as such, because that would imply subjugation to a new, techno-cultural colonialism. On the other hand, we cannot simply ignore technology and try to return to a completely traditional way of doing things. The solution is to accept that a process of acculturation should take place, in which we embrace the new technology, but use it to enrich the information society by promoting African human values. These values are based on the concept of *ubuntu* or *shared humanity*, which also forms the basis for reconciliation in the Semitic world. After exploring the literature on the relationships between science, technology, belief systems and religion, a particular, non-threatening way of using information technology is proposed in which African human values would be embraced.

1. INTRODUCTION

Information and communication technology (ICT) is currently regarded as a vehicle of mainly Western civilisation and culture. It is therefore necessary to create an Africanised information society without merely accepting the Western perspective as it is. Failure to do so would imply subjugation to a new techno-cultural colonialism. On the other hand, we cannot simply ignore the technology and try to return to a completely traditional way

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of doing things. This article argues for and proposes that an African information society could be created while protecting Africa from replacing colonialism with "itocracy", i.e. government or oppression by information technology (IT).

After discussing the relationship between science and technology, the interaction between technology and belief systems is examined. This is followed by a discussion of some philosophical aspects of technology and the concept of *ubuntu*, the African philosophy of humanity. A proposal and a few suggestions about possible ways of building *ubuntu* values into IT are made in conclusion.

2. THE RELATIONSHIP BETWEEN SCIENCE AND TECHNOLOGY

This article deals mainly with the relationship between *technology* and *belief systems*. The concept of *belief systems* is used in a very wide sense as a synonym for sacred space, including culture, epistemology, ontology, etc. As such, it is more extensive than religious space. It should also be made clear that science and technology are not the same thing. Science represents human understanding of the universe, while technology pertains to the artefacts made by humans. Science deals primarily with man's creation of knowledge; technology primarily deals with the application of this knowledge. Of course, this assumption also pertains to information and communication technology. Differentiating between science and technology in this way also implies that the relationship between science and religion will differ from the relationship between technology and religion (Goodenough 2000:5-6).

However, it cannot be denied that there is a close interplay between the forces of science and technology. Technology is usually built on the insights of science, and it often leads to new questions and problems that can be investigated by science. Science, on the other

hand, is often made possible or enhanced by the use of technology. According to Drees (2002:599) "modern technology is interwoven with science". Therefore, although this article focuses on the relationship between (information) technology and belief systems, it may be necessary at times to refer to science as well.

3. INTERACTION BETWEEN TECHNOLOGY AND BELIEF SYSTEMS

At first, if one does not delve deeply into the issue, it may seem strange and even a little far-fetched to discuss the relationship between technology and belief systems. Technology seems to be a "hard" issue and belief systems a "soft" issue - two unrelated and separate phenomena. However, this is a very dangerous point of view because it may sever the ties between technology and the humanities, which in turn could lead to a "technopoly", i.e. "the surrender of culture to technology" (Postman 1993).

3.1 The influence of technology on belief systems

Various authors have indicated that technology, including ICT, influences people's belief systems such as anthropology (self-understanding), ontology, epistemology and theology. According to Drees (2002:598) "powerful technologies redefine ... human identity and meaning as well as ideas about reality and God". In fact, it has to be stressed that technical systems also have a social side. This explains why the adoption of new technology often has economic and socio-political consequences that may not have been intended or even foreseen. For example, electronic communication and the World Wide Web made the proliferation of alternative religious, political and sexual communities possible (Ho et al., 2002). Chowdury (1998:20) stresses just how radical this influence of ICT is: "Modern information and communication facilities have drastically changed the way we talk, work, study, and in fact all the day-to-day activities that we perform". Drees (2002:597, 600) agrees that information technology affects people's perceptions of

what endows their lives with meaning. He warns that technology does not always have only a positive influence: "while consumption has become easier, some of the more demanding but meaningful and rich experiences have been lost".

The biblical concept of man as made in God's image can serve as one example of the influence of technology on anthropology and self-understanding. In Judaeo-Christian religions this idea has been interpreted in various ways through the ages, and ICT will probably again change people's understanding of it. If it became possible to implant microchips in people's brains, technological evolution would complement or replace biological evolution and *homo sapiens* would become *techno sapiens* (Jackelén 2002:289, 296-299). This would have a serious effect on people's self-identity as the "image of God". Could technical improvement replace the dogma of sanctification? Could immortality via personality preservation replace resurrection? According to Drees (2002:602), people have already started to think of themselves as little machines: "We may consider ourselves as made in God's image, but we speak of ourselves as if we were made in the image of machines", e.g. we say that we are "under stress" or "huge pressure", we "let off steam" and we "tune in", and so on. An example of using ICT metaphors to describe people and God is to compare forgiveness with the deletion of unwanted data on a hard disk.

