

Wiring the Global – Wiring the World? An Empirical Study of ICT as Agents of Globalisation in Disadvantaged Communities in South Africa.

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1. Introduction.

Looking at world today it is anticipated as having become *global*. Electronic media are facilitating the ability to get anywhere on the globe within seconds. We find ourselves surrounded by multiculturalism and regard this, as an expression of globalisation. Almost every day, media is filled with stories relating to globalisation, companies are moving out and people are retrenched; another kind of globalisation. Global discourses are found everywhere also when it comes to the so-called developing countries, that for decades have been sought to become modernised, in order to live up to the standards of the West. This thesis is about the kind of globalisation that is seeking to integrate the disadvantaged communities, that are perceptually located far away from 'western world' as disconnected units of globalism.

Yet they are influenced by the global movements, yet claiming to be local. Equally this thesis is about the socio-technical landscapes that are influencing these locations having and impact in one way or the other by promoting a sense of globality, a window to the world and as a means of connecting, anticipated, isolated areas with the modern world. Resembling traditional development discourse, the excitement about the new technology and its possibilities is being framed in this discourse and as the new ideal of modernity this is taken as a way for modernising these districts. With the emergence of a general idea, that the world is increasingly becoming a *global village* the local villages and communities located in sub-Saharan Africa, at the bottom of the African continent are anticipated as being third world areas, that are perceived as being poor and disadvantaged. In many ways they are away from modern day commodities and as such cut off from enjoying the same things as us in the West. In this effort the agents of globalisation are needed in order to become global and acquire the newest technologies and subsequently globalist strategies are worked out in order to face these challenges.

1.1 The Global Communities.

Returning now to the little sub-Saharan African community, the contrast seems striking, raising the question about the destiny of these people; will those outside the information society be able to be a part of this development too? Would people, who have first recently gained access to formal housing, be able to join this club of information societies, together with the rest of South Africa, with the rest of the world? From a Western point of view this seems like a paradox; poor, sub-Saharan, African, yet striving to become a part of the high tech global economy. Yet the perceived need for facilitating and overcoming this paradox is at an official level deemed to be of very significant importance, not just for maintaining and strengthening the national connection to the global economy, but also as a way of harnessing positive social changes in under resourced areas. Targeting communities, particularly in the rural districts, it is assumed that these social units are areas that are most in need of information and communication technologies due to their locations

outside urban area. Other than being either peri-urban or rural the commune of these communities are generally held to be a resource for implementing ICTs and in this thinking, having the small societies connected to the big society. Through this process it is anticipated that the social changes are coming to these small communities. [DACST, 2001]

In this way, the *a priori* anticipation of becoming a global member of the information society, in every aspect, held to result in these positive changes in any case. The implementation of ICTs seems to radicalise these ideals thus making the need for examining these issues even more crucial in order to investigate what consequences the imperatives of globalisation have on small communities that in many ways are located in the periphery of globalism.

1.2 The rise of the information society

In order to examine these matters, it is also necessary to look at the fundamental perceptions and anticipations that come along with the information society. In other words, it is a matter about understanding the nature of the information society, as well as the targeted area for implementation. A relevant question in this context is *how* the information society was formed in the first place. In modernisation theory [e.g. Rostow, Castells 1996] it is argued that the information society is a part of the ongoing industrial development, now consequently leading to a post-industrialism [Castells 1996 p. 91]. This new kind of industrialism leads to, and requires a change of the society through its growing emphasis on information and communication technologies. In order to maintain profitability, people need to have *knowledge* to use the potential of ICT for a continuing economic growth, hence the emphasis on education [Mbeki 2001b]. The development of industrialism into the global 'informational economy' [Castells 1996] highly skilled labour is required in order to make efficient use of Information and Communication Technologies. The manual labourer originating in the industrial societies is no longer sufficient for what many perceive as an emerging information society; it is anticipated that this *new society* requires another kind of work force, which is educated and skilled. This dramatic change is taken to have major impacts on the society, since the implementation of this new technologically based paradigm can be argued to dramatic impacts on the issue of work division and the integration of the resulting cultural institutional attributes [Castells 1996, p. 91]

Discursively, the visions of a global information society slowly entered the international political scene during the 1990s. According to Audenhove *et al.*[1999] the vision and eventual concept of the information society was a result of a “*complex mix of social predictions, government policy, futuristic speculation and empirical social analysis*” [Audenhove *et al.* 1999 p. 18]. The concept of the information society is then as such, seen as the new modern world and a logical evolution of the Western post-industrial society, where time and space now have totally new meanings with major impacts on both economy and society. Out of this political discourse several new concepts emerged.

These include GIS (Global Information Society) and GII (Global Information Infrastructure – coined by then US Vice-President Al Gore at the International Telecommunication Union's Development Conference in 1994 [Audenhove p. 19]).

Audenhove *et al.* note that Western countries predominantly led the political discourse on this matter with the United States playing a leading role and these views at first were propagated by Western countries and international donors. However, they were increasingly adopted by the developing countries [Audehovde et al. p.21]. This suggests that becoming *developed* for a developing country from the early 1990s meant to change a society in accordance with views and ideas that were initially formulated by others. Therefore in order to develop countries would now have to accept the rhetoric and see the need of having technology, since in the ontological understanding of the information society, societies that do not possess ICTs are *underdeveloped*.

Taking this ontological understanding of the information society into account a dichotomy is drawn up; if a society is not able to be a part of the information society it is disadvantaged as it would not be able to participate in the New Economy. According to several international observers the African continent is facing severe problems in order to become member of the globalised information society mainly because of its lack of technology and infrastructure. In 1995, Shahid Akhtar and Luc Laviolette briefed the United Nations Economic Commission for Africa and gave following statement:

“Africa's information infrastructure is by far the least developed in the world. Technical statistics show that Africans have the smallest number of telephone lines per capita, the most restricted access to computer equipment, the most primitive information networks, and the most inaccessible media systems.” [Hall 1998 p. 2]

Rated on the basis of the state of communication infrastructure and the quantitative possession of ICTs, the above quote translates into a continent, which is *behind* and therefore needs to be *upgraded* in order to become an international, active player in the global economy. The dimensions of being either in or out of the global information society, and through this the global economy, is a part of this discourse.

These notions of globalisation, and the associated fears of exclusion, have been widely embraced by African governments. For example in South Africa the government established the Presidential National Commission on Information Society and Development in 2001 [<http://www.pnc.gov.za>], in order to investigate how ICTs can be strategically used for economic and social development. Moreover, it outlines a process in accordance with government policies of improving the *connections* to the global economy, ensuring growth for the nation of South Africa

[<http://www.dti.gov.za>]. Through this process the country should be transformed into an information society, on the basis and conditions as the one defined by Western countries.

When looking at the pre-amble for the commission web site, it is very much in line with the rhetoric surrounding the Information Society:

The modern world demands that, if a country wishes to provide a quality social environment, it must have a robust information, communication and technology infrastructure. South Africa has risen to the challenge with the establishment of the President's Commission for an Information Society.

This also suggests that specific ideas and notions of this global information society are being transferred and forms a specific way of addressing these issues. Discursively, this entails a set of strategies that are perceived as leading to positive social changes, as it is anticipated that a society with a good economy is a society that would always ensure and promote a better quality of life [<http://www.anc.org.za/ancdocs/discussion/natquestion.html>]. The consequence of not striving for membership of the global information society, based on the notion of the have/have not dichotomy, is to be left on the wrong side of the *divide*. The logic of this reasoning, however, seems difficult to question as a contra position would appear as not just anti-technological and anti-modern, but even against this improvement of quality of life for others. This kind of modern globalism seems only to leave space for a specific and dominating explanation of the impact of ICTs as *positive* and indeed *necessary*. Analytically, this draws up a specific epistemology that equally leaves very little space for the more broad examination of the consequences of ICT introduction.

The formation of the episteme [Heesen, 2004] around ICTs and information society then forms a very dominating discourse, which makes it difficult to question the aspects and notions around the globalising effects of ICT and indeed its effects and consequences in its very practical context, especially regarding the employment of ICTs in the so-called developing countries, where minor modification can be suggested, but the issues around becoming modernised according to global standards is not to be questioned. [Escobar 1995 p. 5]

In this way these terms represent a strong rhetoric, which is deeply rooted in the understanding of globalisation as being purely an economical matter. Escobar, for example, points out that the terms serve as a *regime of representation* [Escobar 1988 p.25], since entire continents as a consequence of this rhetoric, become locked in very specific roles as *developing countries, poor, in South* etc. with the perceived *necessity* of becoming modernised; in this context this means in line with the global standards subsumed by the information society. However it is worth noticing that these

definitions / representations are originated in the Western countries and were a part of the discourse that took shape in Europe and United States just after the World War II [Escobar 1988 p.429]. As a part of this discourse science, technology and economy has been seen as essential for improving the conditions in the *unmodern* locations, illustrated well with this quote from US-president Truman: “...*To produce more is the key to peace and prosperity. And the key for producing more is a large scale and vigorous application of technological understanding and modern science.*” [Truman 1964, As quoted in Escobar 2000 p.19, my translation]. The 'regime of representation' is the representation of an understanding of modernity, which is based in European discourse, but similarly represented in the notions of the information society, which is widely regarded as a modernity of societies that are located outside the modern, and as such regarded as *unmodern*. For example it can be problematised that it means for a little community in South Africa to have this discursive label attached and defined from not within, but from an external actor, for example a national government, based on external criteria.

1.3 Local Modernities

Based on the understanding of communities as units targeted for ICT implementation, this potentially involves a number of aspects that should be addressed, as a singular understanding of ICTs and its anticipated impacts may not potentially take the *differences* within the communities into account, but rather let the imperatives of becoming a global member over shadow a more investigating approach.

Rather than adopting a view, that only entails *modernity* as promoted through the connection to the economic globalism via the information society, it can be more fruitful to adopt a perspective consisting of multiple, local modernities [lauritsen et al. 2003]. Focusing on the perceptual understanding of being global, Appadurai [1990] argues that the connection to the global flows has an impact on this self perception of global membership, and as such would result in a change of practices within the *globalised* community. Since members through ICTs are now able to access information and read about other people's lives, leading to the formation of new *imagined communities* and consequently leading to a change of a self-perception based in a traditional community. To situate and understand what consequences this might have on a particular community and to find out if this is always the case, examining the community within its own localised modernity is useful [lauritsen et al. 2003]. Pragmatically, it would be useful to investigate if the global is actually included in the local, or if the technologies of the information society remain in the periphery of this specific modernity situated in the community. Methodologically, this high lights the importance of the researcher to be investigative and pragmatic in order to understand how globalisation is having an impact on localities. For the study of the role of artefacts in the socio technical landscape it is argued to be necessary to conduct micro sociological studies to *understand* what is really going on.

1.4 Understanding the Actors in the landscape.

As information and communication technology is understood as the primary means for under resourced areas to obtain membership of the global information society, I would also like to focus on the movement of these technologies. More appropriately, I would like to understand this as a passing of technology, which by each passing is being prescribed other meanings, depending on the actors handling these artefacts. This involves a process over time, where various actors pass artefacts from context to context with a changing set of intentionalities and translations. There are a number of actors involved in this process and basing my analysis on the general ideas of actor network theory I would like to focus on the networked interrelations among these actors, in order to understand the interactions between these heterogeneous actors.

In the actor network theory (ANT), the role of the actor is being emphasised, and the perspective of the different actors, through their interrelations in a network relation. More importantly actor network theory abandons the anthropocentric idea of only analysing interactions among *humans* but equally includes *non-human actors (Technological artefacts)*, which provides a conceptual framework for understanding the interactions involving technology. According to the basic ideas of ANT the relations between humans and non-human actors should be understood symmetrically, rather than being understood as 'belonging' to either a society context *or* belonging to a scientific context, and as such isolated from society.

Understanding that it is problematic to isolate technology from the society it is also necessary to understand the prescriptions of technology; in other words how is the prescribed meaning of technology being *translated*? The prescription of technology is never static, and is constantly being dynamically translated through the network it is a part of, therefore making the examination of the network important in this analysis. Understanding how things are translated and prescribed other meanings makes it important to analyse both the relations and the nodes of such networks.

Another key term I would like to introduce is the *black box*, which can be seen as an entity, where the negotiations of technology (e.g. Standards) have reached a consensus through the formation of long networks. At this point in time, the black boxes are no longer to be questioned and start functioning as nodes for the further progression of the branches of progression in the network [Latour 1987 p.80].

In order to understand the networks around technology, and to understand, *why* a certain standard is creating the basis for specific relations towards technology. As a part of the analysis, these negotiations should be traced back through their networks. The notion of the black box is important here, in order to understand how technology is being naturalised in its context and how it is thought to play its role.

The networks consist of various actors, who through their negotiations about the role of technology, eventually reach a consensus, by connecting other networks and making these either stronger or

weaker through alliances. This consensus, eventually becomes a black box, are also setting the standards for what are rational statements and what can be rejected as irrational i.e. not conforming with the anticipations of this black box.

Supported by *facts* and epistemologies the centralisation of this position is being strengthened, and as such outlines a position that has the power to define activities as either being rational or reject these as irrational; having the connection to large networks, relying on black boxed facts establishes a *truth* which is hard to question.

I believe the issues around connecting to global flows through information and communication technologies is also an issue about employing *black boxed facts* through the imperatives of globalism and ICT i.e. the perceived imperative *need* for acquiring ICTs and becoming connected to the global flows. It can be hypothesised that these imperatives are passed along with the technology in order to justify and argue for the introduction of technologies. Drawing on the notion by Madeline Akrich [Law 1999, p. 2] of technologies as being *passed* it would similarly be relevant to examine how these facts are being passed, along with technologies. Inspired by the notion of passing technologies it also means that in the understanding of this as a *process* I would like to adopt this notion, rather than regarding technology as something that is being *diffused*. Bruno Latour argues that the *diffusion model*, in this sense does not entirely explain the movement of technologies and facts, as this entails a free and effortless process, where these are just spreading [Latour 1987 pp. 132]. Rather, examining how these facts and objects are moving as being *passed* from hand to hand, from network to network [Law 1999] and how they consequently are being translated gives a better understanding of this process and also involves those who translate. In this thesis I am hypothesising that this passing of facts and objects is being radicalised through globalism and perceptions of globality, entailing strong anticipations about presumed positive impacts on social conditions, through the connection to global flows via ICT. From this perspective the model of translation makes sense, since these very strong facts of globalism and technology are *passed*, based upon a very dominating discourse originating in the West. However, in this use of actor network theory, I would like to problematise the aspect of the kind of technology in question. The basis for creating technology according to specific situated practices is then not available for re-negotiations and as such becomes a part of 'the box'.

1.5 Case presentation.

The main body of my data, is based on a three-day visit to the township of Thembalethu, outside the city of George, South Africa about 400 km east of Cape Town. Other data were collected during a visit to the headquarters of the South African para-statal company Council of Scientific and Industrial Research (CSIR) located in Pretoria. In addition, several telephonic interviews were conducted with six Multi Purpose Community Centres (MPCC), located within the Western Cape province. My main case for this thesis, however, will be based on data collected from the township

of Thembalethu.

Thembalethu can be described as a peri-urban area, as it is located in the out skirts of George, which in it self is a provincial city with about 100 000 inhabitants. It is one of South Africa's many townships, which started out as an illegal settlement for mainly black people. Recently however, major parts of the township has been a part of the provincial government's housing projects, replacing the self made shacks (informal housing), with one plane houses built with concrete blocks (formal housing). Yet the unemployment rate remains high in the area, and the majority of the population is either unemployed or belong to low-income groups. Locally, the area is low prioritised and among the citizens in George mainly known for its high crime rate. In this way, Thembalethu both literally and mentally is located in the outskirts of George, with very little prospect of receiving the status and identity as either suburb to, or even a part of, George. In order to improve government service delivery, the South African government has established a programme termed Government Communication and Information System, which functions to provide communities with the ability to actively take part in government programmes. Located in the so-called MPCC these centres provide various services, at little or no charge to the civil society. Services range from legal help, social services (including medical help) to educational services. The MPCC in Thembalethu also has a so-called tele centre providing access to the Internet, computer related services (word processing, printing, etc.) and computer training. In this way the MPCC in Thembalethu also has a social function for the community (e.g. a very popular assembly hall for celebrations). The Tele Centre paved the way for information and communication technologies to come *to* the community, as a part of government services. At the time during my visit however, the ICT facilities located at the centre remained unused for computer training, due to disputes between some of the employees and the management at the MPCC. This had led to two young local employees to establishing their own business (closed cooperation), providing computer training partly at the local schools and partly at other centres. Both had the idea to start the business after acquiring an international computer driving licence (based on UNESCO standards) and were motivated somewhat by the frustration of this organisational dispute.

As a way to understand community use of ICTs, I decided to take a further look into the Digital Doorway project, conducted by South African para statal company and research institute Council for Scientific and Industrial Research (CSIR)/MERAHA Institute (African Advanced Institute of Information and Communication Technology). The Digital Doorway project is based on a number of computer terminals developed specifically for local conditions. They are placed in de-centralised communities (peri-urban, rural, etc.), aiming at alleviating computer illiteracy and facilitating access to information in under resourced areas. An interesting trait of these projects is that it is based on an Indian developed learning strategy, know as Minimally Invasive Education [Cambridge et al 2004]. Unlike other projects of this kind, it is not based on an educational programme

providing skills for using computer technology; rather it opens up for the possibility that computer skills and IT-literacy is acquired through a process of trial and error experimentation. The idea is to situate these terminals within areas that are natural points of gathering for the community, and allow users to get hands-on knowledge of computer technology. These are publicly accessible points, yet situated away from formal institutions (schools etc.). Based on research, there are indications, that those using the terminals (children as well as adults) do acquire a much higher degree of confidence in the usage of these technologies [Cambridge et al. & Fox, 2003], which enables them to get to teach themselves to use computer software. Over time the acquired level of IT-literacy facilitate users' ability to obtain information and use this for improved living. The perception of the need for becoming educated in using computers is then present, although there is no organised educational programme; the ability to obtain information is being facilitated through the 'learning by doing' approach to the artefact. Through the acquisition of basic level of IT-literacy, it is perceived as a contribution towards bridging the digital divide. i.e. providing people in under resourced areas with access to information and education.

The Digital Doorway project is in many ways different than the MPCC's /Tele Centre approach, in particular, because this does not entail technology being based in some sort of formal institution, but is directly available to the population.

In this thesis, however, my interest in the Digital Doorway project is similar to the projects sketched out above, as they entail information and communication technologies targeting local under resourced areas, being installed locally. They both share similar intentionalities and trajectories of connecting these communities to global flows, through the connection to the global information society.

In order to obtain a better understanding of the role of the communities, and in particular the role of the MPCCs/Tele Centre I conducted 6 phone interviews with Multi Purpose Community Centres in following locations: Bonteheuwel Township, Langebaan (rural district), Hartebeeskraal (Township area), Vanrhynsdorp (rural district), Beaufort West (small town/rural district), Thembalethu township.

1.6 Problem statement.

Basing my research on my collection of empirical data from various sites and sources in South Africa my intention is to base my focus on the globalising effects of ICT in small communities.

I intend to investigate how the imperatives of the information society and ICT are being translated, when passed along with technology to localised communities, for the intention of connecting these to a global context on global terms.

As a part of the South African transformational goals towards de-marginalising previously

marginalised groups, what does the strong local emphasis on the need for including previously disadvantaged communities mean for the strategies for digitising these areas?

How are these communities, targeted for ICT implementation, constructed as a part of the landscape of development through the connection with the imperatives of globalisation? What is their role in this process?

How do small communities like Thembaletu deal with the imperatives of the need for connecting to a global context? What happens, when ICTs are being introduced to the community?

2. Studying globalisation – Reflections on methodological approaches.

2.1 The methodological problems of 'globalisation'.

Globalisation, globalism globality, how are these issues to be studied and framed? In this section I would like to account for *reflections on approaches*, by addressing the question on how one, as an academic is to approach a phenomenon like *globalisation* proliferated through the use of ICTs? I would like to specify my *focus* towards issues that are being investigated throughout this thesis and show and account for issues investigated in the field. This section serves to show how these issues have been academically framed and how I have been approaching the field and address the role of the researcher.

When studying the general implications of the employment and use of information and communication technologies in the context of the general ideas of globalisation, they come across as being prescribed into rather different discourses of economy, politics and in particular science [e.g. Castells 2003]. The new modern technologies are a part of the much hyped *information revolution* and through its *global* character held to be both a natural sequel of the industrial revolution. The wonder of these new technologies is not just conveying information across the globe, but the possibilities are also of ICT are also held to be the remedy for solving social problems in the third world countries [see e.g. Jensen, 2000 p.1]. The discourses of science and technology, development and globalisation methodologically mean that very dominating discourses are created influencing this field [see e.g. Escobar 1995].