Technology not only influences humans' self-image, but also their society. Technology had a huge influence on the emergence of the human species and its social structures. For example, the change from copper to iron caused a more democratic society but also different labour classes, and using coal for power generation gave rise to large industrial cities (Drees 2002:600-601). ICT is not excluded from this effect on society. According to Soukup et al. (2001:367), information and communication technologies influence many aspects of the cultures in which they are embedded, such as sociology, education, entertainment, business and politics. Welsch (2001), for example, discusses the

“technocracy behind politics” in the US, indicating how the linking of information in various databases enables politicians to adapt their messages for specific communities. Because the Internet renders greater access to political information possible, it will affect the power relations between governments and citizens (Odendaal 2003). Goodenough (2000:7) even suggests that technology has become the American culture.

It is not only the culture of the first world that is heavily influenced by technology. According to Cinquegrani (2002), the countries in Eastern Europe moved in the space of less than fifteen years from a socialist economy, through a market economy and technological economy, to a learning economy. New communication technologies and the Internet caused a fast and wide transition from the market economy to the technological one, but the market, technological and learning economies still co-exist in a complex mix. “This complexity is further augmented by the fact that the Eastern European societies have not had enough time to understand their present in order to be able to desire possible, alternative futures.” In this regard there may be a number of similarities between the situation in African and Eastern European countries. Africa moved in fifty years from colonialism to a complex mix of traditionally African, market, technological and learning societies.

Indeed, like Eastern Europe, African countries did not escape the huge influence of modern ICTs. According to Chowdury (1998:20) “the wave of developments in IT has reached Africa and people have embraced it”. One of the major shifts taking place in Africa (as in the rest of the world) is the transformation from traditionally closed systems to open systems. According to Anderson (1999), information and communication technology plays a major role in transforming traditionally closed communities into open systems. In addition to real-life communities, virtual communities have been created in cyberspace. The main characteristics of these virtual communities are “disintermediation” and “aggregation”: the middleman is eliminated and people can

interact directly with other like-minded individuals or groups. A person can simultaneously be a member of different communities and this can lead to conflict between the various sets of values that are inherent in each of these communities.

Even the way people think about the state of being (ontology) is influenced by technology. Goodenough (2000:7) says, "Our entire experience of existence has been technologized". To exist in cyberspace adds a whole new dimension to the essence of "being in the abstract" (cf. the definition of ontology in the Concise Oxford dictionary). According to Drees (2002:598-600) science (and technology) does not only aim to understand reality, but also to transform reality. If reality changes, humans' concept of the essence of being also changes. Advanced medicines, for example, have changed people's sense of human vulnerability. The computerised exploration of space could even change people's idea of the essence of life (if signs of other forms of life were found on Mars or other earth-like planets in deep space).

Moving on from ontology to epistemology, it should be acknowledged that technology also changes the way people understand and know (Drees 2002:600-601). "A basic cultural practice such as writing affects how cultures frame knowledge and organize the world" – the art of writing caused the phenomenon that concrete thought was replaced by analytical thought (Soukup et al., 2001:366-367).

Donohue (2002) discusses television as an example of a modern ICT that has changed the "epistemology of popular culture". The new way of making sense, replacing critical thinking, is "a process of conceptualization based on generalizing from spontaneous impressions". According to Soukup et al. (2001:366), "Logical patterns of analysis have given way to image, word, sound, and movement". This indicates that "we have shifted from left-brain exclusivity to a more equilibrated employment of the right brain: using imagination, association, creativity, art and music." Television also drags along other

ICTs in its quest to change the way people understand. It creates a superficial "electronic imagination" that replaces reflection and the meta-narratives that people use to make sense of the world. "Fantasizing within the confines of traditional narrative structures produces idealized pictures of the world we live in ... In the electronic imagination, to fantasize is not to create a more pleasant version of one's life but to escape it altogether" (Donohue, 2002-2003:388, 397).

Having said that technology changes humans' anthropology, sociology, ontology and epistemology, it should come as no surprise that religion and theology are not exempt from this influence. It is obvious that ICT has an extrinsic effect on theology: it facilitates wider access to theological texts, the ability to search for and through these texts easily, and the idea of sharing versus privacy and separation (Soukup et al., 2001:368).

Another effect is on religious communities, which are becoming more open, like other communities (Anderson 1999). Geographical boundaries and explicit membership are fading, old doctrines are being reinterpreted and leaders of different religions are working together to achieve common goals. Ideas about what constitutes acceptable behaviour are now even disseminated by the electronic media.

But ICT is also influencing religion and theology on a deeper level. According to Soukup et al. (2001:368-377), the initial extrinsic effect of ICT on theology will eventually lead to "a more powerful intrinsic change". The intrinsic changes pertain to the context, resources, communicative methods and cognitive processes. This may have a serious effect on humans' concept of religious and theological authority. Tobie (1986:19) agrees that even people's concept of God is changing: "The human perception of God changes as human life changes. Today, computers are playing a central role in the contemporary evolution of the human view of God" (Tobie 1986:19):

- One example is that God is no longer being experienced as an *eternal unchanging entity*, but as an “indispensable aspect of the ever-advancing process of life ... forever changing along with the world” (“Process Theology”).
- The role that computers play in medicine, e.g. cloning, could relativise our concept of God as *creator*.
- The dissemination of knowledge through computers makes God’s *omniscience* less awesome.
- Artificial intelligence changes our self-perception and our perception of God: our views on the *difference* between machines and people, and therefore also *between people and God*, change.
- The fact that computers render instant communication across the world possible will cause us to experience God’s *omnipresence* differently.
- Intelligent prostheses may weaken Christians’ expectation of an eschatological miracle where physical impairments will be non-existent (Jackelén 2002:294).

Goodenough (2000:7) is even more negative about the relation between technology and religion, saying that the consumption of technological products has become such a “dominating force” in American culture that it can be regarded as a religious doctrine. Technology has become a god; the use of technology has become religion. However, perhaps this is pushing it a bit too far. Computers do not necessarily diminish our experience of God, but also provide new perspectives and ways to think about God, and may even increase believers’ appreciation of “the intelligence behind creation” (Tobie 1986:19).

3.2 The influence of belief systems on technology

There is also another perspective on the relationship between technology and religion. Belief systems also influence technology and its use. Ideas about people and humanity often direct the development of technology. In Artificial Intelligence (AI), for example,

programmers want to simulate what they believe to be the essence of human intelligence: "cognition, perception, action, learning, creativity and emotion" (cf. Jackelén 2002:291). In other words, as technology influences ontology, ontology also influences the creation and adoption of technology.

Moreover, according to Drees (2002:597) "our traditions shape our technological culture". Organizational culture provides an example of the influence of social concepts on technology. Odendaal (2003) compares the use of ICT in local governance between "smart cities" in the first world and in the third world (Brisbane and Durban). A smart city uses ICT to improve communication and interaction between the local government and the inhabitants of the city. She found that "ICT initiatives in local government are intrinsically linked to the Municipality's organizational culture, its priorities and objectives and its strategic vision", e.g. Durban's web site reflects the city's commitment to democracy, empowerment, capacity building and the spirit of *ubuntu*.

People's concept of gender and gender roles also has an effect on technology. According to Fountain (2002:59) "it seems reasonable to hypothesize that stronger representation of women in information technology will have a deep influence on technology outcomes and processes". Furthermore, the interaction between cultures has given rise to the development of new technologies, such as transport and production (Drees 2002:600).

Another effect of culture on technology is that it can act as a barrier to the development or adoption of technology. Fountain (2000:54-56) refers to engineering and computer science in this regard: "Perceptions of science and technology careers as socially isolated, all-consuming, intensely competitive and incompatible with healthy families encourage women to avoid them" because "women tend to hold different perspectives from men on the technological needs of society and a greater affinity for the attitudes, competencies and interests of users." This may be a sexist remark, and it is open to

criticism, but it does illustrate that the perceptions of a certain group (in this case the subculture of women who do not want to be involved in competitive jobs) influence their involvement in IT. Language is another cultural phenomenon that influences attitudes towards IT. Referring to Africa, Chowdury (1998:11) says, "The paucity of software written in local languages hinders adoption of information technologies".

Religion, the deepest belief system, also influences the creation and adoption of new technologies. Religion does not only have a reflective function, "but often also an evocative function and a transformative interest" (Drees, 2002:599). Ethical values influence the development and use of technologies. According to Goodenough (2000:5, 9, 12), technological ethics should be inspired by religious and artistic sensibilities (the "muse") and controlled scientific understanding (the "lynchpin"). Whereas science represents "empirical truth" and religion "revealed truth", the technological ethic represents a "consensual truth". The ethical soundness and acceptability of technological developments should be judged through "a dialogue between many persons who bring diverse cultural and religious and scientific and philosophical and political sensibilities to the table".

4. SOME PHILOSOPHICAL ASPECTS OF HUMAN BELIEF SYSTEMS

It has been indicated above that there is a reciprocal influence between technology and human belief systems. This section will focus on some philosophical aspects of technology before moving on to the concept of humanity in Africa.

4.1 Technology: ultimate liberator or ultimate oppressor?

According to Drees (2002:599-600) there are various dimensions of technology:

- Material dimension: devices and infrastructure

- Sociological dimension: organisation (actions, services) and skills (education)
- Psychological dimension: attitudes (active-technological or fatalistic)
- Cultural dimension: the technological culture is influenced by technological developments, e.g. human relations and customs

The social philosophy of technology focuses on technology as culture and studies the “interactions between technological developments and wider culture” (Drees 2002:602). It is a humanities philosophy versus an “engineering philosophy of technology” that studies technology as design.

Technology can be regarded as a liberator (positive), threat (negative) or instrument of power (neutral) (Drees 2002:602-603). Obijiofor (1998:454) asks the question: “Will the new information and communication technologies launch Africa on the path of socioeconomic development or will they subject Africa to further dependence, a new form of Western imperialism?” Or could the idea of technology as an instrument, which can be manipulated, act as a golden mean between extreme optimism and extreme pessimism? These three views of technology will be discussed below with specific reference to ICT.