With the imperatives of the general development discourse, locking most non-European countries in a *disadvantaged* position, combined with the on going debate on globalisation and the potential risks of marginalisation and the newness of modern technology, it would be easy to overtake a prescribed discourse and subsequently arrive at ready made conclusions. Therefore, approaching the topic of globalisation through a micro sociological study of ICT use requires a well considered and dynamic methodology, which takes its approach from an empirically based pragmatism.

Globalisation often appears as being a universal thing spreading all over the globe, as either as a threat of falling behind or a golden opportunity, but in any case is considered to be *global* both in terms of scale and consequences [Tsing 2000]

Information and communication technologies are prescribed into a specific role in this ontology, as an opportunity to overcome the anticipated challenges of globalisation, through its ability overcome the change of production and subsequently create prosperity, in order to overcome poverty [Pieterse 2002]. The notions of globalisation becomes institutionalised and subsequently becomes an *ideology*, something to live up to, protect one self from, run for or live by [see e.g. Beck 2000].

The notions of globalisation work through the modern institutions, such as government policies,

education etc. anticipating that globalisation in its totality and similarly the necessity of technology, as a means of *being* global and avoid being marginalised and left out. However, this entails a number of problems that are not being contained in this discourse: Globalisation becomes an issue, where geo political and cultural specificity is not a part of the discourse and consequently only talks about globalisation in a specific way that leaves out the perspectives out of the those not able to be a part of these narratives. With the institutionalisation of *globalisation* itself, becomes an ideology, an ideology of scale and a movement that comes from no where, but comprehend everything. The non-location, one-dimensionality [Beck, 2000, p.45] and yet all comprehending nature of these issues makes it problematic to analyse these issues, especially as *analysing globalisation* in itself would contribute to a further movement away from actually talking about this phenomenon and contribute to these very un situated notions about the global.

2.2 The Practices of Global Connections – Globalisation as Projects.

Therefore Anna Tsing points out that rather than adopting these notions, then it would be more useful to break it down into it smaller units in order to understand, what these *projects* that are stating a claim as being global and examine what they are *doing* in the world. Anna Tsing suggests that there is a need to understand these claims of globalism, as *objects of scale* working out their own logic and role in the world [Tsing 2000 p. 329]. She outlines the following points for investigation:

2.2.1 Futurism:

Visions of globalisation are working as this crystal ball, predicting the future of the soon to be global society, where everybody is connected in the global village [Jensen et al. 2005, p.1]. Where policies, initiatives and actions of the past have failed and disappointed in not achieving a better world, then globalisation is held to be a golden opportunity to obtain just this.

Visualising and forming the future ideas displays a cultural aspect of globalisation, which entails dreams, hopes of the present projected onto a *future*, as opposed to a *past*, with social problems, lack of opportunities yet still unresolved in the *present* [Tsing 2000 p. 332]. The dreams and the envisioning of a global culture becomes a marker for a direction to a future where everybody on the globe is united, free and prosperous [Tsing 2005 p.22]

Methodologically, the notion of futurism as an *object of scale* entails multiple aspects: Firstly: the need to understand these visions as emerging from a point in the present, which to a certain extent is re constructing and stereo typing the past and the point for observation here is how this process is taking place and what the past becomes. Further more *futurism* is reflecting the perceived needs and lacks presently perceived by the social actors leading to the pronunciation of *visions* for solving the

present problems. An object for study is to clarify the extent of these visions, in terms of scale and equally important to observe the effects and consequences of the futurist ideals.

2.2.2 Conflations:

When contesting ideas and visions of globalisation are going together, creating alliances and converging for the *definition* of globalisation and subsequently the measures and stands needed to be taken. Specific systemic ideas are fighting to become accepted as a valid view of globalism. But what is interesting in this process is *how*; how do these contesting views occur, how do they overlap, collaborate, form alliances etc. Where the constructed imperatives are outlining a particular logic, then the axioms of logic also create the possibility for alliances, making it relevant to see how these are forming alliances and strengthening these connections [Tsing 2000 p. 334] Therefore observing, showing and clarifying these alliances is a relevant point of study, especially how these alliances among the various actors are formed, maintained and created.

2.2.3 Circulation and linkage:

When the talk comes to globalisations it is often reflected as an issue of things and goods moving across borders at an ever increasing speed and as such leading to an increase in the circulation on the globe. It is subsequently anticipated that this is unprecedented and leading to the creation of new flows. In this perception of globalisation the movement of people is counted in e.g. tourism and emigration [Appadurai p. 296]. These flows are regarded as necessary to take part in and link up with, in order not to be left out of the channel and therefore imply a need to become *connected*. This is forming the interconnections and as such represent the movements in the world, but also a notion endorsed by the economic globalism, and therefore entails a focus, which is based on the focus on the circulation of money, rather than looking at the social conditions creating and encouraging flows. The blind assumption of things moving in an ever increasing speed across the globe, is excluding the examination of social conditions like e.g. social inequalities that would be leaving specific groups away from linking to the flows. Therefore this aspect is equally a point for observation.

2.3. Examining the Actors of the Global Projects.

Examining what projects of globalisation *do* in the world as *objects of scale* implies a method that entails the need for studying *how* these agents work in their ontological setting, how they are created, modified, represented, connecting, interacting and are translated. For investigating *how* these things happen, a notion of *actors* is adopted in this thesis, not understood as concrete units,

rather as everything that entails *representation, agency and trajectory* [Latour 1987 p. 84] and has the potential to act and interact with other actors. Similarly, it is being adopted that there is a thing as *non-human actors* i.e. a *representation* of technology, which equally entails agency. As these actors are created and defined through their actions [Latour 1987 p. 87] there is a need to see how they are working as dynamic entities. Therefore it is central to empirically to examine the practices and interactions among the various actors and in a particular setting, in order to examine how they are able on act upon and with each other and uncover the practices that are a part of these interactions.

Understanding the use and notions of the role and functionality of technology in an action based practice it is necessary to approach these issues pragmatically, in order to understand the role of technology, how it works in its ontological setting, creating alliance and strengthening or weakening arguments. To understand what is really happening it is necessary to understand the practices involved to illuminate these in *action* and as such also include the logical closures by human and non-humans in all its phases and this should include the closures uttered when attempting making the artefact and when the artefact has materialised [Latour 1987 p. 258]. In this sense the logical closures and the formation of the *black box* [Latour 1987 p.4] is interesting in the sense of examining how technology is being naturalised or attempted naturalised in its context.

2.4 Approaching the field – field research and the role of the researcher.

2.4.1 Research Positions – Locating the Researcher.

Academically to approach a phenomenon like globalisation through the understanding of information and communication technologies is a problematic task. On one hand strong notions and opinions exist about both, the importance of being a part of the information society and the imperative of taking a stand about globalisation; these notions are easily overtaken without much reflection, than the anticipation of its importance and existence. As pointed out by Anna Tsing this means that relying on a specific notion about globalisation means the unreflected use of the dreams and ideals of globalisation. In this way, an analysis could easily become another project of globalisation, which is equally reproducing a specific understanding of globalisation that does not include perspectives, sender or receiver, cultural specific or geographic location. This leads her to propose to rather engage in globalism and *understand* what the projects of globalisation *do* on the world around us. Inspired by this proposal this thesis is aiming at understanding *actions* in order to understand how the various actors are mutually interacting with each other. Inspired by science and technology society studies (STS) technology is interpreted through its sociological representation and through the ways it positions itself as an actor through prescriptions, translations, interactions

and mediation with other actors and the resulting consequences of these actions and interactions. A pragmatic approach based on the qualitative interpretation of empirical data is equally intended to understand these socio-technical interactions of technology, rather than subsume pre-scribed anticipations about technology.

When conducting research there is generally a demand for the production of work, which can be produced as being conducted and presented with a degree of objectivity, by which places the researcher in a role as being outside a practice going *to* the field and later document findings in an academic environment as research, which is standing out as an objective *truth*. However, as this stand is excluding any kind of position or situation of the researcher as an observer and an interpreter occupying this ‘classic’ role of the researcher is rather problematic, as widely pronounced in qualitative research and humanities in general [Latour 1993 p. 27]. The scientifically based researcher is claiming to be neutral and isolated from his or her own observation, which is problematic in many ways, as it ignores the role of the subjective position. Moreover, as criticised by post-modern observers, the claim of the researcher as being objective is in fact away to cover up the domination of weak practices and in this way raise critical questions about the issue of *power* relations between researcher and field, since only particular discourse would be granted privilege and too often discourses that are already strong, making it difficult for other more weak practices to be heard and seen [Jensen 2005 et al. p. 59]. By some scholars this issue is framed as being as matter of the ability to repress through a knowledge-power relationship and as such discussed as a necessity, that the qualitative based researcher should be clear on how he or she is locating him or her self in the relations with field, in order avoid taking a position of dominance where observations and discourse is exclusively pronounced from a dominating stand [Escobar 2002 p. 4]. However by some scholars the discussion about the relationship between ‘knowledge and power’ is too limited, as it is argued that the discussion is delimiting a variety of intellectual positions, which are made available through the active engagement in the field. For this reason qualitative research should rather be a process of elucidating practices, rather than trying to establish a neutral an *objective* truth [Jensen et al. 2005 p. 61]. As argued by Jensen et al. [2005b] then the researcher is connecting to the field through partial connections and as such they argue that research should be regarded as a matter of *ontological relationism*; it is ontological, since the researcher is articulating new properties of a situation or new modes of action and through this actively working in, re creating and creating a situation; it is relational, since learning and articulating requires a connection if anything should be learned rather than distance [Jensen et al. 2005 p. 69].

Qualitative research should therefore be carried out with an attitude of humbleness and reflection about productive ways of connecting to other practices.

In the role as a researcher illuminating practices that are not usually visible is at the centre of the

work. The notion of the researcher as being a *partially*, yet actively constructing the *new* does place a responsibility of research with the researcher and for how it is being conducted and the status as being partial rather than being a researcher with an authority, stresses the need for approaching one's field with a sense of humbleness. Going to a setting with many sensitive issues relating to politics and a past filled with numerous examples of discrimination high lights the necessity for being sensitive and humble in order to be able to connect to these practices, especially in a third world context where the researcher is already perceived as being pre-scribed a privileged position (White, Male, European, Wealthy etc. etc.); understanding and being sensitive to one's own relations to the field is then particularly important, in order to actually establish these connections. The issues around giving *privilege* and *being privileged* is very relevant in the context of South Africa and other third world areas, that are constantly being defined and re defined through discourse and areas where the inhabitants have experienced being isolated and unprivileged in various ways [Ravjee 2005, p.4]. Towards this and there is a frequent debate within the academic institutions how to conduct research, which is *ethical* [see e.g. Maepa 2003]. Inspired by two seminars regarding scientific racism in physical anthropology I have been attending at the University of Cape Town I would like to highlight this aspect of research.

In this sense acting according to ethical principles is also to connect to a specific practice relating to the field and in this way accepting a practice an existing practice. Other observers note the ethical aspect of research should have an even more central role, in order to avoid a very typical scenario: Researchers, typically from Western institutions go to a poor rural area in a developing country, do their academic research and return to their universities. For the population in such rural communities the interest shown by a researcher is often seen as an opportunity for change. By leaving without giving back, in terms of for example capacity building in ethically questionable [Rhodes p.2]. In this respect traditional research methodology, based on only collection of data in the field with the sole purpose for use in academic work does face these problems contradicting a very African ethos of *giving back*. Some South African researchers are stating that research should comply with the African ethos of humanity *ubuntu*, which prescribes the virtue of sharing. Research wise it is suggested that research results are returning to the community, if not as capacity building for the direct benefit of the community, then at least as written material [Maepa 2003 et al. 223].

2.4.2 Personal Agency – Conduct in the Field.

For this reason doing research in another context than ones own *humbleness* and at least consideration of local standards of conduct is necessary if that methods used by the researcher are ethically correctly and do not infringe the rights of people involved in the research. When collecting data it is important that the interviewee are made aware about the use of the data and when

recording they should be aware of this. Permission to conduct an interview is therefore always obtained first. Moreover, before the interview the interviewees are being given an idea about the significance of the data, and why they were selected for interviews. As information is given this should be regarded as confidential and the interviewee should have a guarantee of confidentiality. Clearly stating what the interview is for is a good way to make it more transparent to the participating parties why the researcher is there. It also helps to build a relationship of trust between the researcher and interviewee, which is a great advantage if the research situation requires on going interviews with the same person or more persons in a particular limited area.

The researcher is often confronted with a context, which is highly political often makes it difficult to actually conducting research which is politically independent and as such makes it hard to maintain a sense of objectivity in the research results. Especially being a researcher coming from an industrialized country often creates an idea of a person, who is able to provide a disadvantaged area with resources, which inevitably will give the researcher a position which is biased. It is suggested that the research is being designed to take these often very strong biased positions into account.

One of the most important things I had from travelling to South Africa and being in the context of my research was the introduction to and insight in this very important issue. Meeting South African researchers and being able to follow the debate on this field has heightened my attention on the importance of this aspect.

2.5 Obtaining and Analysing the Data.

2.5.1 Interview methods.

Employing Grounded Theory as my main research methodology meant that most of my data was based on interviews conducted with informants. A smaller amount of the data collected was based on observations in the field.

In Grounded Theory it is stated that one should always aim to make as many interviews with people as possible in order to obtain a sufficient richness in data [Corbin et al. 1998 p.22]. In my case I had to deal with different aspects during my data collection that to a certain extent kept me from interview as many people, as initially planned. As this demand for richness in data remains fairly undefined, in terms of number of interviews no precise measurement exist to determine whether sufficient interview have been conducted. Therefore, the selection of interviewees was something that I had to face and be responsible for in my research. As data shows I am, however, of the idea that my selection of interviewees ensured sufficient data for this thesis.

In my work I was faced with certain practical issues that did keep me from conducting more interviews; these entailed: the lack of transportation: South Africa is a big country and public

transport is limited, especially in areas outside the city centre. Other than that lack of financial resources, time and capacity also put a limit on what could be done. Therefore, to add additional perspectives to my thesis I chose also to actively including material, technical notes, representing discourse issued or influenced by the South African government and other official entities with an official opinion on globalisation and ICT integration in disadvantaged communities.

Because of my research methodology I aimed at keeping the interviews as unstructured as possible;, especially the initial interviews, in order to get my self an idea of what I should listen for.

Following interviews were done:

1. Phone interviews with multi-purpose community centres in South Africa's Western Cape Province.:
2. Interview at Council for Scientific and Industrial Research (CSIR) in Pretoria
3. Interview at Thembaletu Multi Purpose Community Centre in George, equally located in the Western Cape Province a few hours drive from Cape Town.
4. Interviews with school pupils and adult learners in Thembaletu township area.

[See Appendix 5]

The first interviews meant as pilot interviews for getting data for the further determination of interesting topics to take a closer look at. This was also meant as a first initiative to actually get away from the documents and since making telephone calls from the university office meant an easy access and this seemed as an obvious way to get in contact with the people actually working at the community centres. Calling from a university and being an academic seemed to be very welcome and all interviewees were making time for answering my questions. The willingness among the interviewees made it easy for me to arrange a visit to a multi purpose community centre. At this stage I was only little aware of the practices I would meet in the context, other than the problems and prospects represented in official documents, research reports etc.

These first interviews were kept unstructured, in order to let the interviewees answer questions and commenting the way that he/she would feel safe about [Rubin 1995 p. 5]. I asked only initiating questions and accounts from interviewees were noted down and not taped. Since no prior arrangements had been made with the interviewees these interviews were fairly short, but gave a good idea about what issues could be relevant to go deeper into. If longer interviews were to be conducted it would be essential to make prior agreements with interviewees and make sure that they would be fully aware about the purpose of the interview and why their participation would be valued [Rubin 1995 p. 141].

The next interview was conducted in Pretoria at the head quarter of CSIR. In this case as semi structured interview was planned outlining questions, in order to keep the interview on track. Through several phone conversations with interviewee prior to the interview had already given me a good idea about what could be relevant to ask about. However rather than having an interview that merely would be verifying facts and hypotheses then I was aiming at keeping the questions as open ended as possible, allowing the interviewee to be more freely responding to the questions. When asking questions I was aiming only at using open ended questions, typically beginning with What, How, Why etc. In this way I was aiming at avoiding dichotomy questions that could be answered with either 'yes' or 'no', only in cases, where a verification of facts for my own clarifications was needed. During the interview I was trying to keep a balance between encouraging the interviewee to elaborate on particular things mentioned during the interview, which would catch my attention. It was also important to the continuity in the interview by not purely asking pre-determined questions, but rather probing, asking for clarifications, elaborations, drawing the interviewee's attention to interesting things etc. A pre-arranged setting was clearly an advantage, as the interviewee was able to out time from an otherwise very busy schedule. Obtaining contact with a para-statel company, which in this particular setting can be regarded as a representative for government policy was in this sense interesting, in order to get some words on the practices of involving in integrating information and communication technologies in community settings and the way that they are interacting with people based within the local settings, but also to interview an initiating and resource full actor, that would naturally occupy a dominating role in this space between state and community.

The next interviews were collected over a period of 3 days in Thembaletu township, George. In this case I was less aware of what I would experience and who I would be seeing. Therefore an even less structured interview guide was worked out; it consisted mostly just of main questions, that could be asked if relevant in the context. Because the field was unknown to me I prepared my self on the necessity of supporting my interview data with observation data. This all turned out to be relevant when arriving to the field, since I was faced with the choice of multiple interview sites, where I had to make quick decisions on site about who to talk to. This meant that some interviews were more like informal conversations. My contacts obtained through the initial phone interviews gave me the opportunity to go and visit a multi purpose community centre and through that actually go from an academic context out to the township setting and through this meeting the interviewees in their own setting, which equally gave me the opportunity to observe practices involving the use of technology.

Furthermore my informants provided me with the opportunity to speak with:

A headmaster of a Primary School

A deputy manager at the local Multi Purpose Community Centre

Had a meeting with the director/computer skill trainer and business partner

Three primary school computer classes

One adult learner IT-class

Employees working with community computing, at a local computer company in George.

2.5.2 Method for Data Analysis.

In this paragraph I would like to account for the methodology used for analysing my field data in accordance with the principles of Grounded Theory. This is included in the methodology chapter, since Grounded Theory does not prescribe a rigid analytical procedure, but encourages the analyst to develop his or hers own procedures. The analysis should be guided by a provisional structure, in order to maintain a systematic analytical process [Glaser et al. 1967 p.101].

My analysis of my data was done quite early after obtaining the first data. Before starting an active collection of data the research question was framed giving directions for the research.

During the preparation for collecting data an agreement of visiting a site, that would be the main case study for this thesis did not work out, consequently forcing me to obtain data from multiple sources and sites. Analytically, this meant that the early phases of the data analysis to a certain extent had an implication on the selection of sites for obtaining data.

These conditions meant that the progression of data analysis had to be seen as an iterative process, where each iteration at a meta contextual level had to re-evaluate the entire process and re-formulate analytical questions and operational questions. In this case operational questions included reflection on the selections of sites for obtaining data. An iterative process meant that all elements that were having an impact on the analysis were regarded as being dynamic in nature, and changeable. A pre-survey based on phone interviews was conducted, in order to further define and strengthen the research question.

Interview guide CSIR:

About the digital doorway:

- Localizing and meaning (department, company)
- State – Company relations
- A time line for the project (how did it all begin)
- Considerations for design (engineering)
- Considerations seen in the context of the larger visions – sociotechnical
- View of DD's role in its praxis in the context of the larger visions – sociotechnical
- The translation of the development idea
- Vision to praxis and employment
- Relating technology to global trends/globalisation
- Technology and the improvement of the distribution of knowledge. Relations between the idea of the physical artifact and the idea of developing human capacities. Examination of the inter-relations
- Considerations about the difference between India and South Africa, in terms of employment of technology

Fig 1. Initial questions for CSIR.

Research categories:

Services offered

Interest

Authorities

Community

Facilities: Security

Managerial problems

Logistic problems

User group

(Altruism/ideological aspects)

Technology attitudes and acceptance of technology.

Fig. 2 initial categories based on interviews with MPCC

2.5.2.1 First iteration

For the first iteration what I had, was a master research question and a transcribed interview. The

research question was then forming the context when initiating the coding procedures and on this basis I started coding concepts found in the interview transcript. This procedure of conducting open coding then furthered the definition of the master research question and in particular research sub questions. The coded concepts were categorised in order to create an overview of the data and meaning and the categories founded the basis for further investigating the transcribed data through a constant comparative method [Glaser et al. 1967 p. 105], aiming at de-constructing and examining the categories found in the data. At this point in the analysis, the process now consisted of three parts: Research question/sub questions, data and categories, that in this interrelated dynamic process were being develop. This development then formed the progression of the analysis, once again strengthening focus and understanding of the field data and case. The process of constantly developing questions, was also very beneficial in terms of increasing the awareness of areas where it could be interesting to obtain additional data. Next phase still entailed in the first iteration was the constant questioning and development of categories, by using methods to generate questions in order to challenge assumptions about the data. Methods included asking questions about the categories, detailed analysis of specific words and sentences and various ways of comparing the various categories with one another [pp. 50 Corbin et al. 1998]. These were very helpful in order to alter perspective on data and achieve more theoretical depth in the empirical data.[Corbin et al. 1998 p.41]

Already, at this early stage in the analysis certain patterns started to show and although the initial sets of data in the early stages primarily served as a way to obtain this overview of data and meaning the emerging categories, and sub questions did develop into forming loose hypothetical assumptions, that, however at this stage were not 'ripe' enough to undergo a validation process, since the data at this point was not rich enough. For each category analytical memos were written, but were at this stage very simple; operational notes were written in order to keep the process on track and develop meta procedural ideas that would be supporting the analytical process.

(See appendix 1 & 2)

2.5.2.2 Second iteration

In the second iteration of the analysis, the starting point was a set of very provisional categories, not very well defined notes, a lot of sub-questions and naturally the master research question. At this point, however, proceeding with data sampling was a bit easier, as the sub questions were guiding me towards areas that would be interesting to take a look at. For example, at a point during the analysis I realised that focusing on ICT in an educational context would be interesting, as much of my data indicated that ICTs is closely connected with learning skills.

The nature of the coding was changing at this point, since concepts were now coded on the basis of the developed, but yet provisional categories, rather than the master research question. All parts of

the analysis now proved to be a lot more focused on the actual research and this process was furthering the definition of the research question. The process of developing categories continued, still regarding categories as provisional, meaning that they were only to be regarded as a temporary structure for supporting the analytical process and should be regarded as a part of the analytical dynamics at all times. At this stage categories were getting more and more stable as they were developed, also they were getting more saturated and defined. The nature of the analytical memos was changing, since they went from being with little detail to be more descriptive about the categories and more importantly, they went from only describing one specific category to be relational and comparative about other categories. The process of dimensionalising the properties of these categories was facilitated by obtaining extra data and through that more instances of data. Hypotheses now had better conditions for emerging from the data, as a part of the progression of narrowing and defining focus, and this fact made a more comparative and validating process relevant. However, as described by [Corbin et al. 1998 p. 22] a focus on building theory, rather than aiming to validate a specific hypothesis making it necessary at this point to regard the process as one generating multiple hypotheses of equal importance.

Data sampling during the second iteration also had the character of validating obtained hypotheses through the increased focus on finding instances for confirming or falsify hypotheses.

Throughout my analytical process I tried to maintain a procedural structure of firstly coding concepts based on an open coding process, where data is being 'systematised' and structured in order to obtain an overview of meaning. Then axial coding, where condensed categorised meaning is being structured in a relational manner to further elaborate on meaning and ending up with selective coding, where specific categories are being picked out for further analysis and description. However, maintaining a strict procedure would be difficult since one soon realises that through the process one is almost required to alternate between these three approaches in order to focus on specific parts of the analysis. Once again it can be argued that a process consisting of several iterations is necessary, especially as the coding process progresses and the analysis raises further sub questions of analytical interest.

2.5.2.3 Third iteration

After the last two iterations the process took another turn, which in this context can be labeled as the third iteration. In this phase data and the generated and validated hypotheses were compiled together with theoretical memos and categories to put them into a relational and comparative relationship. This was done in order to further the development of theoretical memos, that were to form the basis for actively developing theory. Moreover, this was done in order to challenge previous anticipations about the data and integrate categories into the 'larger picture'. At this stage it was more about defining the analytical output in accordance with the main research question and as

such define the role of the descriptions in the written work. At this late stage data sampling became a lot more selective and increasingly had a secondary role as validating hypotheses derived from primary data. Also, at this stage the kind of data was more in shape of technical notes, for example academic works by others, articles etc. I found that the comparative study of technical notes at this stage proved to be very valuable as a way of locating and reflecting about one's own results when seen in the light of more comprehensive research work; naturally still prioritising own work as primary rather than discarding own hypotheses.

2.6 Summary.

Academically to approach a phenomenon like globalisation through the understanding of information and communication technologies is a somewhat tricky task. On one hand strong notions and opinions exist about both, the importance of being a part of the information society and the imperative of taking a stand about globalisation; these notions are easily overtaken without much reflection, than the anticipation of its importance and existence. As pointed out by Anna Tsing this means that relying on a specific notion about globalisation means the unreflected use of the dreams and ideals of globalisation. In this way, an analysis could easily become another project of globalisation, which is equally reproducing a specific understanding of globalisation that does not include perspectives, sender or receiver, cultural specific or geographic location. This leads her to propose to rather engage in globalism and *understand* what the projects of globalisation *do* on the world around us. Inspired by this proposal this thesis is aiming at understanding *actions* in order to understand how the various actors are mutually interacting with each other. Inspired by science and technology society studies (STS) technology is interpreted through its sociological representation and through the ways it positions itself as an actor through prescriptions, translations, interactions and mediation with other actors and the resulting consequences of these actions and interactions. A pragmatic approach based on the qualitative interpretation of empirical data is equally intended to understand these socio-technical interactions of technology, rather than subsume pre-scribed anticipations about technology.

3. Creating the community – Disadvantaged areas as social landscape and collaborative units.

This will ensure that South Africa, and Africa, takes its rightful place as a competitive leader in this new paradigm of advanced technology. We will literally bridge the digital divide so that we may share our hopes and dreams with the rest of the world. Just as we would invite you into our villages with our warmth and hospitality, we will be joining you, our friends, in this exciting new global village, the village we call mother earth. [<http://www.pnc.gov.za>]

The dream of becoming a part of a commune and taking advantages of global development takes its starting point in the traditional Africa, which in the above mentioned quote equals the villages, extending the local village all the way to the global village. Indicated in the quote above is that the relations to the global knowledge society is all inclusive and does not conflict with traditional values rather the key here goes through the implementation of technology in the villages for closing the divide between first and third worlds for the inclusion in the global knowledge society is meant to include the traditional African village, as a part of its landscape. The rural communities are prescribed a role as the most disadvantaged areas and in the development discourse thought to be those most in need for being de marginalised and developed [<http://www.dti.gov.za/bee/complete.pdf> p.4 – transformation imperative]. NGO efforts are directed at this task to help these communities in this effort and among international aid organisations, e.g. World Bank, are even promoting the view that this development should be *community driven* i.e. the efforts of reducing poverty should be found within in the community itself [<http://www.worldbank.org/cdd>]. The communities are central in the development discourse as these areas that are regarded as being poor, traditional and in the need for help and development, in order to become connected to a larger commune; in the discourse on the information society often phrased as a need to become a part of the *global village* [Jensen et al. 2005 p.1], making the metaphor of the village a strong rhetorical tool.

However, in the social-technical space the community also have a specific *functionality* in the social interactions relating to the introduction and visions of digitising disadvantaged districts. In this section I would like to regard communities by three distinctions:

The Community as social landscape: Understood as the actual physical location, where action takes and the negotiations and interactions are taking place *within* as well as from the outside interacting with a specific locality as a part of the trajectory of the actors involved, making it relevant to understand what practices are involved in these interactions [tsing p. 173]. This aspect of *community* will be examined elsewhere in this thesis.

The Community as a symbol: As will be argued in this section, then *community* itself often appears as being a construct of development discourse and in this way becomes a *concept* detached from its physical site and rather works as a stereotyped construct within the logic of the development discourse itself, yet remains un located and undefined. However this symbol equally serves as an object of collaboration and a *tool* for creating alliances.

Lastly, **The Community as an actor** interacting with the other actors through network relation, with its own trajectory and reason for creating alliances [Latour 1987], but here understood as agency coming from within the community itself and this will be illuminated later sections in this thesis.

In the success full globalisation of these communities are envisioned as being *connected* in order to be a part of the dream of globalisation, and in this way the futurist dream of prosperous communities outlines globalist strategies; they are required by the dream of the global village [Tsing 2000 p. 347].

This section is aiming at understanding the symbolism of *community*, how it is constructed and defined in order to fit into the global context. It is also trying to understand the problems of this unitary representation, which is argued at not taking diversity and local context into account.

3.1 The global village of Africa – African globalism.

"We must bridge the gap between urban and rural communities, between blacks and whites and the digital literacy gap.... What policy would best facilitate access to the Internet for all schools to communicate irrespective of where they are, while paying specific attention to rapid technological changes that must make South African business competitive. Our efforts to bridge the divide is primarily about people and not primarily technology." [Mbeki, 2001b]

As indicated in this quote the South African government is emphasising the humanitarian ideals of *inclusiveness* and the centrality of *people*. There is an understanding, that the being a part of the knowledge society should be integrated into the ideals of *new* post apartheid South Africa [DASCT, 2001]. The connection to the global is also an issue of connecting and closing the gaps locally between the communities; *the global* is in this sense understood as a global *commune*. The humanitarian ideals are formulated, as being naturally a part of the ideal of becoming development, prosperous and democratic and through this going towards connection to the global context. As illustrated in the quote in the beginning of this section, the notion of the traditional African village is present and calls for a need to connect with the global village, as an image of the electronically

wired globe including everybody in this brand new world. The inclusiveness and the centring around people outlines a humanitarian ideal, closely associated with the notion of the local need for acquiring global values of democracy. In a speech the South African president states:

On the national front, as you know, our new Constitution was adopted by an overwhelming majority of South Africa's freely elected representatives a few days ago, on the 8th of May 1996. This historic document is itself focused on the development of a people-centred society, for whose realisation information and communication are central. Mbeki 1996

As indicated in this quote, the democratic values of information and communication are central and even linked to the constitution, as a way to ensure the humanitarian ideals of inclusion and demarginalisation. This shows, that the notion of having the disadvantaged areas linked and connected is thought as being an integrated part of the constitutional rights and in this way creating a link to prosperity, and the democratic inclusion. Moreover, in the government discourse, there is equally an establishment of a link between the democratic rights and economic prosperity and therefore specifies particular, targeted areas and states:

That[technological] revolution has to take place essentially in the historically black urban and rural areas, which are our own domestic Third World, relative to the historically white First World. Mbeki 2001c

The envisioned new society is in this way entailed in government visions, which then work at two levels: the aim for global integration and equally for national integration, with the global integration being an inspiration for national integration. *The community* plays an important role, since it has been pointed out as a targeted location, through the reference as being *third world* and as such included in the imperative of ensuring and improving socio-economic conditions.

In this work, South Africa is particularly influential through representation in all continental organs of Africa (African Union, Pan African Parliament (hosted in South Africa) and NEPAD) [Pejout 2003]; all organs advocating for the establishment of the humanistic information society, promoting humanitarian ideals (freedom, inclusiveness) as well as prospect for economic prosperity, both among the African countries, as well through the participation in globalism.

By Nepad Globalism is coined this way:

By globalisation, which we see as an evolving and ongoing historical process, we mean the integration of national systems of production and finance. It is driven by policies of liberalisation in trade and finance. It is embodied in an ensemble of international relations and institutions, at the apex of which

are the multi-national corporations, multi-lateral trading and financial institutions like the IMF, the World Bank and the World Trading Organisations (WTO). Faster globalisation is reflected in the incredible growth in the size of cross-border flows of goods, services and capital.

The choice for countries of the South is not whether to engage with globalisation or not, but how to engage with it. It is essential for governments and people to engage with the process critically, to reshape and re-direct its impact. The objective must be to enhance citizens' incorporation and access to the benefits of globalisation, while minimising polarisation and social exclusion, and mitigating these effects when and where they do occur. [Mbeki 2001c]

3.2 Globalism – A trans-national way out of poverty.

The modernity ideal of the new South Africa and the emphasis on *integrating* the third world, rural communities is equally a part of a globalist strategies for creating and alliance, ranging all the way from the people in the villages, via the trans nationally construct of *Africa* to the world. This way of grabbing the opportunities of globalisation and the subsequently assumed prospects of a future, which promises are being ensured, such as human rights, economic prosperity and most of all a membership of a global community. This is the modernity ideal of the African Renaissance, the re-birth of an African identity in a hasty moving world. Very different units and objects are being drawn together, in order to overcome the fact that they are very heterogeneous in nature [see e.g. Latour 1990] in order to ensure and accelerate a movement going towards global acceptance and unity and commune. As the notion of the African community is being drawn in as a symbol, then there is an emphasis on the commune aspect of globalisation through the acceptance of global values and the metaphor witnesses of a trans national space, yet based in a cultural anticipation of an African identity [Beck 2000 p.27] equally contributing to a change leading to the re-definition of Africa as being conceptual, rather than referring to a continent.

With the increase in the global flows of capital, the economic globalisation there is a worry of not obtaining a membership of the global commune as offered through globalisation. But the prospects of strengthening these links and the possibility entails a promise of obtaining what half a decade of international development aid has failed in doing so far: eradicating poverty at the African continent for the humanitarian ideal for improving the quality of life for its people. In the views of the South African government, the changing structures in international capitalism are not just offering un precedent opportunities for the continent, it is also being regarded as being imperative, that there is

an active participation with a continuing effort for connecting domestic third world areas with domestic first world areas, as well as connecting third world nations (Africa) to first world nations (Europe/ North America) for targeting the main issue: Poverty, which equals a hindering factor for *quality* of life. [Maepa et al 2004 p.219]

3.2.1 Poverty Alleviation.

As many organisations World Bank is locating its initiatives for improving living conditions in the communities around the need for *alleviating poverty* [Beck 2000 p.155] and like the in rhetoric of the South African government is revolving around the issue of economy as an understanding of *development* and subsequently creates a rhetorical connection between the *poor* rural areas and the dream of globalisation of using these *new* opportunities for improving socio-economic conditions. The effort of integrating economies and making connections between these (for South Africa: domestic: First World/Third World Internationally: Europe-United States / Africa).

This suggests that economic thinking of globalisation also entails a notion of a progress resembling the process of social *transition* that South Africa is currently undergoing.

The transformational process was initiated by the ANC, shortly after winning the elections in 1994 leading to a number of initiatives giving the previously disadvantaged groups the possibility to actively be *included* in the society and in this process become overcome the isolation promoted by the former apartheid government [de Klerk 2004] The profound social changes in the South African society, where the notion of the necessity for becoming *included* and *connected* to a larger context, and as such transcending localities

The arguments for putting an effort into having these areas into globalisation through the introduction ICTs, pretty much exists within what Beck refers to as *globalism*, as a result of a change in the notion of 'being global' (*globality*). In the case with South Africa, this neo-liberal globalism is associated strongly with the nationally based ideals of *transition* involving the endorsement of a united nation, democratic values, poverty alleviation and de-marginalisation of (previously) disadvantaged communities [Dlamini-Zuma, 2001].

This shows not only how South Africa is showing relating to globalisation, but, drawing on Tsing [2000] also shows, how this notion of globality is very much influenced by conditions, local to South Africa and that this discourse is for most of it produced by the South African government. In this context *globalisation* as *globalism* should be understood not as much as being external of South Africa, but should also be regarded as a matter created internally. The process of transition and, with the associated visions on the behalf of disadvantaged communities, can then also be understood as a local way of acting upon a locally based notion of *globalism* based on local

perceptions of globality

According to Beck there is a need to see and realise the formation of the new networks that emerge through the increase in the number of transnational actors that have an impact on traditional nation-state decisions. He terms economic globalisation Globalism and argues that this is the reduced understanding of this development viewing purely as an economic matter of neo-liberalism, consequently not taking the multidimensionality of globalisation into accounts e.g. the cultural impacts [Beck 2000 p.15].

What is very central appears as very central is the focus on poverty alleviation, the quest for making sure that the economic prosperity is reaching the most distant areas in the country. The efforts are not just sought to be involving a national level, but equally strengthen the identity as *African* as opposed to Europe and yet equal in the competition

[<http://www.anc.org.za/ancdocs/anctoday/2001/text/at39.txt>]. This involves a shift from an inhumane condition towards *the global*, which is associated with a sense of humanity, rights and improved *quality of life*. Based on this perception the communities that are located in specific areas are anticipated as being *rural*, *poor* and unable to take part in this opportunity for obtaining prosperity. The prosperity promise of globalisation is then being radicalised together with the promise of humanity. The previously ignored areas are changing their identity through this process, going from being ignored to become these areas that are excluded from their *rights*. In the knowledge society the values of democracy, human rights, dignity and economic prosperity melt together.

To understand and frame the term 'development' and subsequently the duality between 'developed' / 'underdeveloped' and go beyond *why* the structures were established and how it fits into the South African version of globalisation, it is relevant to look at how *development* and third world was created and is sustained, through the discourses around development aid [Banerjee et al. 2001]. The notion of development has been around for several hundreds of years, but most scholars agree that it was particularly endorsed by then US president Harry S. Truman in his inaugural address 1949, where he said:

“We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas...The old imperialism – exploitation for foreign profit – has no place in our plans.” [Banerjee 2001 p. 686]

Several observers and scholars argue, that the very notion of a *third world* was created by this speech. It is also argued that from that day two billion people became underdeveloped, in the sense that they became “an inverted mirror of others' reality: a mirror that belittles them and send them off

to the end of the queue, a mirror that defines their identity, which is really that of a heterogeneous and diverse majority, simply in the terms of a homogenising and narrow minority” [Banerjee 2001 p. 686]. The discursive labels had now been added to people in the third world as *poor*.

Later speeches by Harry S. Truman were furthering the arguments for promoting a development aiming at alleviating human misery through Western enlightenment, science and industry.

For Truman the concepts of economy, science and technology were the means to make this massive revolution possible and expand American values of peace and abundance though out the planet, following the American success in World War II [Escobar 2000 p. 20]. Moreover the policy would strengthen America and it is European allies a central role in world politics. During the following years the United Nations concluded, that old costumes and traditions were an obstacle towards economical progress and it therefore would be necessary for third world communities to pay the price of abandoning indigenous life styles and actively adopt foreign aid in order to become industrialised [Escobar, 2000 p. 20]. Thus the ideals of progress and prosperity became very central in the development discourse.

The strong emphasis on the necessity for involving technology and creating the knowledge society entails and emphasises this narrative of inclusion and as a natural part of globalisation. The information revolution has the claim of being global, and it is build around non-human actors, that link, connects, provides information for enlightening the population, it teaches and could even facilitate the establishment of businesses, which would mean a direct socio economic improvement to *poor* districts. The new opportunities in technology are widely embraced and in this sense are materialising and embodying the visions of linkage and connection. In this way, the technological features of computer technology fit very well into this process of modernisation. Those parts of the country that was previously, intentionally left on the outside in an inhuman manner are envisioned being connected in the knowledge society also draws on the justice of the world community [Mbeki 1996]. The enlightenment entails, that the entire country should prosper in the knowledge society and eventually enjoys improved social and economic conditions through its newly acquired modernity.

In the understanding of this *landscape* in which these acts of globalisation take place it is necessary to understand what conditions that are making these localities target areas being global yet claiming to be local. [Tsing 2000]

In the South African context there is a large numbers of NGO's, mainly nationally based are basing their activities on these discourses, that have many similarities with the aims defined by the South African government, as means for becoming a developed global player.

In this way, transition, uplift of communities, development and globalisation, through their definition within a particular context situated in a specific setting, which makes these terms connected and relevant in understanding globalisation in South Africa. The creation of the

information society in South Africa, and the *future* as connected to the global flows as a high tech e-nation, that prospers, is united and offer equal democratic rights and opportunities seems to be a part of this dream. As a part of this dream the aim is to create projects that will make these areas, that nationally and internationally are defined as *underdeveloped* a part of this revolution. Therefore these areas are particularly targeted for the introduction of ICTs, in order to live up to this modern world. Acquiring ICTs for a community like Thembaletu is then also a part of becoming modernised, and a part of a change, where living conditions are necessarily improved and through this outlines a clear rationale for these communities to acquire ICTs, expelling other notions of the benefits of ICT as irrational. Moreover, the membership of the information society is also backed up by a strong actor, such as *science*, as the facilitating artefact for preparing the user for this new society, which is the outcome of government policy. The South African visions of a membership of a global information society, then very much resembles the internationally based discourses on development, and even amplifying the visions of positive social outcomes through this process of modernisation. The historical past of the country outlines imperative needs of de marginalising previously politically disadvantaged groups, which is embedded in the visions of a national modernisation and the central position of ICTs, as facilitating governance, education and the prospect of increased welfare, even amplify the imperative necessity of acquiring these technologies.