4.1.1 Information technology seen as the ultimate liberator

The perspective of authors who see technology as the ultimate liberator, has been described as “technological optimism” or the idea of a “technological Utopia”. This view regards technology as something that improves people’s circumstances and can solve its own problems. “Cyber-utopians believe that the Internet ... can subvert hierarchy, promote and revitalize democracy, reduce racial and national conflict, and lead to planetary interconnectivity, unity and holism” (Goldsborough 2003; Drees 2002:602-603).

It is believed that modern ICT can be used to overcome many of Africa's problems. "Although there are many problems, there is a realization that improved information and communication facilities are the keys to overcoming many of the acute problems from which African countries have been suffering" (Chowdury 1998:20). According to the African Information Society Initiative (AISI) "Information and knowledge, disseminated throughout Africa, would give rise to free markets and would ensure freedom of speech and freedom of cultural and religious expression" (Chowdury 1998:20).

Nassimbeni (1996) refers to the role of ICT in complementing the liberation process in the new South Africa: "The right to vote did not automatically confer freedom from poverty, unemployment and deprivation". It is believed that a good ICT infrastructure will promote participation in government and enhance effective and transparent government, and will even stimulate economic growth. The leader of a project that makes all documents used in drafting the new constitution available on the Internet hopes "that the project will be the start of a revolution that will ensure that democracy is spread to every citizen in the country".

However, others warn against such unbridled optimism. "It is wrong to perceive the new communication technologies as the magic solution to Africa's problems" (Obijiofor 1998:461). Right on the other side of the scale are those who see technology as the ultimate oppressor.

4.1.2 Information technology seen as the ultimate oppressor

The view of technology as the ultimate oppressor has been called "technological dystopia" and its supporters "neo-Luddites". According to this view "technology promotes uniformity and efficiency, undermines social networks, and increases possibilities for tracing and manipulating individual behavior". Neo-Luddites are people

who "see computers and the Internet as conflicting with matters of the spirit" (Goldsborough 2003; Drees 2002:602-603).

Although Postman (1997, 2001) acknowledges the positive side and the benefits of technology, he wants to put technological optimism into perspective. He believes that technology that is not restrained by either science or religion becomes a god that enslaves people, making an empty promise of lending meaning to the "information glut" brought about by advances in communication. Technology has become America's deity, its "ultimate concern": the American culture organizes itself to accommodate the requirements of technology, it serves and obeys the will of technology, it believes that "technological innovation is synonymous with human progress" and that it "offers the best solution to our most profound human problems". The "great god of technology", the offspring of the science-god, offers heaven on earth, but it demands absolute devotion – it is monotheistic and sovereign; yet "the covenant we made with technology is each day being shredded" because it "gives no profound answers in the bargain". Postman calls this situation a "technopoly" and pleads that we return to retelling the two great meta-narratives of science and religion to help us to make sense of the universe.

Such a view of technology can also be called *technocracy*, however not in the sense of "government by an elite of technical experts" (*The Concise Oxford Dictionary of Current English* 1991), but in the sense of "the government or control of society or industry by technology" (*Oxford American Dictionary of Current English* (1999) via *Oxford Reference Online Core* (2003)). If we speak specifically of IT or ICT in this way, it can be called *itocracy* or *ictocracy*. The word *itocracy* already exists as the name of a business (cf. the Google search engine), but it is not recognised as a noun in the *Oxford Reference Online*. We will use *itocracy* to avoid confusion with the Greek word *ichthus*, which literally means fish, "an early emblem of Christianity" (*Oxford Reference Online*

Core) – *ichthus* is also an abbreviation for *Iesous Christos Theou Uios Soter*, Jesus Christ Son of God Saviour.

Itocracy (the control of society by information technology) goes hand-in-hand with globalisation. Globalisation is sometimes viewed as a “new and insidious form of economic and cultural domination” or “postmodern colonialism” (Lenta, 2001:178-179). While information technology can be regarded as a product of modernity, the result thereof, the so-called information society, is typical of the postmodern era. “Postmodernity is identified with mass forms of communication and the commodification of intellectual products and symbolic forms ... Postmodernity reflects a lack of collective participation by individuals except as consumers, and the effacing of substance by surface, fragmentation, and diffusion” (ibid.).

Itocracy will force humans to adapt to the needs and wishes of ICT; for example, adjusting laws and regulations to be “more consistent with the direction of global technological innovation” (Odendaal, 2003).

4.2 Information technology seen as a neutral instrument

A more balanced view is to regard technology as an instrument that is constructed and used by humans “in a way that is dependent on the human context”. Technology is not regarded as a force in itself, and the responsibility stays with people. This view is called “technorealism”, which is defined as “thinking critically and realistically about the role information technology plays in history and society” (Goldsborough 2003; Drees 2002:602-603).