The South African ideal of using technology for modernising then be seen as resembling European ideals of modernising *third world* countries [Escobar 1995] and is highly consistent with western modernity theory which is being radicalised by outlining the necessity of getting areas in periphery of globalism, like Thembaletu, made modern. Therefore, in line with the argument of regarding the notions of globality and globalisation as being locally situated, this modernity ideal does in various ways represent a logocentric stand for the development of a country that in many ways is very diverse. This logocentrism, means that the ways this development is done can be questioned to a certain extent, but getting beyond the question of modernising it self, is not easy, as this would be considered as irrational [Escobar 2002]

Moreover, these visions are homogeneous in nature, as they are aiming at formulating one vision for a number of diverse communities, encompassing these in a national strategy. On this aspect, critical questions can be raised about this ideal of modernity

In order to acquire the possibility for obtaining this opportunity for obtaining a job a membership of the information society, even at the very local level is critical. However, these imperatives are being proliferated from a central point, based on an external notion of modernity, entering the community.

Like discussed earlier this raises questions about how this notion of the modern South Africa is having impact on the local modernity and how does this single notion of modernity impact the local, also when the community is being prescribed as being *under resourced* in terms of information and communication technologies, leaving it even further behind, the rest of the country. In this way, the construction of the community as an IT-under resourced area in terms of infrastructure and skill set, is adding an additional pressure on these locations and individual participants, compared to other more resourced areas, of falling behind. The political priority seems to add to this pressure, and also potentially not giving the local communities the opportunity, to define how they want this ICT integration to take place, as the strong discourses do not in themselves allow space for questioning the issues about relevance. Even less, the standardised practices and notions of the global information society, entails a number of established axioms locking the community in a specific role and the role of ICTs as having specific outcomes.

3.3 Summery

The visions and imagination of globalisation outlined in documents issued by the South African government, shows that the village or in this context, *the community* plays an important role for describing people coming together, and rural areas are finally being included and even plays a crucial role in the visions of the African renaissance as a response to *globalisation*. Similarly the focus on poverty, appears a uniting the continent and seen as the main target to fight, in order to create a unity. These visions of Africa is a scale construction that requires *communities* in the picture of the traditional village and combined with the ideals of prosperity, democracy and freedom. Humanities seems to be reformulated in these visions, as a value everybody is entitled to; similarly, humanity entails the right for prosperity as logically opposed to poverty and in this way information and communication technologies plays a part of the freedom ideal, since these are held to empower the communities. However, the conceptualisation of *community* remains very homogenous; it appears as if *Community* entails: being rural, being poor and most of all being under developed. An imperative is outlined that these places need to become a part of the African renaissance. The consequence of this discourse is, that a particular role is assigned to these, otherwise heterogeneous entities. But the role tailored in discourse fits very well into the visions of a global Africa.

4. Intentionality and interactions in the socio-technical landscapes.

After portraying the externally construction of the community as a symbol I would like to take a closer look at the element of *interest*: In this section interest is also understood as the intentionality behind the acquisition of information and communication technologies, what its position in this socio-technical landscape, which includes both human and non-human actors in a mutual interaction [Tsing 2005]. This section is aiming to understand the role of the non-human actors in the formulation of globalist strategies in a community. Rather than adopting a notion that technology is diffusing then the aim here is to understand how the *interest* and the creation of interest among the various actors works to obtain specific agendas [see e.g. Latour 1987 pp. 104]. It is argued that the various contexts can be regarded as *communities of practice*, where the official imperatives of the need to be connected are sought to be conveyed to the communities, in most case via locally based, committed individuals (often dubbed community champions), who however have a big responsibility to *reconstruct* a homogenous image of their communities as a commune. Similarly the community champions act as a *boundary object* linking government globalist discourse with a pragmatic everyday in their local communities. It is argued that the process of persuading/convincing the local population about the benefit of government ICT initiatives is crucial for the naturalisation of these objects in contexts other than those of creation, and the fulfilment of own political agendas. In this way, the community champions can be argued to, to a certain extent, be agents for globalisation, bringing the government formulated imperative of globalisation to the community.

4.1 Social Actors in the Field.

As previously accounted for, then the empirical research gave the opportunity to meet various actors with an interest in promoting the use of information and communication technologies in the disadvantaged and communities. In order to examine the role of these actors later this paragraph is to introduce each of these social actors, according to demonstrate their role in the field. Based on data collection following actors were located:

The Government: As accounted for in the last section, the South African government works as the primary producer of globalist discourse and the strong promotion of the use of modern technologies [see e.g. <http://www.pnc.gov.za/>]. From government side policies and documents are being worked out, in order to promote a particular notion of *globalisation* specific view of globalisation and subsequently outlining actions and policies for pursuing these goals.

The Para Statel: A semi-private company, usually founded and partly owned by the government. These companies have an obligation to work according to government issued policies [<http://www.csir.co.za>] and as a part of this status also obligated to make government initiatives become reality. In this case, a Pretoria based para statel was visited, which is a research based manufacturer of technology and currently involved in, among many other projects, involved in the installation of information and communication technologies in various, disadvantaged communities through out South Africa, in order to materialise and realise the political ambitions of proliferating the use of information and communication technologies in the perceived Third World areas. They are the active part of government policies working in the areas and as shown later, those who are involved in the communication with members of the communities. As a technology company acting on the behalf of the government they are responsible for enacting policies by the South African government.

The Community Champion: Broadly refers to committed individuals that are based in the community and acknowledged by government and para statel as community representatives. As a part of the field research a visit was made to a township, where a meeting with two idealistic young people, who were enthusiastically committed to work *for* their local community integrating computer education, partly through paid courses and courses free of charge offered to local schools and teachers. They had both been active in the local Multi Purpose Community Centre, but due to the disappointment about organisational disputes that were leaving the entire computer section unused, they had decided to start a small business on their own. They both indicated a strong commitment to the local community and because of this decided to stay in the area, al though the nearby city would offer better conditions for running a commercial business, yet based on an idealism of serving the community.. Other examples of Community Champions could be people in formal position e.g. mayors or other municipal representatives and also Liberians [see Appendix 6].

The Population: In this section ‘the population’ refers to common members of the community, both those who intentionally are involving themselves into an ICT related practice (computer education, common use of ICT facilities etc.) and those who are not involved in any of such practices. However, as the empirical material is based on interviews with mainly participants in computer classes (adults and children) the actors in this group are involved in ICT related practices. Also, ‘the population’ refers to a group of individuals, whose identity as a commune is being defined by other parties as being the *community*, but here underlined that these are heterogeneous actors and as such not anticipated to necessarily defining themselves as belonging to a community, as defined by external parties..

4.2 Actors, interest and trajectories – reasons for action.

Interest is not anticipated as a semiotic unit that should be understood as a statically present, but rather interest here should be understood as dynamically occurring through the interactions among the various actors, social and non human alike and therefore should be understood as such. When looking at the process of advocating for the installation of information and communication technologies *interest* occurs as a facilitating factor for convincing the various parties about the necessity for acquiring technology, rather it should be regarded as a conditional factor for action. *Interest* here, refers to the consequence and intentionality, which arises through the reaching of consensus, formation of alliances, translation and as mean for use in the process of creating alliance. For this, this section aims similarly at examining the reasons for the movement of technologies, rather than adopting a notion of globalisation and ICT, as being autonomous and automatically diffusing, without the necessary involvement of intentionality, but merely a part of modern technological advancement [Latour 1987 pp. 104]. As all actors, including the non-humans, each have their own agendas and trajectories it is important these are being uncovered, in order to see how these are moving in their practical context subsequently forming a direction of advancement allowing only specific notions and ideas to be articulated [Leigh-Star 1991 p. 29 and Escobar].

Category	Actor	Data	Comments
Interest			
	Para Statel	probably people got interested of some people who got interested and ehmm the department of science and technology was also very _happy_ with the result. they suddently got _funds_ to _go_ out <??>	External actor needs to generate interest to recreate interest among other external actors
	Community Champion	We are running out of budget Only students Welcome funders	Community Based actor needs to generate attention in order to get funding from external actor
	Learners	<i>Getting a certificate</i>	Individual interest in improving living conditions

Fig.3 Attention and interest among stake holders.

4.2.1 Actor interactions.

The effort of connecting and digitising the disadvantaged communities in South Africa is basically drawing on two strategies, either through the establishment of centres in the local areas (such as the Multi Purpose Community Centres, Tele Centres etc.) or as free standing terminals located at publicly accessible locations e.g. libraries post offices etc. [Snyman 2003], anticipating that the physical location of technology would automatically lead to the expected socio-economic improvements, yet these many of these initiatives have often proved unsuccessful [Snyman 2003 & Maepa 2003]. Ongoing research by academics is being carried out, in order to clarify *why* so many attempts to naturalise information and communication technologies in local settings seem to be failing [see e.g. Maepa]. For this reason there is an interest in developing a model for connecting the communities through technology, consequently many initiatives are have the resulting in introducing technology in the shape as *projects* and this reflects an idea of technology, as a matter of introducing ICTs to these communities in the shape as *projects* [ref. Tsing], which in this context should be understood as a practice, that is not based on a standardises involving an established practice with a certain duration of time, and therefore involves *research* in order to find the best models and best practices for implementing these technologies. In this way, people (researchers, engineers, NGOs etc.) externally located of the community are involved in conducting and acting as a part of these projects [see e.g.

http://sangonet.org.za/portal/index.php?option=com_content&task=section&id=45&Itemid=230].

However, when looking at the process of initiating these projects in the localities, the community champion appeared as being the part most frequently taking the initiative to communicate with these external parties, in order to have these resources located in their local community, for the benefit of its inhabitants. As illustrated in the scheme below the community champion is acting on the behalf of the locality and in this way becomes a link between the community and organisations that act according to government discourse (NGOs, para-statels etc.), as illustrated:

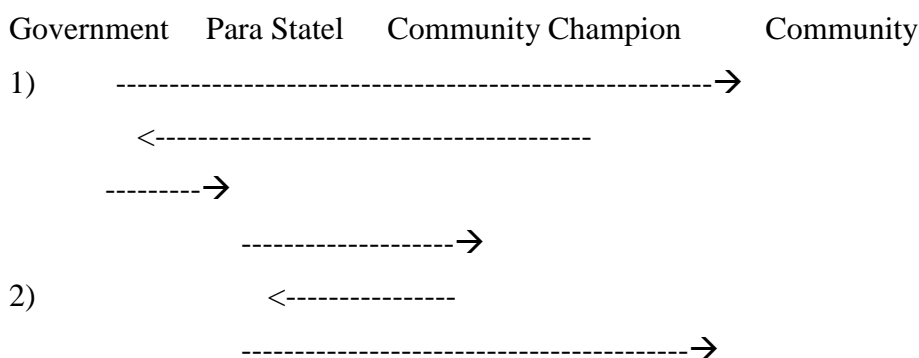


Fig. 5 Initial contact and interactions

In the first case a government official visits a community, and community champion subsequently asks government for resources for the community. The government directs this request to a technology constructing para statel, which then initiate a communication with the community champion. In scenario number 2, the community champion directs a request to a para statel, which then initiate a project for localising technology.

The project *usually* has a certain time of duration, where it is perceived as needed to become *sustainable* and be implemented in the local community [Maepa 2003]. However the dimension of *interest* among the actors appears, generally, to be very high at first and then with a period of time, being rapidly decreasing among the various stakeholders eventually leading to a process of negative feedback cycle. When conducting telephone interviews conducted with Multi Purpose Community Centres there was a confirmation that the centres were experiencing a lot of interest and attention from government and local population about this project only to experience this interest fading over time. This trend is also confirmed by research done by researchers particularly focusing on telecentres. [Maepa 2003, Snyman 2003, Kanungo 2003]. Put into a scheme the interest aspect looks like this:

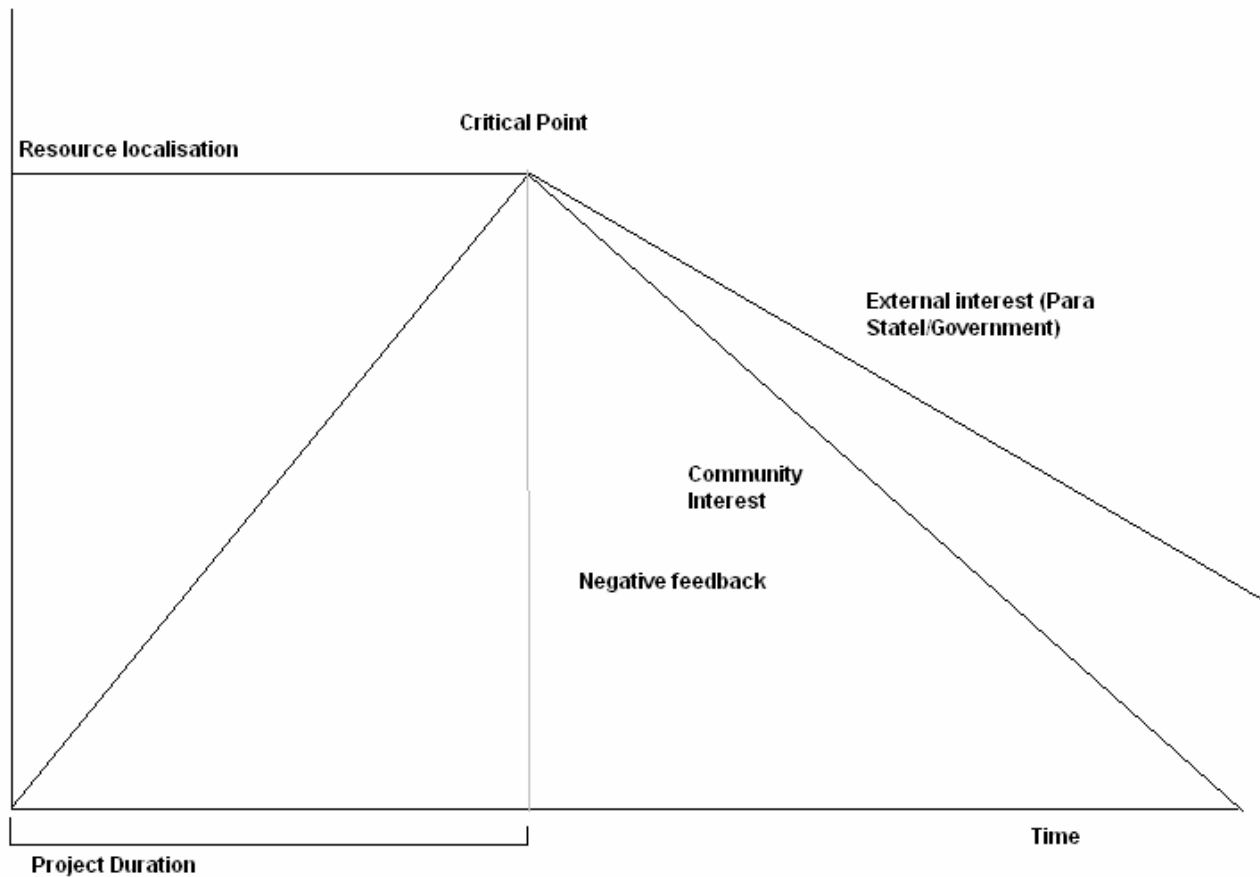


Fig. 6 Interest process.

Initiating the process of introducing technology into the communities the community champion appeared as being the part most frequently taking the initiative to create attention and interest, in order to have resources transferred to their local community. As illustrated in the scheme below the process of naturalising technology in the community is going via two stages:

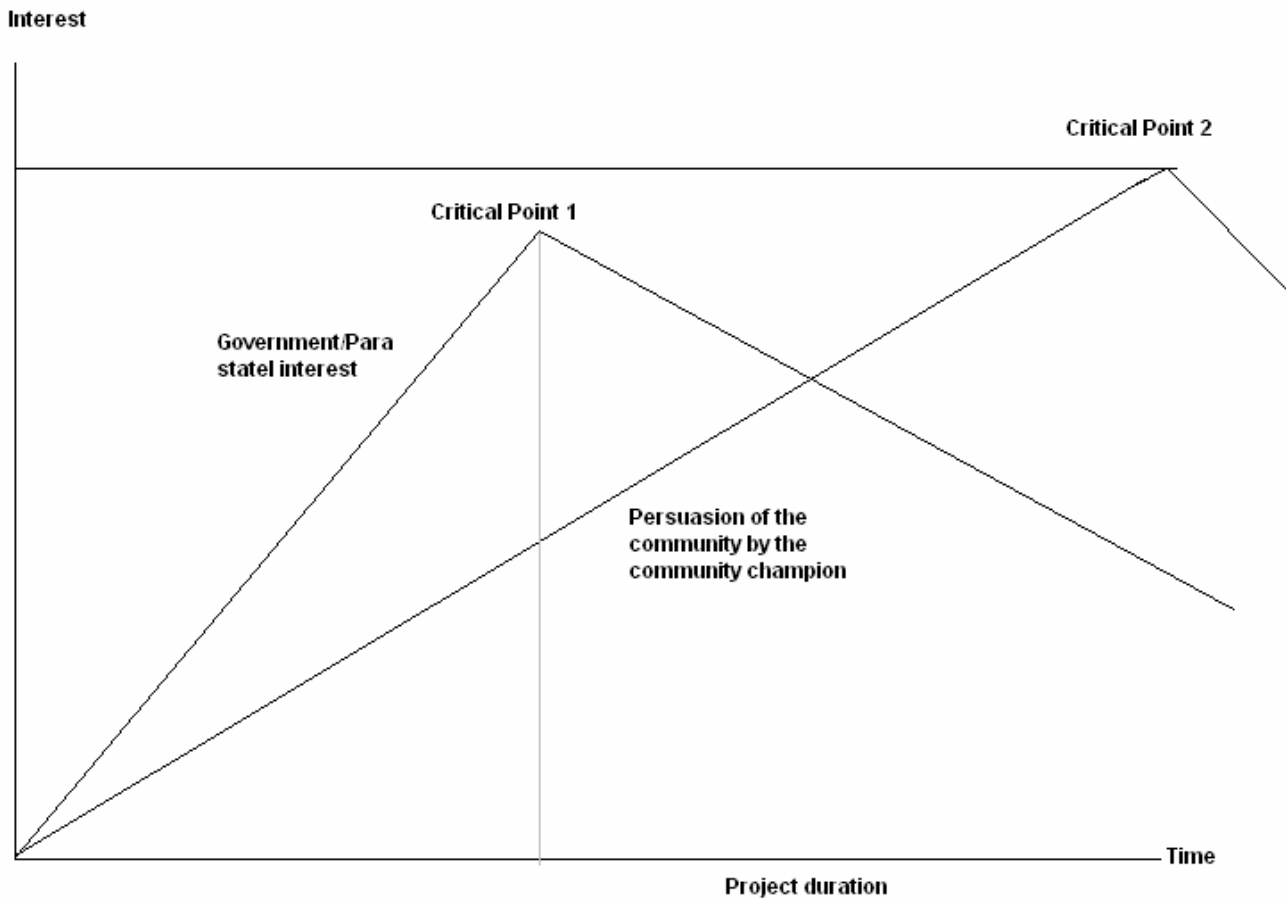


Fig. 7 Interest and Critical Points.

Critical point 1: The technological artefact is being physically located in the community and from that point it is anticipated that the initial criterions of success has been reached, since a resource has now been located in the community and through its physical position, now is able to function as a modern facility. From the community (community champion) point of view a resource has now been provided offering *new* opportunities for changing a difficult life. From an external point of view the first critical point involves the physical localisation of the technology in the local community. Through its physical representation and location it represents a fulfilment of political goals of getting resources becoming modernised and giving the area the possibility to *connect*. The aim of the community champion is fulfilled since the community get political attention and a resource installed in the community.

Critical point 2: This refers to the social integration or naturalisation of technology in the community, where there is a sense of *community ownership* i.e. the practices of a technological installation has been integrated into the practice in the local area and widely used and appreciated by the community. The perceived (but not necessarily the physical ownership) ownership of these projects has to be transferred to the community, in order to get to what is termed as Critical Point 2.

If this is not obtained then a negative feedback loop emerges leading to a decline by interest and motivation by all parties (negative feedback cycle). A negative consequence of these However, indications show that in case these *projects* are not becoming integrated in the community then interest seems to decline by all parties; external (government based) and locally based. As shown in the diagram this is outlined as the *project duration*, during which the community has to be convinced of the needs and benefits of information and communication technologies. Therefore the perceived (but not necessarily the physical ownership) ownership of these projects has to be transferred to the community, in order to get to what is termed as Critical Point 2. If this is not obtained then a negative feedback loop emerges leading to a decline by interest and motivation by all parties.

Indications show that there is an element of *interest* and *attention* involved among the parties. It appears that in order to become targeted for initiating this process, the initial initiative should be taken in the communities.

Firstly, The process of convincing a specific community needs requires a representative to communicate with external parties, i.e. the role that the community champion holds as someone, who speaks both the language of the community and understand how to translate the visions of the government to fit into a local pragmatic everyday, mostly the committed person (often termed community champion) to create this kind of interest for the under prioritised area, mainly by referring to the need of becoming educated and acquiring new methods of alleviating problems faced by the community, such as a high unemployment rate, crime, poverty etc.

The argument also revolves around the access to resources that being *excluded* would worsen these social problems even further. In this sense the arguments from the initiators, as a resource based in a local community would through the discourse of the information society translate a stagnation into a continuing disintegration (Resources disappearing, increased poverty etc.), in order to enter the pursuit of becoming developed and included.

In the eyes of these individuals, being targeted for development through the transfer of ICTs means a lot more than just better opportunities for education, but also a general *prioritising* of the local area, that may mean more than just the new physical units (Computers, buildings etc.).

Getting a *licence* or *certificate* is regarded as necessary for ensuring employment, and as such materialising an externally defined standard of the information society. In this way the understanding of necessity of acquiring standards according to the external society resembles the need for becoming a part of a structured learning is necessary in order to get beyond the local community.

4.3 The Community Champion as a boundary object.

As argued the *community champion* is based in the community, recognised regarded by external parties for the particular role of linking the local community to an external and to other actors. As shown, they equally often initiate communication with actors externally of the community with the intention for starting a process, which in their notion would benefit their local areas:

An engineer at a para statel company confirms, by referring to an anecdote about a Liberian in a rural village [see Appendix 6]

Integrating information and communication technologies and ensuring the success through the completion of the process between the two *critical points* (location and community ownership) places the Community Champion in a key role, somewhere between the community inhabitants and the external actors, such as NGOs, para-statels and government institutions. In the process towards ensuring and creating a common social practice around the acquired technology the community champion is responsible for persuading and convincing the local inhabitants about the beneficial effects of the technology and in particular the importance of acquiring these new practices associated with the technology use. Examining the role of the community champion is from a socio-technical point of view interesting, as it occupies a stand somewhere in between several *communities of practice*, namely that of a local pragmatic reality and that of technological globalisation discourse; the role of the community actor as a *special actor* is here regarded as a *boundary object* [Bowker et al 2000 p. 16]. The community champion is a member in the local community, yet through its recognition by official authorities equally a member of a community and a notion, which is a part of the rhetoric and discourse part of the globalism discourse promoted by the South African government, as a response to their understanding of globality and the subsequent means for meeting these challenges. In this role the community champion has to acquire and use the discourse from both and equally be able to *translate* the official discourse into something which is comprehensible in the community and equally be able to talk on the behalf of the community. In this sense the point for examination is how the community champion manages to work as a *boundary objects* and what symbols and representations, which are being passed through the infrastructure the community champion is seeking to create in order to facilitate the passing of symbols, objects (e.g. technology) for the eventual naturalisation of these in another context, than the one of creation for the successful naturalisation [Bowker et al. 2000 p. 299]. Point of focus here is what symbols the community champion is seeking to pass and by what means, in order to change the practice and obtain what is here referred to critical point 2 or community ownership. Yet the community champion is still an actor, with a trajectory like the other actors involved in this process [Leigh-star 1991] in a dynamic role between *communities of practice* with the potential risk of being rejected by both being more of a member of another context (e.g. the community champion unable to establish communication and relevance within the community) and themselves risking to

become monster [Bowker, p. 299]. Introduction and naturalisation of information and communication technologies equally entail a *translation* of symbols, objects and the pre-scribed meaning to artefacts. In this way the process of persuasion by the community champion is a part of the process for naturalisation. Therefore gaining the support of the community is crucial As Moet Laet et al. [2000] point out, then the community is also constituted by the technology and the community is required to run the technology.

In case of Thembalethu preconditional knowledge, the informal knowledge of the opportunities of technology was playing an important role, in order to promote the motivation and interest among the locals. As previously stated the preconditional knowledge has two aspects: either promoting the informal opportunities of ICT, such as communication between friends, entertainment, shopping etc. and/or emphasise the need for acquiring IT skills for obtaining a better employment situation.

Category	Actor	Data	Comments
Interest	Community Champion	So I think that's also one of the challenges we are facing from the other side of the communities, because they're not like to come to our programmes and things like that, because they feel 'no <?> they started initiative in Thembalethu or in this area, so it's just for gatherings or that amount of people, not for our people'. That is the mindset, that our people are currently having, and that is also..ehmm.. they didn't mind their involvement in projects and things like that.	Interest in social structural change

Fig. 8 Community Champion and Interest

For the champions themselves the transfer of resources to the community is also a matter of political *independence* through the new opportunities of becoming educated locally and the opportunity to establish own business.

When the community has entered this phase of development through the interest obtained from a centrally based authority, there is a need for strengthening and maintaining this interest. In order to ensure the continuous flow of resources, the community needs to remain interesting over a longer duration of time, either through a successful display of positive changes in socio-economic conditions or the completion of the process of becoming an information society, which entails IT-literate inhabitants with improved socio-economic conditions. The kind of *interest* has to be sustained in a positive feedback loop, resulting in community and ICT, becoming self sustaining.

However, if this process is not obtained, then the development project enters a negative feedback process, where interest and commitment is gradually going down. The resource transfer seems to have a temporal dimension, where *success* is achieved when the centrally located resources remain (sustained locally) in the local area, and the community no longer require this transfer from external parties. If success is achieved then resources are transferred and project goes from being an element with a particular dimension of time, to become permanent in its locality. This process once again is determined by the condition of community interest, which, in case it remains low does not lead to success. The conditional *community interest* seems to be an important element conditioned by the *community champion's* ability to fulfil the pre-conditional promises of *change* and development, which generally is the prospect of employment.

For the *community champion* it is a matter of overcoming perceptions of exclusion and making the entire community see the benefits of ICT, as not just a benefit for the individual, but also for the community as a *commune*, in order to facilitate the process leading to Critical point 2.

For the interested parties in the communities, however, the new opportunities of transferred local ICT means a prospect for employment. Employment is ensured through the acquisition of structured instruction, and through this a standard way of learning of ICT. An example of this was when participants of a computer class emphasised that their attendance was because they wanted to improve their employment opportunities, through obtaining better employment opportunities through attending a computer course.

4.4 Summery

The movement of artefacts does not happen all by it self, without a reason or intentionality behind, but the issue of *interest* appear as being very important in this context; the interaction among stakeholders are in this context important to look at, as an alternative to a model to diffusion that assumes the spreading of technology as a natural thing, just as technology transfer within a political discourse is assumed unproblematic thing, with the apparent presence of other entities that the technology producer and the receiver. This section is addressing the notion of employment of ICTs as being other than unproblematic. The Community Champion plays an important role in this process, in the role as a boundary object, somewhere between the bright visions of globalisation outlined by government entities and the representation of own local community. The implementation of technology is a process that entails two critical points, one point where the physical installation of the technology is ensured in the local community, for the acquisition of the opportunities of globalisation and the second, where the community is convinced of the benefit of information and communication technologies. As outlined, the community champions uses the same discourse as government entities, but are acting for quite other reasons, than those outlined by government for ensuring the seize of the opportunities of globalism. In this context it is interesting

to see how the two entities are creating an alliance, yet act for different reasons; further investigations could give a better understanding of this interaction. Moreover, questions relating to representation could be asked as well: Is the *community champion* successful in discursively promoting the construction of the *community* as a social homogenous unit towards government entities and towards the community members? The role of the community champion and its delegated role as the one to embed these heterogeneous communities as homogenous units into the envisioned global knowledge society is interesting, since it entails a *doubleness* between *doing something* for the local community and equally being pointed out as those who are to *connect* the communities to the rest of the world.

5. Knowledge – Global Enlightenment for the Future.

5.1 The need for informational enlightenment.

Being global entails connecting to a larger context and this process is associated with a movement towards a higher state of *enlightenment*, where people through the connection to the global information society will be educated to solve their own social problems [Tsing 2005 p.81 & World Bank Knowledge for Development <http://www.worldbank.org>]. A general perception of 'knowledge' as travelling around the globe is seen as an important part of the futurist visions for connecting to a larger context through a process that entails enlightenment; the new knowledge is anticipated to make the dreams and visions of the *new order* come true [Tsing 2000 p. 81]. The world united through knowledge with information and communication technologies as the connecting infrastructure, is generally perceived as a part of an emerging global knowledge society [see e.g. Castells 1996 and Audehove 1999].

This notion is equally evident in the efforts for implementing information and communication technologies in South Africa, both as a means for strengthening the ties to the global context, but also at the national level as a means of creating and sustaining a the 'new' post-apartheid South Africa [DACST, 2001]. The emphasis of supporting democracy is also an emphasis on the need for enlightenment, creating a new society; where citizens, in particular those in the so-called disadvantaged areas have information available for making 'informed choices' [DACST 1996]. Consequently the enlightenment ideal through e.g. through education and availability of information has become an *imperative* [Mbeki, 1995], bringing technology and democracy together.. For this purpose information and communication technologies are playing a vital role, e.g. President Mbeki has states that:

"The modern communication technology ... must help us educate our children, particularly in the rural and other underdeveloped areas" [South African President Thabo Mbeki quoted in Snyman 2003]

In this way 'Knowledge' is emphasised and perceived as being acquired or facilitated acquisition through the presence of technologies.

People in under resourced areas *need* to be able to learn new skills, either as a general education about the society (democracy, information about agriculture, HIV/AIDS etc.) or science (understanding and appreciation of technology) [National R&D Strategy p. 3]. More importantly, education is regarded as a necessity for being able to do well in the knowledge society, in most cases being able to use computer technology. The acquisition of 'IT-skills' leads to employment and *better* opportunities for improving life [Mangena, 1996]. It is perceived a generally accepted notion

that the knowledge society no longer needs craft skills, rather it requires the knowledge to produce knowledge is no longer requires craft skills, rather there is a higher demand for educated people, who can actively take part in the *emerging* information society. This *new* kind of need for enlightenment involves being able to take advantage of the new opportunities of the knowledge society and consequently requires *education*. There is a sense of futurism in the ideal of being able to acquire knowledge, and be able to act beyond a locality. A stereotypical past is through this being established, as a time where people were ignorant and relied on folk knowledge, going towards a future, where people are educated according to a global standards, acquiring knowledge and education for solving previously unsolved problems [Tsing 2000].

The strong emphasis on knowledge, as being crucial in the process of promoting enlightenment and democracy in the disadvantaged areas is linking the physical non-human actor (ICT) together with the quest for humans to obtain *knowledge*. It is this area which sought to be explored in this section, through focusing on how knowledge is *functioning* in its context and discuss the consequences of the *a priori* link with the physical artefact. In this section following key questions are asked: *What is knowledge? How does it work in the process of the acquisition of technologies? And what is the consequence of the notion of the close connection between knowledge and the artefact?*

5.2 Knowledge and the Localisation of ICT

As argued in chapter 3 the notion of globalisation is primarily based on a perspective which is anticipating and interpreting globalisation as being an economical matter (globalism according to Beck) and as argued the consequence of this view entails that the challenges of globalisation faced by South Africa is being interpreted as being primarily a matter of ensuring economic prosperity in the disadvantaged areas [Mbeki 2001c]. Combined with the anticipation of a widening Digital Divide, where the evaluation of the status of the information society is based on an anticipated divide between those who are in possession of technology and those who are not, the *knowledge* aspect is logically linked to the artefact, a disadvantaged setting where the material artefact is not present is in this sense regarded as being under resourced. As argued in the chapter 4 the presence of an artefact in the local setting then constitutes a *critical point* i.e. when the technology has been physically located.

This kind of educational imperative is more closely related to the notion, based in the post industrial society, about the necessity of knowing how to *use the machine*. It is perceived that acquiring these skills through a certified standardises is giving the ability to be included in the information society [Wellman et al. 2003].

5.2.1 ICT as an Industrial Machine.

This perception in particular can be argued to be largely based in the axiom logic of industrial modernity, where the education teaches the community members to be a part of the production in the society, contributing to the prosperity of the country, qua the understanding of economic globalism and Castells [1996] notion of the information economy. Knowing these machines and perceived as improving chances for jobs and through this improving existing living conditions, consequently forming an imperative for getting to *know about computers*.

5.2.2 ICT as Communicator.

Another imperative for acquiring computer technology is linked to the media capabilities of conveying information and education. The artefact equipped with software is held to be a valuable resource for teaching skills. The emphasis is on content, providing users with knowledge either within an institutional setting or outside, directly approached by the users, who through this obtain crucial information and learn new skills, therefore the need to have these artefacts in under resourced areas is being emphasised. The Enlightenment ideal is present in this position. The emphasis is on *education* and *information* [Banerjee 2000 p. 710]

Despite the vital importance of knowledge, however, *knowledge* remains rather undefined and does not specify what kind of knowledge and whether Knowledge is framed understood and conceptualised the same way among the participants, who are supposed to be enlightened. Moreover, the role of knowledge remains rather unclear and does not give an idea about how knowledge works in its ontological setting.[Andersen, 1999 p. 28] Only that here is a presumption, that population in disadvantaged areas need to *have knowledge* in order to be an active part of globalisation. But the question is, do the various actors speak about and conceptualise knowledge in the same way?

5.3 Knowledge for the 0 knowledge zones

5.3.1 Poverty in the 0-knowledge Zones

Many people think of poverty as simply a lack of income. Others extend the concept to lack of education and health facilities. However, as highlighted in the 2000 World Development Report, Attacking Poverty, economists like Nobel prize-winner Amartya Sen now emphasize a much broader approach. Poverty is also

* *lack of voice: people need avenues to express their needs or obtain redress.*

* *lack of empowerment; people need the resources and authority to take charge of programs meant for their benefit.*

* *lack of good governance: people are worse off when officials are corrupt, unresponsive to local demands, and unaccountable.*

[vice president of World Bank www.worldbank.org]

Within the establishment of the knowledge society, the physicality of ICTs has an impact on the less definable ‘knowledge’ which is assumed as being closely related to the presence of technology.

It is assumed that the presence of ICTs would ensure *connection* and *information* enabling the populations in the disadvantaged districts to finally be able to making informed basis. The proliferation of knowledge is vital in this process and resembles other dichotomies.

However, the link between knowledge and artefacts outlines a dichotomy that necessarily and consequently construct targeted locations as places that are yet to become educated, here referred to as 0-knowledge zones.

Knowledge is interacting and a part of multiple aspects in the visions of the knowledge society; it appears as a symbol and as an object, that rather appears as an expression than as concrete entity [Audehove 1999] It also appears as being rather undefined, not answering questions about *what* knowledge is about, other than the aspect of enlightenment and newness attached to it. Rather than discussing the pros and cons about promoting knowledge, it would be a lot more useful to approach this, as an object and a symbol, which is being passed, used and redefined.

Knowledge is having a function, in vast range of ways, in the context of the information society and the attempts of creating one such. It also means that Knowledge, al though extensively referred to in the discourse of ICTs consists of various and very different types of Knowledge and is being used with different references and trajectory [Latour 1987]. It occupies various roles and functions at various times, and it is this complexity I would like to portrait and take a closer look at in this section through its *functionality*.

5.3.2 Actors and stakeholders – role and conceptualisation of knowledge.

Looking at the various documents, speeches and other material outlining the visions and policies, interviewing a para statel, interviewing people based in the communities shows that the there is a different conception of knowledge and that there is an impact on the conception of knowledge through dichotomy understanding of the possession of technologies. It is also a matter of perspective and angle of vision. As I had the opportunity to meet and interview people in various

positions to the field this sections takes it point in these various positions, in order to illustrate the various conceptions and alliances of with *knowledge*:. It comes in various degrees and types, but is often only being defined as the necessity for education towards participation in the Knowledge economy production. There is a general notion that education has to be promoted in order to facilitate this transition to the information society and for the continuing effort of having the population included in the globalisation. Yet, going just a bit deeper, knowledge tends to take various forms and meanings depending on who is pronouncing the *need* for knowledge. Analytically, there is need for a distinction between the different *types* of *knowledge*, in order to examine its role in the field through its definition by the various actors.

5.4 Types of knowledge

Particularly emphasised by the para statel technology company people should have exposure to technology and need to acquire the needed practices and skills. Therefore it is anticipated that there is a need for *exposure* to technology in these areas and *knowledge* lies within the practical use of technology. The parastatel is the engineering entity and it works for the South African government, in order to supply and install these technological artefacts in the localities of the disadvantaged areas. Established as *communities* that do not have the resources for acquiring information and communication technologies, these communities are regarded as being *detached* from the rest of the world. In these 0 – knowledge zones, knowledge has to be of the technology, as a necessary pre condition for being able to acquire *education*. People need exposure to this technology and need to get to know it. There is a need for exposure in these areas and *knowledge* lies within the use of technology.

1834 r *The only difference we saw is in <?respect> of gender the learning patterns and the way people interact with the machines is the same. Ehmm we haven't completed the second of the other rural areas, but that was the one difference that we saw. You can probably say that in an urban area, where people have a more.. there's a mixture of exposure technology.*

1834 r *The only difference we saw is in <?respect> of gender the learning patterns and the way people interact with the machines is the same. Ehmm we haven't completed the second of the other rural areas, but that was the one difference that we saw. You can probably say that in an urban area, where people have a more.. there's a mixture of exposure technology. There is a very good chance that nobody had any exposure to technology before <?>, whereas in urban areas there's a mix in terms of having had exposure or not, so you also have a mix of.. [cell phone rings]. And also what I saw in some of the rural areas there's a lot more <?middelaged > that use the machine, whereas in mamelodi we haven't seen any, which is interesting. We would <?like to >, there is one of the professors at UP [University of Pretoria], which is currently looking at gender*

work and she is very interested to actually look at that. So that's one of our future topics.

In this piece, the link between learning and the use of information and communication technologies is already established as a part of observations.

And the only reason this library exists is because he's looking for grant <?he's been all over the world?> and he asked us is there's _any_ way in which we could put up a couple of computers up in this community there's about <25?> people living together and they have never seen a computer before. So we installed two weeks ago and he called back and he says 'the community is not sleeping' everybody there, the library is usually open from 10 in the morning to 6 at night, but at the moment it is open from 7 in the morning to whenever they are closing. He says that when he gets there the kids are hanging on the gate to get in and they're using drawing program ehmm reading there is one application on it that can do videoediting. One of the kids actually found that, is not something that's obvious on the desktop, he actually dug into mandrake and found it. Joa, so he says, he reckons by the end of the year 15000 people would have used the machine, so that gives you some idea. Some of the sites work better than than others and that's one of the things we wanna do this year is to look a bit more at, what you're also speaking about, the social aspects. What happens if you put technology <practice ?> in the community and why does it work and why doesn't it work; we think it has a lot to do with where in the community you put it and how easy it is to get to it. But the results are actually amazing, we had an installation in kayelitsha. We were barely finished, I mean we were still screwing the thing to the ground and there was about 45 kids all trying to look on this, so ja.

Once again Two types of knowledge emerges: Knowledge relating directly to the use of information and communication technologies i.e. The skill based learning of how to make use of ICTs and then knowledge as obtained from ICTs, for an educational purpose. The skilled based learning of the practices of ICT, however, is the primary focus, since this is regarded as a primary precondition for obtaining learning through software. In this way, know represent an entity that comes to the communities, and is not already present there. The logical consequence of this anticipation is that the artefact by external stakeholders is anticipated the only means of proliferating information and that is the *right* kind of knowledge and that is requires an artefact, the kind that relates to science and technology. This emphasises the link between poverty, as lack of resources and what is in development discourse termed as *information poverty*. It is widely

anticipated, that the use of information and communication technologies are supposed to have this role, as agents for facilitating the knowledge aspect for educating the part of the population residing in the *communities* to make these so called *informed choices*, through the connection with the ‘centres’ [Mbeki, 2001a]. In this way, the materiality of the artefact becomes a necessary pre condition to ensure that it is possible to ensure the presence of ‘knowledge’ and connection. In the vision of the knowledge society, information and communication technologies are central in the visions of the knowledge society, and through this outlining a dichotomy and logic, where technology as semiotic objects through their physicality can be either present or absent in a specific location. This technical approach to knowledge outlines a very clear dichotomy, which is easy to see and grasp through its visibility and as a rhetorically easy to convey.