One example of such a neutral view is that of Goldsborough (2003:41, 44): he says that computers and the Internet can be “both aids and impediments to those who are looking for spiritual sustenance”. On the positive side, IT can be used to facilitate the study of religious texts or as an electronic platform for the dissemination of religious information, and spiritual discussion and growth. Sites are available that cater for Jews, Christians, Muslims, agnostics and atheists. Africans could also use the Web to cater for traditional African religions or for the African versions of other world religions. Many such sites are already available, e.g.:

<http://www.angelfire.com/realm/blackcatholics>;

<http://www.unitarian.co.za>;

<http://www.seekgod.ca/bantu.htm>;<http://www.mahmoodiyah.org.za>;

<http://islamonline.net/English/artculture/2003/06/article08.shtml>; and

<http://www.sacred-texts.com/afr>.

However, no dedicated sites catering specifically for ancestor worship or even for the ZCC, a large independent African church, could be found.

Lenta (2001:178) agrees that “the machinations of globalisation are ethically ambivalent”. He quotes J Walch (*In the Net 1999*): “The Internet serves as an example of the ethical ambivalence of the technology and culture of postmodernity: it offers possibilities for lobbying, learning, participating in the struggles of others and permitting timely and effective communication. On the other hand, the spread of “computer mediated communication” in developing countries such as South Africa produces an insidious English language corporate “MacCulture”. The Internet’s commercialism will continue to exist in dynamic tension with its pioneering role in supporting freedoms”.

Postman (2001:28) pleads for “technological atheism”: people should not assign absolute autonomy or dominion to technology; neither should they believe that technological

progress cannot be reversed. Complying with this wish, we will now discuss humanity in Africa and propose that the concept of *ubuntu* should be used to prevent an itocracy in Africa, because we believe with Lenta (2001:180) that *ubuntu* "would seem to provide a source of values to counter the aggressive individualism of neo-liberal capitalism which characterises globalisation".

5. THE AFRICAN HUMAN BEING: RELIGIOUS AND SOCIAL DIMENSIONS OF INFORMATION TECHNOLOGY LINKED THROUGH THE CONCEPT OF *ubuntu*

Having introduced the hypothesis, discussed the relation between science and technology as well as the philosophy of technology, this section will now focus on the African human being. This is done in order to make a critical assessment of the extent to which the religious and social dimensions could serve as bases for the enhancement of the integrity and well-being of the African person in his/her encounter with information technology. We consider the concept of *ubuntu* (Mbigi & Maree 1995; Broodryk 1997; Louw 1997) to be a potentially useful unifying concept within the African context. Central to the discussion in this section is therefore *ubuntu* and how it is helpful in characterizing the African person, while at the same time serving as a link between the religious and social dimensions of information technology. The concept of *ubuntu* also serves as a link to the Ancient Near East: according to Van Binsbergen (1999), *ubuntu* is a concept parallel to that of reconciliation in Semitic and Judaeo-Christian oriented cultures. He defines *ubuntu* as "a major African social technology of shared and recognised humanity" and maintains that "the confession of such shared humanity (*ubuntu*) is the essence of reconciliation".

The title of our article, *Sacred space in cyberspace; an African perspective*, refers to the reciprocal influence of information technology and African belief systems. It begs a response to the following question: *What does/should information technology mean to an*

African person? We respond to this question(s) by showing and discussing a relationship between five sub-topics: (1) The African human being and the concept of *ubuntu* (2) The African human being, religion and *ubuntu* (3) The religious dimensions of information technology through the *ubuntu* lens (4) The social dimensions of information technology through the *ubuntu* lens (5) The due process model in introducing IT into a group or community, and lastly (6) A description of an attempt at building *ubuntu* into information technology.

5.1 The African human being and the concept of *ubuntu*

In his *Sapiens controversies*, Van Drimmelen quotes Tobias as having said that humanity was a gift from Africa to the world, indicating further that DNA studies are in agreement and that Tattersall reviewed the evidence of mankind's origin in Africa. It is not our intention in this article to take these controversies any further than providing the relevant sources. We mention them here as a salutation of the fact that Africa is not short of a rich heritage. The concept of *ubuntu* provides an example of this. African and other scholars describe the concept in various ways.

Mbigi and Maree (1995) explain *ubuntu* as a figure of speech that describes the importance of group solidarity on issues that were pivotal to the survival of the African communities, who as a consequence of poverty and deprivation have to survive through group care and cannot only rely on individual endeavour.

Ubuntu is a Zulu word meaning *being humane*. It has the same meaning as a Pedi word *botho* and serves as the spiritual foundation of African societies (cf. Louw 1997 and Liwane 1990). It is a unifying worldview enshrined in the Zulu maxim *umuntu ungumuntu ngabantu* or the Pedi maxim *motho ke motho ka batho*, i.e. "a person is a person through other persons". The maxim articulates a traditional African emphasis on respect and compassion for others. It can be interpreted as both a factual description and

a rule of conduct or social ethic. It both describes the human being as "being-with-others" and prescribes what "being-with-others" should be all about (ibid.).