5.5 The role of knowledge.

As indicated above the definition of *knowledge*, very much depends on the *location* of the artefact and through this can be argued to be revolving around the presence or absence of the connecting artefact. With the emphasis by the various actors on the need for the presence of an artefact examinations showed that there were indication that there could be located at least three ‘kinds’ of knowledge, that were generally regarded in as qualitative evolving, depending on the position of the artefact in the location. Which also indicated that even technical knowledge away from the artefact was not represented in the official discourses, yet had a role as a facilitating factor in the process of persuading the community.

Basing the examination along a line of *exposure* (as representing a dimension of an emphasised need for a technological awareness) the observations can be summed up as follows:

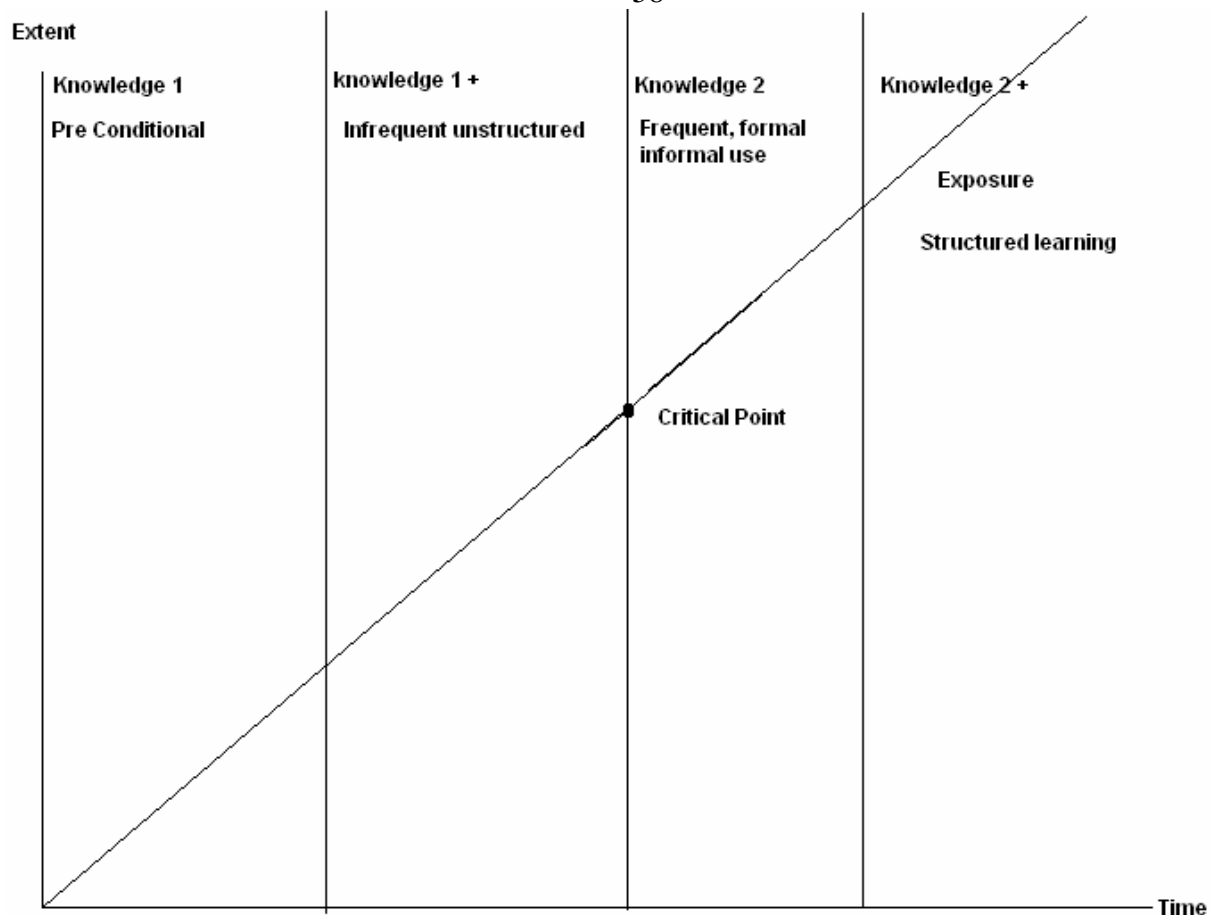


Fig. 9 Knowledge and exposure.

What I would particularly like to focus at, is knowledge located *before* reaching the critical point CP, where as accounted for, the perceived situation changes, a resource is now located in its locality, the community has been succesfull in fulfilling the trajectory of attracting a resource to the community and can now commence the process of creating the community around the aquired resource. Returning to the notion of the 0-knowledge zones, then it is at this logically not anticipated that the *right* kind of knowledge (associated with the use of ICT and the specific practices of global information society) is absent, through the absence of the non-human actor of ICT.

Looking at knowledge along the axis of exposure, at least three *kinds* of knowledge are emerging both before and after the *critical point*. This first kind of knowledge that emerges is here termed knowledge1:

Knowledge 1:

This kind of knowledge is informal and unstructured, is not considered as *real* yet it turns out to be useful in the process of making the local community aware of the new opportunities offered by the technology. It is being conveyed either by social peer network narratives or broadcasting ICTs. This type of knowledge does not necessarily imply a direct praxis of computer media, but an awareness of the imperative of 'learning about computers' and as such also at this stage conveys the imperatives of the information society, both as beneficial opportunities and as an important means of growth.

On my visit to Thembaletu township it was evident that the promoted view of the *disadvantaged* community as being 0-knowledge and through this disconnected with the context of the information society is problematic. Conducting several interviews with school pupils and adult learners gave me a good impression that the knowledge (here understood as technical was present) in both groups: Interviews were simple questions asked to the class about opinions on information and communication technologies and the practices associated with these practices, in order to examine how they would be connecting to ICT practices, at a location, where these practices were not immediately supported (The local community centre had by the time of the visit computer facilities that were unused due to organisational disputes) and therefore would mean a longer trip to the nearby city. This would mean that it would be very difficult for the youngsters in the area to get to use facilities like chat, e-mail etc. An interview with a group of adult learners showed that despite the fact that no one in the group were actually in daily contact with ICT use and were not potentially likely to achieve a position where the acquired skills would be directly useful, they were still attending a course for upgrading their skills and opportunities at the working market.

In case of the public school class the teacher appeared as being the one to convey an awareness of opportunities relating to ICT use to the children.

The second type of knowledge about ICTs is unstructured, formal/informal. In these cases practical experience with computers is present, often as an informal, non-instructed manner, mainly as play and experimenting. This is the next part along the line of exposure, where the actors use of technology becomes more frequent, yet without having an artefact located in the community, rather knowledge 2 entails the movement of people and artefacts whose acquisition of knowledge of computers and computer is unstructured and for this reason falls before the critical point, since the community around the acquired technology does not have the possibility for establishing it self, leaving out the aspects of the idealism around doing something for the community. The so-called IT literacy is found in this section, knowledge about computers provided to individuals, but nothing that involves the commune. E.g. having the experience with cell phone technology appears as belonging to this group.

A **third kind** of knowledge is the structured, formal learning that aims at educating in specific methods of problem solving using ICTs. At this state instruction, standardises through educational institutions together with the computational artefact is present and problem solving is aimed at specific problems related to the information society. When the different kinds of knowledge are seen as process going from unstructured to structured – standard, the above mentioned imperatives seem to be more present, and amplified in the community. Like other physical educational materials this seems to entail that the artefact has to be present and localised in the community. In this way it is forming a *critical point* for when this structured learning can take place. Based on the emphasis on the visibility and physical dimensions of the artefact it is theorised that the presence of the artefact can be explained through its representation as a resource coming to the community fulfilling various political aims of prioritising and inclusion. Moreover, it is fulfilling an aim outlined by the contextual conditions outlined by the imperatives of the economic globalisation of have/have nots. In this way communities that are regarded as being economic third world areas are equally regarded as being 0-knowledge zones when it comes to the type of knowledge that relates to the practical use of information and communication technologies.

However, interestingly data indicated that in these zones that are regarded as developing in the information society view, I found that there is a lot of knowledge relating to ICTs that could be located outside a formal structured context, all though ICT was restricted to a formal context and other informal uses were not available beyond this context there was a high extent of knowledge about computer use, typically conveyed through media and peers. This kind of knowledge is located as Knowledge1 or pre-conditional knowledge (see fig. 9).

With the strong emphasis on the necessity of having technology located and present it can be argued that this **preconditional knowledge**, from this point of view is not represented is generally and consequently not being regarded as important when it comes to the promotion of IT-skills, as; this knowledge lies before the critical presence of the artefact. Without the artefact, the preconditional knowledge cannot be structured and as such create the foundations for the acquisition of 'IT-skills'. The preconditional knowledge is closely associated with an awareness of the **opportunities** of information and communication technologies (in this sense particularly internet connected computers), related to informal and not necessarily production related tasks, such as communication with friends, entertainment etc.

Also, preconditional knowledge is conveying the imperatives of the information society and the perceived disadvantages of not 'learning about computers'. Together with the **opportunities** and the conveyed imperatives, **preconditional knowledge** serves as a motivational factor in the process of

persuasion within the communities for accepting computer technology and subsequently facilitating the possibilities of getting resources to the communities.

Other than the motivational aspect of preconditional knowledge, there are indications that the preconditions for using computer technology are amplified, when there is a condition, where the intended users already have had experiences with information and communication technologies, but in the case where this is not on a regular basis, this still only counts as preconditional.

In this aspect it is interesting to see that the regular use of cell phones still only belongs to a preconditional phase, leading to the 'real' use of computational artefacts.

Therefore it is often regarded that there is a need for having people *exposed* to information and communication technologies. It is generally regarded that the more people already know about technology, the stronger the preconditions are for employing technology, since this is also about acquiring the imperatives associated with role of ICTs as a part of the perceived need for having South Africa involved in the economic globalisation. The better preconditions mean a stronger stand in the persuasion of the local community for adopting ICTs. Exposure entails a process going along all three types of knowledge, for obtaining a successful naturalisation of technology.

5.6 The consequence of information poverty.

Returning to the notion of the 0-knowledge zones, then the framing of *information poverty* as being in line with a general notion of economical poverty, then it is logically anticipated that getting knowledge to the disadvantaged districts is necessarily dependent on the physical presence of ICT for the integration of these areas in the global information society. Framing these issues this similarly entail and area can be *either* information poor *or* information rich depending on whether the community has *or* does not have information technology. It is widely anticipated, that the use of information and communication technologies are supposed to have this role, as agents for facilitating the knowledge aspect for educating the part of the population residing in the *communities* to make the so called *informed choices*, through the connection with the 'centres' Mbeki, 2001a]. With concepts *information poverty*, *digital divide etc.* like the materiality of the artefact becomes a necessary pre condition to ensure that it is possible to ensure the presence of 'knowledge' and connection. In the vision of the knowledge society, information and communication technologies are central in the visions of the knowledge society, and through this outlining a dichotomy and a logic, where technology through its physicality can be either present or absent in a specific location. This technical approach to knowledge outlines a very clear dichotomy, which is easy to see and grasp through its visibility and as a rhetorically easy to convey. However, the imperatives of this discourse also means that areas that do not have ICT located are not having the *right* kind of *knowledge*, the *kind* which is associated with the practices associated with the use

of ICT. Also, as accounted for, then a more general knowledge, located before the physical location of these artefacts is not accommodated in this discourse.

5.7 Summery

‘Knowledge’ is held to be vital in the perception of the knowledge society, outlining the importance of being informed above anything else. However, as shown, this knowledge is rarely very specific, but rather promoted as this concept, which is mentioned as a *key concept* in the so called knowledge society about, but rarely is able finds to give an exact definition of, or location.. In the South African context the proliferation of knowledge is seen as a necessity for promoting and creating an awareness of democratic values; equally it is envisioned that information and communication technologies are to empower disadvantaged communities to make informed choices and create prosperity. Through the connection to world and subscribing to an ideal of global democracy and modernist enlightenment it is anticipated that information and communication technologies are to solve socio economic problems within these communities. For this, however, the physical artefact is logically assumed installed and located in the community and in case of the absence of ICT the local community is not assumed capable of obtain Knowledge for taking actively part in the globalisation. A consequence of this notion is that it outlines a strong dichotomy between those who are in passion of such an artefact and those who are not. The presence of an artefact thus becomes an obligatory passage point for the acquisition of knowledge, meaning that informal types of ICT-related Knowledge obtained among social piers, other ICT media etc. is not being represented as ‘knowledge’, al though present. Furthermore, a consequence is that this dichotomy understanding of knowledge, as being exclusively dependent of an artefact equally pre-construct *communities* as zones where knowledge is not present and as such ‘information-poor’, refered here to as 0 – Knowledge zones. The logic of this dichotomy then entails that local knowledge and practices easily becomes labelled as irrelevant and to be replaced with a ‘the right knowledge’ i.e. skills relating to the information society. Para statals, NGOs and Community Champions are arguing for the acquisition of information and communication technologies in order to take advantage of this opportunity to become *developed* and most of all, not being left behind. Para statals and community champions agree with this notion, but act on a different basis: The para statel is materialising government visions and converts the envisioned benefits into technology, in a process that reduces political negotiations into artefacts. The community champions, however, seem to focus on the promises of the opportunities for the community. When focusing on the intended user group it is evident, that the initial visions and imperative for the proliferation as a means of spreading democratic values is absent among the participants, rather there seems to be a significant gap between the understanding of the importance of knowledge, envisioned in the globalisation visions of the South African government and the users interviewed: The users did not in any instances indicate the need for using acquired knowledge for active participation in community

level politics, nor did they indicate an increased belonging to a community context through the acquisition of knowledge, as otherwise proposed by community champions, government and parastatals. In general ICT was to a large extent taken as something that is needed to learn, rather as a means for obtaining information for *empowerment*. This indicates a clear discrepancy in the notion of *knowledge* and with the consequence of a homogenous prescription of communities as being *either* knowledge zones *or* 0 – knowledge zones, the notion of *knowledge* interpreted through this dichotomy is rather problematic. It raises the question about *knowledge* we are talking about and is represented, and if local knowledge is not being represented.

6. Embracing the World – Globalisation Agents and the Issue of De-Marginalisation

6.1 Non-humans for democracy.

As argued in chapter 3 about *the communities* are to a certain extent constructed through development discourse and appear as *symbols* that fit very well into the total notion of the need for becoming *developed*. Equally, the discourse on globalisation is actively translating and re-prescribing new meanings to the *community* outlining the necessity for initiating a process, where new technologies are being introduced into these perceived, anticipated, third world areas [Mbeki 2001c]. In the previous sections it is a general anticipation, within development discourse that the new technology holds a possibility for creating wealth and prosperity and subsequently contributing to *poverty reduction* in these areas, with the logical positive impact of an increase in *quality of life*. Generally, the economic discourse of globalisation and development tends to leave out other

aspects, than those relating to economy [Beck 2000]. For reason I would like to go a bit deeper into what I would like to term the political imperative and the strong sense and efforts to have non-human actors to ensure and promote democracy. This section is aiming to portrait the *concern* and *optimism* about having non-human actors to change and promote a specific practice in the socio-technical landscape; it is at one and the same time an issue based on a notion of globality and the connection to a global context, yet it is local in the sense that it reacts on very local conditions.

It is a past of a racially divided country, of masters and servants, of racially inspired conflict and mistrust. It is a past of a South Africa isolated from the rest of Africa and the world, a pariah among the nations. Mbeki, 2001a

As indicated in the quote above, South Africa used to be a country experiencing racial injustice, division and in particular *isolation*, internally as well as internationally, expressed by Thabo Mbeki as *a pariah among the nations*. As a part of the South African government initiatives for creating a *new* and democratic system, the future of the republic is going towards a system that is no longer based on *isolation, division* [Mbeki 2001d] neither internally, nor towards the rest of the world. The profound policies of social transformation outlined by the post – Apartheid government since its inauguration in 1994 have in the efforts of *undoing the past* have been strongly aiming at *de-marginalising* the previously disadvantaged groups i.e. non-white part of the population.

6.2 Digital Inclusion and the Fear of the Past.

The prospects and employment of information and communication technologies as agents of globalisation is then, in this context, equally a perceived as an issue of gaps, inclusiveness, membership and marginalities and the future prospect of overcoming these. As accounted for in chapter 4 and chapter 5, then the physicality and the geographically location of the technology is perceived as a vital point, a criterion of success for connecting these, perceived, disadvantaged areas and through this a necessary condition for *harnessing* the opportunities of ICT for the process of de-marginalisation and the promotion of democracy. This resembles the issue of the *digital divide*, the anticipation of the have/have not dichotomy [Mbeki 2001c] widely accepted in the debate on the use of ICTs in South Africa. Still maintaining a critical stand towards the binary anticipation as being primarily promoted by the technology driven approach, it is worth examining the reasons for why this stand is so particularly appealing in a South African context, coupled with notion of being *either included or excluded* from globalisation.

It is equally true that while we may thus talk of an emerging global village, we have to contend with the reality that this village is divided between the haves and the have-nots. Indeed, the very

formation of this village carries the cost of the impoverishment of large areas of the village. ICT is both a cause and a manifestation of this impoverishment -hence the reference to a digital divide.

From a national political view: Transformation in terms of undoing a past, where exclusion and isolation was a part of an undemocratic agenda and for this reason striving for a connection to a connection to a global context and nationally de-marginalisation and *uplift* of groups that are ‘previously disadvantaged’ i.e. excluded from participating in a national democracy.

The opposite of this optimism is the issues around exclusion that is equally anticipated to be categorised (class, race, nationality, physical disability, etc) as debated in digital divide literature for being strong barriers for obtaining the much emphasised *information* [Wellman, et al. 2003]; therefore in a South African context it is emphasised that there has to be a particular effort to deconstruct these barriers of exclusion or as South African researcher Neetha Ravjee points out: “... [There is a need] to show the social construction of these digital divides (**new manifestations of old divides**)...” (my emphasis)[Ravjee, 2004]. This quote is a good example of how local conditions are linking technical exclusion with the political transformation.

6.3 The Role of Policies.

ICTs are held to assist in the process of de-marginalising previously disadvantaged communities, and ensuring the transition to democracy through its capability to provide people in previously disadvantaged areas with information, from the central authorities. Also, through the multi purpose community centres, the capability for the citizens to interact with authorities is held to be of great importance. Therefore, at a governmental level *policies* are outlined in order to make sure that the democratising and de marginalised effects on ICT employed in these areas is being ensured. Consequently, the *policies* are held to be crucial for initiating this process. In the process of ensuring that all parts of the country enjoy the same democratic rights outlines the political imperative, grounded in the perceived necessity for transformation of South Africa. As seen in the discourse by government figures, the use of information and communication technologies is very central in this respect.[e.g. <http://www.pnc.gov.za/>]

Politics: The passing of appropriate laws and policies (management, decisions) is at the centre. If this is not done, then there is no collective consensus for the basis of initiatives. Finances are regulated by political decisions, so is the use of technology (through Telecommunication Regulatory Acts) equally educational policies enabling citizens to take part in the economic globalism, must be in place.

The vision of the knowledge society in South Africa, is to a large extent also a vision of how to overcome pastime oppression and deliberate political exclusion of ethnic groups from democracy. In the official discourse of the knowledge society, knowledge is held to be the key for ensuring that no groups or individuals are left outside of the democratic society, since information and education is held to avoid the possibility to keep people in the dark [DACST, 2001]

The opportunities of globalisation and the fast paced progress is held increase the distance to an undemocratic and excluding past and open up for the inclusive knowledge society [DACST, 2001]. There is a promise in this new society of including even the most remote areas, pursuing a goal of prosperity through the equal participation of all [DACST, 2001]. An imperative need for the *education* of people in the rural and previously excluded areas is held to be the key for ensuring the participation in the knowledge society and if the effort to acquire these new skills is done, then the promise entails prosperity and increased political influence. However, the negative side of the imperative, outlining the risk of being left even further behind remains and stands out as a risk of worsening a marginal position, if the fast train of newness is not caught in time [Jensen 1999].

A closer examination of the [official] discourse framing the knowledge society, however, displays a consensus the road *towards* this society entails gaps and the risks of being left outside. It is anticipated that in order to close these gaps, there is a fight to be fought resembling past time struggles for democracy; in this way parallels are drawn between the rhetoric of the struggle and the fight for development outlined in the development discourse [E.g. Banerjee].

With the promoted rhetoric of the economic globalisation and the imperative of not being left out of the development, it is anticipated that the struggle of globalisation should go against the risk of remaining or becoming even more marginalised. An inclusiveness of all should be ensured, consequently discursively placing these issues centrally as a focal point for action.

6.4 Non-humans for a De-marginalised Future.

The promises of the knowledge society displays a future, where current problems of poverty and oppression have been eradicated and subsequently leading to a significant improvement of *quality of life* for all. In this way it claims to be a *new* way of alleviating problems unsolved by decades of development aid. This futurism, however entails two aspects: A scale construction where the African identity is promoted as a goal of unity through the knowledge society; it exceeds the national state and aims at including *Africa* (italic: understood as a social/identical unit). In this way the futurist ideal includes a dream of a united Africa, which is yet to be pursued yet waits around the corner and still in a process being created [Tsing, 2000]. With the scientifically based futurism of technology the alliance of these discourses are creating an ideal, where the assumptions are less acknowledging of heterogeneity going towards homogeneity.

This calls for a closer examination of these a priori discursive anticipations of gaps, in order to

uncover the consequences of the discourse it self and what conditions it operates. This is equally an issue of representation, as direction towards a unified homogenous vision of the knowledge society is potentially re defining and reconstructing social actors by others and subsequently not based on the actors own self perception and influence. [Escobar, 2002]

In this way, this sections is about the attempts of the knowledge society to de-marginalise and the shift in memberships, when a hegemonic ideal is being defined and promoted as a rhetorical *obligatory passage point* [Latour 1987 p.150], leaving out issues of perspective.

6.5 Material - political Strategies for De-marginalisation

As argued the highlighting of the perceived *need* for de-marginalisation on the basis of *undoing the past* in order to obtain the needed *uplift* (the transition to democracy) is embedded in the political imperative. As such the official discourse on the introduction of ICT into previously politically disadvantaged communities (and presently economically under resourced, marginalised areas) the issues around a process of de-marginalisation are being addressed and emphasised. In government discourse this issue takes on two forms:

1: The ideal of democracy: No members of the Republic should be excluded from participation in the democracy, as ensured by the Constitution of 1996 [Mbeki 1996.]. Therefore previously marginalised groups (non-white (non-European originating) ethnic groups, with an additional priority of non-white women) are perceived as needed to *de-marginalise* as a part of the transformation. This includes the areas where the majority of the population are residing (peri-urban and rural areas). As these areas, due to past laws of forced removal themselves are representing a history of marginalisation the focus on de-marginalising *areas* is being emphasised [see e.g. <http://www.anc.org.za/ancdocs/about/umzabalazo.html>], the historical notion of de-marginalised and disadvantaged populations can therefore be argued to be closely associated with these localities, which are then being regarded as objects of marginalisation.

2: The ideal of economic prosperity: The ideal of becoming a part of the global context of the information society and through this becoming a part of economic globalism is the national de - marginalisation process, once again, not to be left out of the world and the opportunities offered by the economic globalism of getting beyond the status as a developing country.

At a more concrete level the ICT initiatives and the including aspect of the *inclusive* ideal promoted by the imperatives of the information society and transformation in particular are also evident in the projects examined.

6.6 CSIR Digital Doorway

For example the CSIR Digital Doorway was originally based on a concept developed in India,

based on terminals particularly designed for children [Cambridge et al. 2004]. By the managers of the Indian version of the digital doorway, it was assumed that only children should have access to these terminals, as these were the future of the country. Moreover, it was assumed that the natural curiosity of children would be the driving force of acquiring computer skills through unassisted learning. In this way, adults were being marginalised by this new technology that was being introduced to the local community. A metal plate over the key board is preventing individuals with adult sized hands from using the computer equipment. However, in the South African version of the Digital Doorway the artefact is supposed to be used by children and adults alike. The project leader argues, that limiting the technology to only involve children, assuming that adults would have no benefit/interest of using the Digital Doorway, based on the assumption that they do not possess the same mental motivation for 'learning through exploration', as for children [Cambridge et al. & Smith R. personal communication]. The argument for including adults in the project states there is a need for having a larger part of the population in the specific disadvantaged location exposed to the practices of information and communication technology, in order to increase the potential quantitative 'impact' of ICT i.e. Making sure, that larger parts of the population are acquiring IT-literacy. In this way, the entire community is potentially committed in the effort of acquiring these skills, and not left with a situation, where parts of the population in the community, are not being marginalised and excluded from the Information Society by an external party, coming to the community. The strategy here is in accordance with the efforts and visions by the South African government to create a national information society, subsequently with the effort of de-marginalising the community at a national scale, as an expansion of the government efforts of a national de-marginalisation of the country, through the perceived need for obtaining a position in the global economy. In this sense, the de-marginalising aspect of the Digital Doorway project then is the effort of having disadvantaged communities to become *members* of a national context, namely the information society, through the promotion of 'IT-literacy'. The methods of installing an artefact at a central location in the community, which is already a point of social interaction, having a method that does not require an institutional setting, literacy, major investments, political decisions etc. Means that major barriers can be removed, facilitating this process of obtaining membership.

6.7 Government Communication Information System/Multi Purpose Community Centres

In the case of Thembaletu, the strategy of de-marginalising this community, first of all goes via the government's Government Communication Information System which is aiming at improving government services through having a physical centre (MPCC) located in the community. At this established location, information and communication technology is being made available to the

community, alongside other services, such as legal help, health clinic etc. Services usually available through the public sector/NGO and government based organisations. The community centre is in this way, meant to bring the community closer to government services; through the offered training programmes the standard practice of ICT use is being promoted. This include e.g. The typing of CVs linking the search of employment closely together with the use of ICT

[<http://www.gcis.gov.za/about/index.html>] and together with the training programmes in computer use, these initiatives are aiming at preparing community members for jobs. In this way the de-marginalisation strategy of the Thembalethu multi purpose community centre resembles the strategy of the Digital Doorway: An attempt to bring a marginalised community into a national context of the information society and through this introducing the imperatives of the modern globalised South Africa.

However, when returning to the question of *delegation* in this context the issues to be raised is to whether the closer connections and through this, the obtained membership also means, that the delegation of power, is still within the community e.g. If the community is able to take ICT use into their own hands and let it become localised or they have to rely on a predefined standards for using this technology. Moreover what does the inclusion at a community level mean internally for the members of the community? Are certain individuals being excluded due to the lack of accepting the imperatives of the South African visions of global membership of the information society?

In any case what is important to keep in mind, is that what appears to be a 'universally' good idea (Introduction of ICT) into the communities as a part of the effort of creating the global oriented information society would include the introduction of the imperatives outlined in the previous section, in particular the hegemonic and incontestable discourse of globalism. As being centrally defined, then these de-marginalisation strategies are formulated centrally, enhanced through the discourse of transformation and globalisation; the pre-scription by development discourse of the communities as being under developed equally strengthen this homogeneous idea of de-marginalisation. Potentially the heterogeneous structure of the local communities do not seem to be taken into account, increasing the risk of creating other marginalities, locally e.g. Persons that are rejecting to embed the imperatives of the information society into a perception, that the need for *change* is not considered relevant, and that 'things are better off remaining the same as they have always been'.

In Thembalethu, an example of a change in the notion of membership and marginalities is the local conflict occurring within the local community centre, where the informants were two young people, who were enthusiastically providing the community with computer training skills, based at the local community centre. However, local disputes within the centre management had led them to join in on an alliance with the nearby schools in order to promote computer skills locally, but outside the context of the government established centre, based on an idealism of 'giving opportunities' to the

local community.

What is interesting about this particular conflict, making it interesting for further analysis is its basis in an exciting dispute within the community and with the local municipality, yet changing its nature on the basis of the community centre. With this example, I would like to highlight the politicisation and the consequences of the imperatives of the information society, when introduced to a local community. As indicated in the analysis, the pursuit of an information society by government is based on the effort of having the country included in the economic globalism; through the negotiations with the local communities, indications are showing that the communities first of all are perceiving this as a chance of finally becoming politically prioritised, that something 'is being done' for the community.

Furthermore, the analysis indicates that there is a general perception about the achievement of 'critical points' i.e. When the physical artefacts have reached the communities and have been installed, then the goal of facilitating the process of these communities to become involved in the information revolution has been achieved;

6.8 Summary

An issue, locally very relevant for South Africa is the issue around social *inclusion* and the promotion of democracy, that no longer will leave parts of the population out of influence leading the notion that information and communication technologies should be *inclusive*. The inclusiveness is perceived to be obtained through the connection facilitated by technologies. Various organisations, both Governmental, NGO, para statel are in favour of this idea and in various ways trying to embed these ideals into the implementation of the technology. Despite the effort to convert the envisioned de-marginalisation it can be asked whether the technology does materialise these vision and gives a sense of being included. Interview with ICT users showed that perception of democracy and inclusiveness did not appear as an important reason for using ICTs; the importance of establishing this connection for the sake of becoming included was not mentioned by any participants. The logic of this dichotomy entails that the population is *either* included *or* excluded, which implies that there is a rather binary understanding of how information and communication technologies are impacting a local political structure. The implication is then that one is only included, when in possession of the artefact and therefore *inclusiveness* is decided on the basis of the artefact. Consequently it would be hard to see if information and communication technologies do have an inclusive effect and if it would be plausible to anticipate that information and communication technologies are uniting the local population and promoting democracy or in fact even creating a marginal *community* within the local area, rather than comprehending an entire area, making this the de-marginalised community.

7. Conclusion.

As a part of the South African transformational goals towards de-marginalising previously marginalised groups, what does the strong local emphasis on the need for including previously disadvantaged communities mean for the strategies for digitising these areas?

It was shown that the globalist strategies spelled out by the South African government, based on the effort for distancing the country from its problematic past are highly emphasised and together with the anticipation of the need for not becoming isolated economically, as it once were politically the visions of globalisation entail overcoming this de-marginalisation domestically, well as in the world. Information and communication technologies are widely anticipated for doing just this in various ways through *information* which necessity for being available to people in the previously disadvantaged communities and presently 3rd world districts, is a part of the democratic ideal of the knowledge society. Moreover, this enlightenment of becoming global is through these media available. For this reason globalist strategies, initiatives and research is very influenced by the worries of becoming isolated, excluded from the global commune.

How are these communities, targeted for ICT implementation, constructed as a part of the landscape of development through the connection with the imperatives of globalisation? What is their role in this process?

Very much influenced by development discourse the poor districts are discursively given an identity as being third world communities very much in need for becoming modernised through the implementation of information and communication technologies. The Third World poor rural community is in this way targeted for modernity efforts, but in this way *community* also becomes a *symbol* which in this manner becomes a concept, rather than a physical, localised entity. *The community* is nowhere and everywhere at the same time. The role of this symbol, however, rather serves as a means of communication between South African governmental agencies, domestic and international NGOs, development agencies and the community based *community champions*. In this way the community is equally a unit of collaboration and a part of a social landscape, where social actors are interacting and at the same time an *object* around which communications revolves. In this way communities are very homogenously defined and not leaving space for villages as being socio-economic units where there is no social commune. However, *the community* is a part of the dream of globalisation and the South African visions of empowerment and for this reason the rural, poor community is targeted by South African globalist strategies.

How do small communities like Thembalethu deal with the imperatives of the need for connecting to a global context? What happens, when ICTs are being introduced to the community?

The discourse and the subsumed imperatives linked with the pronounced imperatives by the globalist strategies, mainly outlined and strongly promoted by the South African government is very present in material issued by the government. Framed by a notion of *being African* the imperatives of the globalist strategies are discursively constructed to involve the population via the African village. For the further promotion of these ideals, however, the role of the *community champion* is interesting through its position as a boundary object, located between a locality and government. When the success of getting *resources* physically located in the community has been achieved, the community champion is becoming responsible for *creating* a community around the technology for ensuring its naturalisation. In this way, the integration of technology in the local setting does require a creation or re-creation of the community, in order to encompass and fit local practice with the practice and rhetoric of information and communication technologies. Like this the globalist imperatives of the government do have an impact, yet translated along the way in order to fit to the trajectories of the actor.

This thesis is based on empirical qualitative studies involving various parties, stakeholders, actors etc. in South Africa conducted within a limited timeframe and with limited resources. Naturally, further material would have given a better and more comprehensive image of globalisation issues and the imperative surrounding the efforts for *becoming* global and the need for bringing third world areas into the context of the global knowledge society via implementation of computer technology. If I am to put my work in a perspective to point out issues that I would find interesting for further exploration it would be:

- Further investigations of the *translation* aspect of the very strong imperatives of globalisation and the evaluation of impacts, with a particular focus on the party that is rarely heard (this thesis included) the common inhabitant in the localities that are sought to be *digitised*, in order to get beyond the silencing effect of representation i.e. in particular the strong imperatives of modernity surrounding globalism discourse, anticipating the heterogeneity of the involved actors rather than accepting given representations as being *a priori*.

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Appendix 1

Initial Categories Based on Initial Interviews with Multi Purpose Community Centres.

Research categories:

Services offered

Interest

Authorities

Community

Facilities: Security

Managerial problems

Logistic problems

User group

(Altruism/ideological aspects)

Technology attitudes and acceptance of technology.

Appendix 2

Provisional Categories

Category

User will

User application

Unfamiliar teaching practice

Technology aquisition

Technology acquisition

Technical awareness

Technical advancement

Subject computer use

Researcher learning

Repetition

Project outcome

Project funding

Practical manual exercise

Outcome of instruction

Organised finances

Opportunity awareness

Observation of use

Motivation for use in school work

Motivation by national government

Money barrier

Mercantile opportunity

Management of sites

Machine human equity

Level of formal completion

Leisure communicative use

Learning

International Interchange

Instructor presentation

Category

Info finding
Government Contact with community
Gender concerns
Future scaling
External instructional artifact
Evaluation of SA projects
Entering field
Employment
Discipline
Design description
Demographic differences
Connections
Computer use
Computer availability
Comparison through research in SA
Community sponsorship
Community relations
Communicative opportunity
Communicative internet knowledge
Barrier ignorance
African vision
Administrative problems
Adaption to SA Context
Acquired knowledge from computer classes
Entertainment use

Wednesday, May 04, 2005

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Appendix 3

OpenCoding

ID Category

Interest:

Outgoing interest
Outside interest
Community interest
Government interest
Community commitment
Champion Passion
Government commitment
Community sponsorship
7 Motivation by national government
Stimulation

Funding:

8 Project funding
Government funding
Private funding
Cooperate funding
Availability
Perceived importance
Organised finances
52 Future scaling

Customizations

9 Design description

Customized

Standardization

Standardization (work a bit on this)

Use:

10 Observation of use
Time of day
Confidence
Popularity
Impact

Use intensity

Gender ratio [Only parastatel mention this as an imperative issue, why?]

Discipline

40 User motivation

42 Technical awareness

43 Entertainment use

44 Communicative opportunity

45 Mercantile opportunity

49 Motivation for use in school work

50 Leisure communicative use

Learning:

Learning

Stimulation

Formal learning [standardized specific able to categorize]

Informal learning

29 Progress in learning

27 Practical manual exercise

28 Repitition

30 External instructional artifact

Cooperation:

Connections

Networking

Exchange

Content:

Content

Relevance: Government, Employment, educational, local

Content and technology knowledge:

Project outcome (unpack)

Success rate

Exposure

Knowledge [How much do they actually know, without necessarily having used icts]

Technology presence [To what degree is knowledge being conveyed?]

Narrative presence

Community relations

Outcome of instruction

51 Communicative internet knowledge

31 Computer availability

Technical advancement

34 machine ratio

35 Technology acquisition

Management

36 Administrative problems (unpack)

Control: External control, own control (Think of sustainability)

Developing empowerment:

39 Opportunity awareness:

Empowerment

Employment

Info acquisition

Employment: Importance

Info finding

48 Acquired knowledge from computer classes

Appendix 4 Axial Coding

1 Adaptation to SA Technology integration

properties: Dimensions of Technology Integration

Social adaptation User frequency: high
Technical adaptation duration: continuously
Local relevance User extent: high
User group: general
Interest: high
Technology exposure: high

context

Under conditions where Technology Integration is there is a high user frequency with continuously duration, high user extent a general user group was participating and the interest was high and the technology exposure is high then

Strategies:

live in the area (6), (feed back from community), Consultation of community, speak with community leaders, comparison through research (public relations?)

Intervening conditions:

Availability of funding
External interest (attention?)

Outcome: successful integration

Government relations

Community commitment

Use

To what extent does commitment and interest contribute to a successful integration? And to what degree is money a determining condition?

Appendix 5:

Initial interviews with Multi Purpose Community Centres:

Bonteheuwel: Different government departments; social functions such as dealing with child abuse etc. ID once a month; [community] news; sports club; social problems; youth projects; well-used by community, approx. 100 visitors per day. IT mostly for admin use. Having after school courses, such as drivers licence; staff problems (salary, lack of people etc.) security not a problem; telecentre next year. Satellite police station.

Langebaan: No internet, but will be there in the future. Positive expectations.

Hartebeeskraal: No typical user, both rich and poor; offering a wide range of services; well used, about 400 visitors per day; offering basic adult education programmes; lack of interest from the Western Cape Government once up running, no interest in those running. About 1500 square metres and very busy. Public Information Terminal installed, free for community, but very expensive for centre <it isn't really any good – attitude>. Main problems are lack of staff and security, mainly due to lack of funding.

Vanrhynsdorp: Has computer room; installed/launched e-community portal recently; area with high unemployment rate; various programmes, such as HIV/AIDS, adult literacy (exam) etc. Visitors mainly high school students, job seekers, students from technikons; used frequently for community projects; generally well used. Extra governmental services once or twice a month. Services offered for a low cost, but not free.

Beaufort West: Used for projects only; various projects many related to arts and culture, youth projects; gong to invite local youth to youth bash; no tele centre only 'computer screens', but tele centre will be installed in the near future. No communication between centres.

Thembaletu (George): At the moment restructuring, so not in use. No internet connection and 7 terminals currently out of order. Great interest from the community. Encouragement from the authorities, at least to start up the centre. Mainly used by semi-skilled people. Offering services in town (?). use of facilities at a low cost. Going to have an adult IT literacy project. Going to have a telecentre. Youth training programmes. Services offered at low cost.

Appendix 6 Interviews with school pupils.

Starting from 1730 of school.mp3

What do you think about computers?

f Computers can be <? > you can <?camping and cooking >you can put everything you want from <? society > back on it

m you can't do it <?>

m with a computer you have hardware to control the software

f I really think <??>

going to 3126

3339: What do you think about computers?

m you can use it for finding music and information

f I think it's good, because <??>

f I think it's good because you can communicate with each other with the computer

m you can log on to see soccer

m you can use it for type letters, use images

m you can use it for shopping

m you can also use the computer to cehck the weather forecast

509 How do you use the skills you aquire in other subjects?

Abel math [yes english [yes business [yes

624 how often for solving assignment?

Abel they say they only did [it] one time, so they don't know so much

727 when you're using the computer as a part of assignment, because you've been told by teacher?

pupils yes

Abel This boy says in most cases the pupil decides if someone is going to use it <?>

Some of you have mentioned that computers are good for shopping, for writing letters checking weather, finding freinds. How often do you use computers for that kind of purposes? I mean how often eg. are you sending messages or e-mails to friends and family. Or how many of you have tried to type a letter and sent it via the computer to friends and family? [talk in the class]

Abel [pupils response] none

0948 And how about the internet, how much do you know about the internet?

Abel Ehh they don't know about computers [j ok They others say that they also know nothing about the internet and about <? talent in the world >

1051 OK, then I would like to ask you about the future with computers, how do you imagine yourself in 10 - 15 years from now? how do you imagine what it looks like and how would you like it to be?