Liwane (1990) points out that *ubuntu* plays a significant role in African value systems since it derives from the African mores: "I am human, because you are human". I am because you are. African people are collectively united by their religious experience. Issues of strategy and ideas must try to make reference to the African religious and cultural experiences (Liwane 1990).

While Liwane (1990) and Mbigi and Maree (1995) are in agreement that not all principles underlying *ubuntu* are new or exclusively African, such as collective unity, caring, sharing, compassion, warmth, humanness, *et cetera*, it is suggested that *ubuntu* serves as a *distinctly African rationale* for these ways of relating to others (Louw 1997).

Although various authors point to more virtues of *ubuntu*, there are some unresolved issues and questions as well. For example, Liwane (1990) enquires about a possible missing link and dimension of *ubuntu* in post-independence Africa. He identifies the link as that of "citizenship" – the ability to live for one's country, the ability to take personal accountability and responsibility for improving one's situation. In our view, this missing link is perhaps the most crucial one in terms of the empowerment of the African person. It could be the very link that resonates with colonial undertones and dependency, leading to all kinds of labels that serve to undermine the integrity of the African person. Strauss (1992) disagrees, and calls it an enduring myth that Africans lack the ability or the will to improve their lot themselves. He argues that the continent teems with intellect, skill and eagerness – but that most are blocked by either tyrants from above or pagan jealousy from below – and their frustration is yet another African tragedy.

5.2 The African human being, religion and *ubuntu*

Louw (1997) points out that the concept of *ubuntu* adds a distinctly African flavour and momentum to what he calls a “decolonized assessment of the religious other”, the fundamental presupposition being a respect for the other as a *religious* other. He goes on to say that while Western humanism tends to underestimate or even deny the importance of religious beliefs, *ubuntu*, or African humanism is resiliently religious. For the Westerner, the maxim “a person is a person through other persons” has no obvious religious meaning, while in *ubuntu*, there is an indissoluble bond between man, ancestors and the Supreme Being. *Ubuntu* thus implies a deep respect and regard for religious beliefs and practices.

5.3 The religious dimensions of information technology seen through the *ubuntu* lens

Archbishop Desmond Tutu built a theology around the concept of *ubuntu*. Through the lens of *ubuntu*, we can see a way to “do life” in such a way that God is glorified in and through our very humanness. Human existence is inextricably bound up with God’s creation, and a solitary human being is a contradiction in terms. In his inaugural address of the Beyers Naude lecture series at the University of Pretoria (15 August 2003), Archbishop Tutu said, “The Scriptures say that if you want to see God, then look in the eyes of your sister or brother”. A North American Christian, who has been “socialized into and through a worldview where personhood centers on the lone individual whose essential characteristic is that of self-determination” (Greater Milwaukee Synod, 2003) would find this difficult to understand. Faith is often tied to this reverence for individuality. The existence of human and religion cannot be separated (Miyake 2002). Therefore it is not an exaggeration to say that “religion is the earliest information business”. Religious passion (fear of the supernatural, dedicating things to the dead) is one of the things that distinguishes human beings from other animals. Protestant theology (Martin Luther’s reformation) was made possible through print media. Without

the invention of the printing press by Johannes Gutenberg, most people would not have had a Bible, the phenomenon that enabled Luther's protestant theology to take root in 1517. The spread of television led to televangelism and the Internet enabled marginalized religious groups to be heard (Miyake 2002).

5.4 The social dimensions of information technology seen through the *ubuntu* lens

The African human being can thus be characterised by *ubuntu*, which, as we have just seen, cannot be separated from religious beliefs and practices. *Ubuntu* is thus a social practice through which the African person could be better understood. This could assist one to better understand the "human environment" (Du Plooy 1998) within which information technology can be introduced in support of the person, her humanness and her humanity. We know this to be an area that is not easily understood, not only by those outside the Information Systems field but also by those within it.

Du Plooy describes the human environment for the adoption and use of information technology as being determined by the social forces in the environment within which information technology is used. He emphasises that information technology adoption and use has to be created in an organizational context arising from the interaction between information technology and its human environment. According to Du Plooy, the notion of a human environment integrates six characteristics into a single whole (see Figure 1):

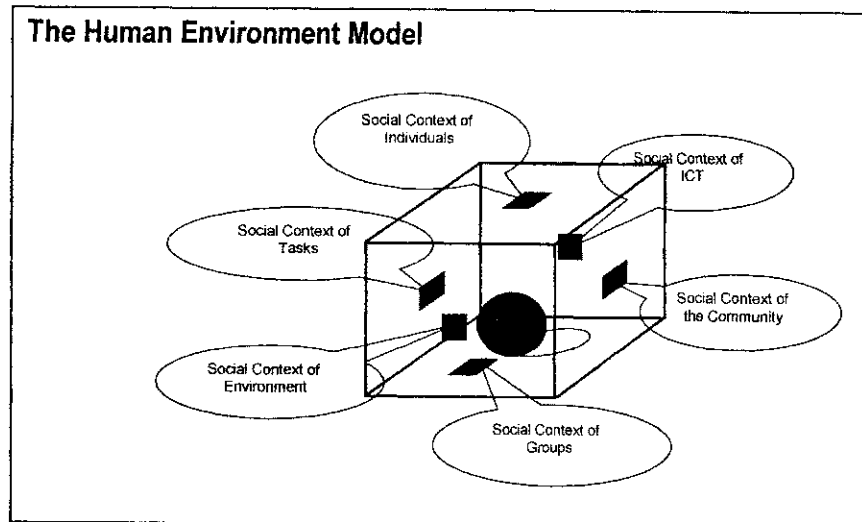


Figure 1: The human environment of information technology adoption and use (Roode, 2003, adapted from Du Plooy 1998)

Although each side of the cube expresses a different dimension of the social context of information technology adoption and use, these dimensions cannot be isolated and considered on their own (Du Plooy 1980:241). They are bound together by their social contexts. If *ubuntu* is assumed to permeate the various social contexts, then nurturing this human environment would imply the nurturing of *ubuntu*, resulting in a meaningful information technology for the African person.

5.5 The due process model in introducing IT into a group or community

Roode (2003) uses the notion of a “due process” from Latour’s (1987) actor network theory to discuss how the introduction of IT into a group or community could be described. He explains that in planning for the introduction of new ICT into a group or community, a due process might be followed with the intention of achieving a successful outcome – a black-boxed and irreversible technology. He points out that this would entail considering the existing collective of actants and the existing (stable) network in

the group or community and introducing a new candidate actant, the information technology, to the network. This causes a degree of “perplexity”: What is it? How do we use it? How does it affect me? Who and what else are affected? Then follows a consultation or debate process concerning the legitimacy of the candidacy of the new IT by the other actants, after which the new IT’s relative importance in the hierarchy of things in the network must be established. Only then may the candidate (the new IT) become accepted through “institutionalisation”. If this due process is circumvented, by jumping from perplexity to institutionalisation, an unstable network that is liable to disintegration might emerge. The due process described above can be presented as follows:

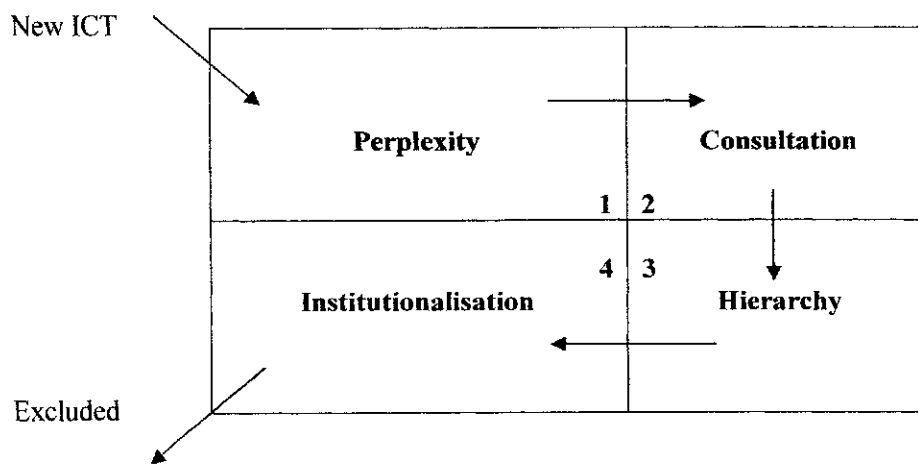


Figure 2: Due process model (Roode, 2003, adapted from Latour 1987)

5.6 A description of an attempt at building *ubuntu* into information technology

It is widely acknowledged in the literature on information systems that computer systems reflect the societal interests and values of their Western developers (Walsham 1998).

They could thus not be expected to be effortlessly in harmony with the concept of *ubuntu*. Alternative ways are needed of introducing these technologies into African societies, over and above the well-known technology acceptance models. These alternatives should enhance, but could also be enhanced by the concept of *ubuntu*.

At the risk of oversimplification, we present in Figure 3 a schematic description of our attempt at building *ubuntu* into IT and *vice versa*. In line with both the human environment model (Du Plooy 1998) and the due process model (Roode 2003), the figure is descriptive rather than normative.