1141 f I think computers are going to become <? more available/common >

Abel f [translating] what she says is like ehh teaching like the future in internised computer network, so there will be no fires. <? You just finding katanet for the beging you just find a computer, when you just have the permission >

f I think you can look for a job

Abel So in maybe 5 years then maybe pass matric or maybe college <?[online] >

m <? >There must be a computer for everybody in the offices

f [asking if they're going to learn how to use the computer and asking for advise]

<p>Able to show what R: representing whole of WCP? Work out general description Projects being mentioned individually How long in Thembalethu? J: return to country R: hoping to go forward with cooperation Profile need to update Give u an update Take copy with you E: which cooperation org. in SA? J: go out to see what there is website How do you intent to form cooperation? J: need to get ideas together. (personal motivation) What when in July E: the plan with me Cooperation with NGO etc. nice way to close that gap IT is our greatest passion How long in George? R First visit in George? J: future R: Enhance the community Skills to community IT, Financial skills Aim to accommodate these skills J: Expand to schools Run it at MPCC or own place Lack of resource Exchange free resources equipment at school More employment and more enhancement Lack of skills in george, institution not enough to provide, based in CPT Medium of learning does not accommodate language Aim At the moment you're able to provide the language you're able to provide skills Abillity to community Leads to demoralisation WCP problem w language and political aspect In the moment we don't want a society where we don't feel free to each other [because of language] past time era Like to encourage through communication Most people are coming from the outside to help, why can't we, those people have to go back If people not interested like work for nothing Encourage locally makes more attractive for people from the outside E: Municipality problem Things only for certain people because of our past</p>	<p>Research geographical representation Project attention Research time Cooperation Business profile Knowledge for networking cooperation Research outcome Community-cc-gap NGO IT passion Enhance the community through skills Technical and mercantile skills Skill accommodation Business location Lack of resources School deal Employment Education centre CPT Language in teaching Language barrier Community skill Community motivation Politics of language Language exclusion Past time era Means of encouragement External assistance Internal dynamics Interest Local encouragement Outsider attraction Local political conflict Community exclusion</p>
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0308 r ..ehm:: And in South Africa we felt that we couldn't do that ..so..he:: there were _too_ many people left (..) that doesnt have access and that needs to be:: (..) _exposed_ to technology and so we made some adaptations and then in ehh november 2002 we did the first installation in cwili eastern cape keimouth(?). ehmmmm we chose that area because ehhm the minister of science and technology was there the year before and the community there basiccally asked him if he can do something for the community. ehmm (?)we viewed would really like something close to home cause it is easier to ehmm to manage. Ehhmm we did that but what we thought that we would to put put professor mitras and we would like to digital door in each of the 9 provinces in different types of areas, say very rural urban areas (and..like that?) see if the results are the same in the different areas are ?way to to ..? and to think slowly and not just say because it works in India it will work here..so.. think that we did ehmm (?) cwili we lived there for bout six months to get the results back from professor russell <??fra efter India> and then after that we started looking into for another project that we could do we decided to do witnin mamelodi. which is an urban area.

0428: j which is a township?

0430: r ja

0430: j ok

0431: r ehmm and then we compare the results ehmm taken from those (?) the results would have been similar in terms of learning and usage, except that in rural areas an equal amount of girls and boys and in ?urban areas? only boys about 90%. So still need to sort of look into that. And that research was done by a masters student in education of eletronic learning from PU ehmm and then probably people got interested of some people who got interested and ehmm the department of science and technology was also very _happy_ with the result. they suddently got _funds_ to _go_ out <??> I've got a map that I can show you we've got now.. the first of the machines were only single seated they looked like like this it had only place for one ehmm person to work. But ehmm I think we actually have one with a chair but then we decided we would have to get away(?) that we can increase the impact and thats why we designed the machines you saw at the back that has four places ehmm and that seems to be working well cause there is not that much _competition_ from people to _get_ to it cause there's enough space for people to work. Ja so that's basically how it happened. ehmm I will show you a quote which president thabo mbeki made in ehh introduction to the r&d strategy which bascially says it is important for South Africans to incooperate technology in their daily lives and I think that is sort of.. that testement which stimulated our interest in the project. Think also the design actually.. to have impact to make a difference.

0628 j Did the department of science and technology did they ask you or like requested to have such an initiative or was it something you were more like stimulated to do?

0647 r Ehmm I think it was to start of ? with a joined initiative so the csir and dcst felt it like a jointfull(?). Ehmm.. we do a lot of recommodation work design work, but they are full? party political support in terms of funding in terms of selecting sites for example also interested in resources, so basically an equal effort.

0726 j And ehmm you said before that ehh at a difference that you wanted to do, like compared to the Indian project, also to include the adult users. In which way did you decide from making more terminals. Which considerations did you have like when designing your terminals?

0757 r Ehmm.. ok (?) certain state of design we did a lot of research in terms of international perspectives like kiosk design, but must have angeled the forms the keyboard come (?) ehmm. And we also had the keyboard at the good height for the adult and then waht we do to accommodate children if they have a foot stool that they can stand on. Ehmm.. we also have, professor mitra has.. his was very low and there was a cover over it, so adults can't put their hands in so we made it ergonomically possible for both children and adults to use the machine, ehmm also in terms of contents that we put on we try to put on content that would be stimulating to both user categories.

0849 j ok, did it, in your experience, did that change, did you manage to make more adults use the machine?

0903 r ja we did. ehmm, the biggest user group is still let's say 7-8 to about 19. But diffinitely especially in ehh, ja not especially, but in mamelodi and some of the other sites (?) there

is a big proportion of adults using the machines. The interesting fact that they usually use it when kids aren't around so they choose very early in the morning and very early at night, very late at night (?) when the children are at school, so we think because they don't want to look silly, but they still want to use the machines when they are feeling there (?). So the users usually organise themselves into groups during the day.

0954 j And ehh one of the things that I found interesting about the project was specifically that it's not just a purely technical thing but that you have this frame work of minimal invasive education. Did you in your opinion have you achieved the results that you had hoped for?

1026 r We have. What we do is ehh we use, for each installation we make funds available for external assesment and evaluation basically. OK up to date we've done com(?) of mamelodi and we've done some as you see in the limpopo province. Ehhm and we've been using students from the university of pretoria to optimate<?> and the results that we're getting from there is very positive. They're saying ehhm both and the adults are learning. And the.. the mecanisms of experimenting and <ioning?> works well <lyt efter> and the recommodations basically from those sides have been that we definitely should install ehmm ja.

1118 j OK, and i saw on your site tahat you have you are installing specific software on your machines, but you also as far as I understand you do allow internet access on your machines to the normal internet.

1137 r OK. At the moment we have internet access where possible. There are I would say two thirds of the sites where it's not possible is it probably, usually because the only option is vsat and that's too expensive. Ehmm I'm busy with a proposal to try to see whether we can provide internet to all the digital doorways and to connect them to the csir, 'cause then we can also manage all the machines we might do that. <gladly?> we do have internet is very popular, internet and also e-mail. In mamelodi we do have internet and we found that people actually apply for insurrance online they're doing their banking online they are looking music and soccer and sports and stuff like that so ja. But we tried becuase you don't have internet everywhere, so we try to have as much contents at the machines as possible. and we also <?> to <?> possible the machines <?> three or four months, new stuff as well.

1250 j What are you mainly going to get, what kind of software would you [choose]?

1257 r In terms of sort of operating system level ehmm, there is a file server anti-user pc. We use the file server to store the videodata from the camera. The file server is Free BSD and the user PC is basically Mandrake Linux and in terms of the kind of user environment I mean application wise we try to put stuff on site technology and biology and stuff about astronomy. Ehmm.. stuff about agriculture and health and aids there is games that help with mathematics and typing and <spinning ?> there is also a lot of <training ?> books on a wide range of subjects. Ja so we try and, the thing is, one thing that we are looking forward to to find that we can <?> use enclopycedia. All the enclopsydias are online can't use <? lyt igennem>. That's why we're trying have like a good mix of educational material and <?stupid > games on there also have some kind of educational components there.

1416 j And how has the reaction, been around some like I mean for example in rural areas, where one maybe could assume that their knowledge about computer usage is quite limited I have seen indications in some the material you have sent me.

1439 r I just fini we just finished installation in a place called <?Popuesstadt> in the middle of absolutely nowhere and one of my colleague got a, she knows, we did it at a, there is a library and the guys that runs the library I've seen somebody who is so passionate about books and learning and stuff. And the only reason this library exists is because he's looking for grant <?he's been all over the world?> and he asked us is there's _any_ way in which we could put up a couple of computers up in this community there's about <25?> people living together and they have never seen a computer before. So we installed two weeks ago and he called back and he says 'the community is not sleeping' everybody there, the library is usually open from 10 in the morning to 6 at night, but at the moment it is open from 7 in the morning to whenever they are closing. He says that when he gets there the kids are hanging on the gate to get in and they're using drawing program ehmm reading there is one application on it that can do videoediting. One of the kids actually found that, is not something that's obvious on the desktop, he actually dug into mandrake and found

it. Joa, so he says, he reckons by the end of the year 15000 people would have used the machine, so that gives you some idea. Some of the sites work better than than others and that's one of the things we wanna do this year is to look a bit more at, what you're also speaking about, the social aspects. What happens if you put technology <practice ?> in the community and why does it work and why doesn't it work; we think it has a lot to do with where in the community you put it and how easy it is to get to it. But the results are actually amazing, we had an installation in kayelitsha. We were barely finished, I mean we were still screwing the thing to the ground and there was about 45 kids all trying to look on this, so ja.

1658 j At least that sounds like very succesful. So I assume it is important for you to get the people around it to like sort of engage to this?

1716 r [these are] things we also still have a lot to learn. Ehhmm there is some ajustments we wanna make for example. The kids forget <? what peolpe forget, so we wanna see write something that has been close so we know well> what kind of contents would still go on or stuff like that, so we still have a lot of learning to do and what we're trying to do is to ask them the places we put the machines people to give us feed back. Ehhmm that is important to get people engaged I mean the more interested they are the better feed back we can get from the community about what works and what doesn't; whether it should be in a different place whether we should have other contents on it stuff like that.

1807 j So campared to, now that you say that, sort of like trying to compare rural district and urban such as mamelodi for example. Do you see a any differences in the receptions of your terminals, was it different in mamelodi than compared to for example to cwili?

1834 r The only difference we saw is in <?respect> of gender the learning patterns and the way people interact with the machines is the same. Ehhmm we haven't completed the second of the other rural areas, but that was the one difference that we saw. You can probably say that in an urban area, where people have a more.. there's a mixture of exposure technology. There is a very good chance that nobody had any exposure to technology before <?>, whereas in urban areas there's a mix in terms of having had exposure or not, so you also have a mix of.. [cell phone rings]. And also what I saw in some of the rural areas there's a lot more <?middelaged > that use the machine, whereas in mamelodi we haven't seen any, which is interesting. We would <?like to >, there is one of the professors at UP, which is currently looking at gender work and she is very interested to actually look at that. So that's one of our future topics.

2001 j What are your suggestions to how this maybe could be addressed?

2007 r I haven't actually thought that far. I think one of things possibly have to do with security and <?the woman feeling safe >so I think it would be important to put the machine in a place where it's perhaps really open, where people can see what's happening. And also it has the right <?type of >content on it. I think that's basically.., I haven't in detail about it, because I think it will be important first to try to find out why, because if it's because of social conditioning then it might have a bigger impact than we can try to fix and I suspect it might have.

2054 j But you're working closely together with people at UP? [r confirms]

2104 j I am just interested to know, now that you, and that's a thing I find particulary interesting, as you said that you have the feeling that you would like the adults also to use it. In my mind, when I think about it I would imagine, some people may, especially in the rural areas, maybe be quite conservative about, maybe would find science and technology irrelevant or somehow or they would be like very <?> of this kind. Do you have any experiences with that?

2144 r we haven't haven't seen anything like that.

2146 j So people have generally been optimistic?

2151 r I think there's sort of a general awareness of the opportunities that technology can give. I think the machine is sort of, always regarded from that perspective. Something that will bring opportunities in form of access to information and learning how to use a computer, perhaps being able to get work and that's how people see it, which is good. We never had a community that said 'we don't want one' because what we do is we usually go and arrange a meeting with the community leaders to present to them what the project is about some of the results we've had and then sort of discuss with them whether this would be appropriate for their community and <? what they want > and that's basically how we approach it and it seems to work well.

- 2254 j So you have also from the community leaders <?> ?
- 2301 r Mmm.. you can't, I mean in South African you can't do something like that, especially in the rural communities ehmm you can't if you have the <? applying> of, basically from the community is <? doubt ? > because the whole African way of doing things it <?needs > to be consulted you <? > you can't just go and put it up (it wouldn't work)
- 2328 j So what are your ideas, what are your future plans for this project?
- 2345 r Ehmm..OK..We see this dream of like a network of Digital doorways across South Africa and then (..) in someway having them networked so they're able to talk to one another so that we can manage them and then also perhaps have them connected to India, so the groups can communicate. That was the big vision. The next step for us is to look to <?better > methodology to make it sustainable because there is internet cost. People <?> we don't offer a printer, so people won't be able to print and stuff like that, so the next step is to basically to look at all the installations we that we have done and develop a methodology with with we can make it sustainable perhaps, perhaps combine it with small businesses or use it for government service delievery as well. That's basically our next step, so once we're sure that we can, because there's no point in putting these things all over the country and as soon something breaks everything stops working and basically look at the sustainabillity model. And also we've had interest from a couple of other countries like Angola, Mocambique, Tanzania and that's what the white map is about to see how we can actually go outside the borders and will also be some of the next steps.
- 2519 j So you see a perspective in like actually having an African model for, that would also involve the rest of the continent?
- 2532 r Eventually, but sort of, we will only take it step by step [laughs]. <? We've got close our unit as close ? > perhaps use some of that to expand.
- 2554 j And do you see this kind of program as being mainly governmental funded or do you see maybe private investment could be involved?
- 2608 r We already have private investment involved ehmm Eskom, which is our electricity provider is involved and some of the big banks are involved. But what we are trying to do is; it works better if you can bring a <?consortium > together that brings big amount of money to the table, rather than doing like odds and sods smaller amount of <?distribute > but we see it as a partnership between government and private enterprises.
- 2649 j Oh yeah, now I remember my question I wanted to ask. I am specifically interested in internet use ehmm as you explained you, I mean the user has a browser and then they have, what you call it the 'normal internet', but have you ever, has it been in your consideration maybe to make software and browsers that would of course been internet connected, but be able contents of importance to the community, not importance but like maybe more easier to find information?
- 2737 r We haven't actually thought about that [laughs] ja good idea, ja..
- 2747 j So in the MIE concept is also that people also like learn to use the internet and find relevant contents as well?
- 2803 r Ja I think also having the internet available keeps the contents fresh as well. Ja. As long as they don't misuse it..
- 2817 j I am especially asking because the people I am connected to at UCT they're very focused at content issues. So they have like funny discussion about 'here we have technology and then there's contents' I think it's better to see it together rather than seperated.
- 2842 r It has to be together [laughs]. I think as soon as you, ok we also have like that, the people at this floor are technology people the people who sit at the top floor are application and contents people, but as soon as you get into a project you have to have it together. You can't separate it, in my opinion.
- 2910 j But do you indications that people would access <?> as provided like this sort of by themselves <?>?
- 2924 r Stuff like soccer sites music and as I said banking and insurance. I also suppose that some people are looking at enclopcidia and stuff like that.
- 2945 j I've been attending some, like a couple of seminars regarding telecentres, which is also what I want to try to go to a telecentre George a bit later in april. I've noticed that their model is usually that you have your telecentre, which has a manager so it is sort of like on it's own. Is this

like, I have the impression that is quite a common idea in South Africa is it a model that you also consider for the MIE <?> to keep it going? [r to have a manager to run it [j ja like simply have, ja rather than independent units, but also have some sort of organisation around it?

3055 r ja at the moment we have, what you call it, a community champion in each of the communities <?> but I think part of the big event [end of side A]

3111 r [Start side B] Ja a part of the bigger picture is to have that a system <?impact >, both infrastructure wise or the management officer something we can manage, whether we do that ourselves or somebody else does it, but we are thinking [3133]

CSIR on ICT Development.

39:00 j As I said in the my project is related to this whole thing of development. How do you see yourself as an agency or company developing <?>

39:21 r Ehhmm..One of the..The CSIR is a parastatel organization. We get about <3?> percent of the funding from government, so we report to parliament and one of our <pre?> [purposes] is basically to do work that contributes towards to the uplift and development of South Africa. So the whole development issue basically fall right into it. It is basically expected of us, and this is where this project and a couple of others we are doing is to answer that requirement; to live up to that requirement that is based on us.

40:02 j And how do you see *yourself*.. Like I told before I'm working together with the people from Educational Technology at UCT and I've been attending some of their seminar [..] What they're repeatedly getting back to is also to support this process that South Africa is a part of [transition]

40:53 r [sigh] Ahh.. I just basically see the Digital Doorway as .. as I said.. part of the CSIR <pre?> to uplift South Africa's specifically previously disadvantaged South Africans and I think it fits into that context in a way.

(Field notes)

Speak with pupils

Privilege to take part in computer classes. So much happening in the USA in terms of technology. Technology is important if you want to have a job. We have a history for not knowing about technology, but now we need to know in order to get a job (licences). What do we do if there is a loss of interest in computers?

Adults

There is need for knowing about computers because they are used in the workplace, so in order to get a job you need a licence. At work place most informants were not doing work that would involve the use of computers. But getting a licence would create better opportunities for getting a job. Internet important for making money in terms of small business. Word/excel main purpose for attending computer classes since it is the most used software.

Informant: many facilities remain unused because of the lack of programmes. At the multi purpose community centre, 7 computer terminals that do not work or are not being used.

Thembaletu George is an area with a high unemployment rate. Most of the area consists of house from a government housing project (basic housing) mixed with informal settlement, consisting mostly of shacks. There are two major primary and secondary schools in the area, where pupils are attending computer classes, facilitated by ER. Schools are being offered training of staff and pupils for free and adult classes are being offered on a pay basis. The area is mostly xhosa, but Afrikaans is spoken too. The two schools I went to had only xhosa speaking pupils. ER is based on the local MPCC but aims to become an independent CC. The MPCC is run by members from the community and has via GCIS connections to government departments and provincial departments. The MPCC meets very little support from municipal authorities; according to informant the local DA municipal ruling party highly under prioritise Thembaletu and surrounding areas, as these areas mainly consists of black unemployed Africans and also the area itself has, locally, a very little interest. It is based on the outskirts of George; informant mentions that local DA is mainly consisting of 'coloureds' and outlines the conflict between 'coloureds' and blacks during Apartheid. Socio economic and racial issues seem to be intertwined. Deputy Director of the MPCC confirms the lack of interest from local authorities and explains the slow implantation of national ANC initiatives as being caused by local DA. Informants suggest a lack of coordination between authorities and see this as wearing on their enthusiasm and their commitment to local community; bad administration by MPCC does not make this better; bad management by former municipal officials.

Strategy for implementing ICT use in local community is mainly based on computer classes given on local schools to either pupils or staff (free) or adult classes (paid). Among adults as well as pupils there was a consciousness about computer technology as being 'important'; importance in this sense means that it-skills improves chances of getting a job and as being essential for staying in job. Interesting observation is that most agreed that they did not have access to computers outside classes and therefore would not be able to maintain their skills on a regular basis. It was asked in adult classes what they should do, in order to maintain skills. Also there was good consciousness about internet and what opportunities the internet provides, especially among the youngsters; when asked about frequency in use of the mentioned possibilities pupils stated that nobody had made use of the internet, but mainly heard about this from their teacher. Interestingly, a young girl mentioned that internet made it possible 'to make love with a person you have never seen'; this indicate that this awareness goes beyond the class room, as I find it unlikely that a teacher would tell such things about the internet. For internet and general computer activities the participants among the pupils and adult class found no support or use. A participant in the adult class high lighted the importance of getting a computer driving licence as being of similar importance as having a normal drivers licence. None of these participants were in daily contact with computer technology in their daily lives, neither as leisure nor as part of profession.

Own role: Coming from the outside as a white European does spark interest and I was the potential donor who was being well treated by my hosts. I was directly asked what I could do for them and rhetorically asked if my research would be more than just for study. They seem to expect me to either join in as a remote but active partner, ensuring access to a wider network or even directly provide funding. They were empathising that they needed skills (enthusiasm/commitment) as much as they need money. I was shown things given by foreign donors several times and pupils told that I might be able to provide more computers for their school. There was a sense of disappointment, when I indicated that it would not be for certain that I would be returning to George in the near future. Think that my ethnicity for them was a symbol of resource (money/skills) and my European background made them confident that I would listen and be interested in their work. Being a white walking around in that area seemed to be very unusual, but welcome.