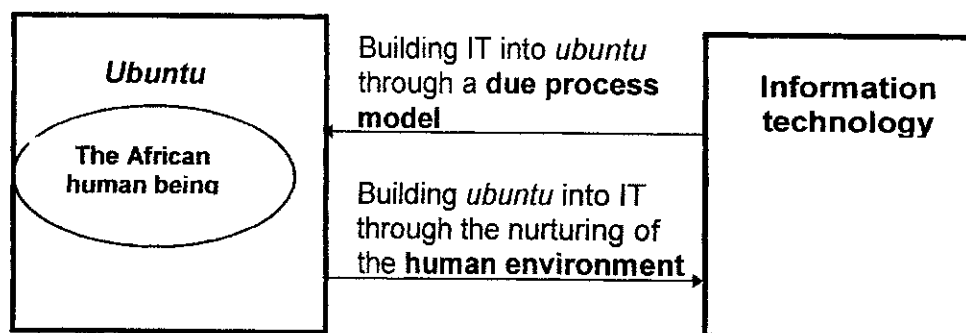


Figure 3: A simplified model of information technology and the human being in an African context.

The figure could briefly be described as follows: The African human being represents any human being seen from an African point of view. Such a person derives his/her context from *ubuntu*. The model suggests that in order to build IT into *ubuntu* (the context that is already understood by the African person), the due process model could be followed. The result would be a better understanding of the context that informs the African person and his/her human environment, which could in turn be incorporated into both the use and design of new information technologies.

In the spirit of both the due process model and the human environment model, the model we are proposing is not normative, but descriptive. It describes one way in which information technology could be made more sensible and helpful to an African human being.

6. CONCLUSION: THE ROAD AHEAD FOR AFRICA IN INFORMATION AND COMMUNICATION TECHNOLOGY

Now that we have identified the building of *ubuntu* into IT as a method of preventing an itocracy in Africa, we can suggest a few practical ways in which this can be done. If we accept the assumptions that ICT is at present a carrier of mainly Western values and that Africa cannot return to an ICT-less situation, the solution is to accept that a process of acculturation should take place, in which we embrace the new technology, but use it to enrich the information society by promoting African values and extending the content of the Web with bilingual sites in English and African languages. Web sites in indigenous languages will stimulate Internet use in Africa while the English versions will carry the African culture to the rest of the world. Such an approach could shield Africa from passing from colonialism into an itocracy.

If it is true that *ubuntu* is "a virtual form of community" (Lenta 2001:180), the concept of virtual communities in cyberspace should be quite acceptable to Africans and can be used to heal the fragmentation of people on the African continent. People who were separated by artificial borders or by commuting long distances for work can come together on the Internet.

A third example is to build some African cultural aspects into software. Modern ICTs should be used to "promote Africa's cultural heritage, including the modern cultural sector of its rich and growing film and music industries" (Chowdury 1998:17). Obijiofor

(1998:455) discusses the difference between the concept of communication in Africa and the West. In Africa the messenger is as important as the content of the message itself. Communication involves social networks. In the West the content of the information is the most important thing ("don't kill the messenger") and this is what is carried by modern ICTs such as the Internet. Therefore, Obijiofor thinks that the telephone will be accepted by Africans because it poses the least threat to existing sociocultural practices. However, if the Internet can be Africanised, it could be as acceptable as the telephone. To build *ubuntu* into IT, African web sites should have to provide information about the messenger (the owner or source of the web site) and his/her credibility. If Africans can adopt the Internet in such a way as to serve African culture, it could become an acceptable platform for disseminating information on Africa inter-continently and to the whole world.

Building customised software for Africa's requirements is a fourth example of introducing *ubuntu* into ICT. "Development of indigenous information resources, based on user needs, is ultimately the yardstick by which the effectiveness of the information society in Africa will be judged" (Chowdury 1998:16).

The idea of building *ubuntu* values into western cultural products is not new. The same concept has been proposed for the law. "*Ubuntu* has the potential to upwardly re-evaluate repressed African identity and to reintroduce previously marginalised legal traditions. On the other hand there is a danger that indulging in nostalgia about African colonial cultures will reinforce the myth that there is a single African culture and that the continent lacks diversity in its difference" (Lenta, 2001:189-190). It should be noted that the process of building *ubuntu* into South African law has not been very successful so far. Kroeze (2002) indicates that *ubuntu* was only used as a constitutional value in one court case where it was separated from its context and equated with the Western liberal concept of human dignity.

In order to create an Africanised information society we need enough skilled Africans to do the job. This necessitates a revision of educational practices. In order to increase Africans' participation in ICT, changing attitudes should be addressed from early childhood on. In a study about women's participation in ICT, Fountain (2000) says: "Science and education policies designed to reduce gender inequity in post-secondary and graduate study miss critical periods during childhood and adolescence that later constrain education and career decisions. In other words, attitudes that relate identity, gender and technology are acquired early in life." The same can be said about race or culture groups. If Fountain's suggestions for girls are adapted for African children, the following steps can be taken to change attitudes:

- Computer games designed for African children
- Chat rooms and interactive web sites for African adolescents can "promote a sense of identity and independence, while simultaneously building confidence in computing".
- Exposure to African role models in these fields
- Mentoring, support, guidance and encouragement.

However, Postman (2001:30) warns against blindly adopting learning technologies to make education more efficient. Educators should first clarify their reasons and aims for education. "And such reasons are to be found in places where machines do not dwell and where gods of a different order speak their words."

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