

EVALUATION OF A TELECENTRE USING STAKEHOLDER ANALYSIS AND CRITICAL SYSTEMS HEURISTICS: A SOUTH AFRICAN CASE STUDY

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There are disparities in terms of access to telecommunication by people in the rural areas compared with those who live in towns or cities, in many developing countries. This situation has created an undesirable information divide between the rural and urban dwellers. In its commitment to bridging this information gap, the South African government has vigorously promoted the installation of telecentres in rural parts of the country. However, most of these telecentres are not achieving the envisaged aims and objectives. This paper discusses aspects of an evaluation of a telecentre in a rural village in the Eastern Cape Province, with the aim of establishing some of the success factors for the sustainability of a telecentre. Semi-structured interviews and observations founded on Stakeholder Analysis and Critical Systems Heuristics were used to gather data. A qualitative analysis of the data elucidated some of the challenges in sustaining the telecentre as a viable operation with respect to the aims and objectives of the South African Government. The findings from the research show that an entrepreneurial approach must be used in order to make telecentres sustainable; vigorous means of awareness, advocacy and training about the telecentre services are needed; and that all relevant categories of stakeholders in addressing socio-economic and political issues within the community is vital for success.

Keywords: Telecentres, stakeholder analysis, critical systems heuristics.

1. INTRODUCTION

We live in an information era but, “this information era concept can only be realized when information is accessed by means of technology... once accessed this information has to be understood for it to add value” (Sopazi and Andrew, 2006). Baskaran and Muchie (2006) also emphasizes this point when they state: “For a long while it has been recognized that radical technological change based on microelectronics technology has far-reaching significance for developing countries ...in fact, information and communication technologies (ICT) have become a powerful agent of economic development by the products and industries they directly generate and through the socio-economic transformation they permit and provoke”. There are many developing countries in the world where

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communities are still isolated from the information hub, but there are also those communities that have newly acquired access to the hub but the adoption of the ICT is not forthcoming. This paper is based on research that seeks to find possible reasons for this, based on a case study in South Africa. This was an evaluation study of telecentres within the Multipurpose Community Centres (MPCCs) with the aim of establishing the critical success factors for a sustainable telecentre.

The case study discussed in this paper is based on the telecentre in Tombo village in the Port St. Johns (PSJ) district, in the Eastern Cape province of South Africa. This is a typical underprivileged rural village where 64 percent of the population is unemployed. It must be noted that this study did not look into the reasons why these people are not employable.

However, when planning for the introduction and implementation of new technologies especially in rural areas many factors must be considered, which include social factors, economic factors and infrastructure challenges. Premkumar and Roberts (1999) appropriately state: "New information technologies have opened up many new opportunities for small businesses in rural communities as well as exposed them to additional risks". The economic viability, social acceptability and technical sustainability of telecentres in the Eastern Cape Province were uncertain at the time of writing this paper. Furthermore, these telecentres lacked an effective and rigorous business (entrepreneurial) and technical approach for their functionality and sustainability. Preliminary investigation showed that the telecentres were not functioning properly.

Research on the evaluation of telecentres is relatively new and as such needs to be considered carefully before there are serious problems in this area of exploration. Gomez, Hunt and Lamoureux (1999), in their global perspective on Telecentre Evaluation, agree with the fact that telecentre development and research is a relatively new endeavour. Harris (1999) states that baseline studies in Africa are used to: "...establish yardsticks for key indicators of the community-related variables which we expect to influence. These include; community socio-economic factors, awareness of information technology among the community and among teachers and pupils, and cultural factors relating to the world-view of the community as well as its relationship with information". In the conceptualisation of the research it was decided that every attempt must be made to ensure that the findings will not be biased by the vested interests of the providers or funders of the telecentre, but that the pursuit of community empowerment will be the key imperative. This means that the community must be given a voice. The nature of the community associated with this research with respect to its literacy and economic status called for research techniques that would empower them to express their views with candor.

This paper is concerned mainly with the views of the stakeholders as to the impact of the telecentre concept. The research therefore is both summative and formative. On one hand it focusses on the current practices in the telecentre by assessing its effectiveness and usability. On the other hand it is formative, in that it focusses on diagnosing areas of the telecentre programme that are weak and makes recommendations for improvement. Data collection, analysis of data, interpretation of collected data, testing of the validity of collected data and final findings were pursued using the following methods:

- Observations were used over a certain period to monitor the use of the telecentre and current practices at the centre.
- The Integrated Model of Programme Evaluation (IMPE) adopted from De Vos (1990) and McKendrick (1989) was used.
- The stakeholders were identified by using stakeholder analysis, Banville *et al* (1998), and the boundary questions of Critical Systems Heuristics (CSH), Ulrich (1983, 1996).
- In order to understand the perception of the people about the telecentre techniques from CSH was used.
- Individual and joint face-to-face interviews were used to establish current practices. Telephone interviews were also used on a small scale.

2. THE TOMBO VILLAGE CASE STUDY

The first part of this section discusses the preliminary work performed by the authors to become familiar with the environment, as well as other general issues concerning Tombo Village. The second part describes the interactions between the authors and the stakeholders and the analysis of these interactions.

Port St. Johns is situated along the Wild Coast in the Pondo (a tribe) region of the former Transkei (a former independent homeland of the Eastern Cape Province before 1994) region of the Eastern Cape Province in South Africa, with a total population of 68 137 people. This is an area that is mostly populated by African (Black) people. In addition to their underprivileged economic status as mentioned earlier the African people are the most illiterate of all the groups in the area.

This MPCC under study was launched in 1999 by the Minister of Public Works and the activities include the following:-

- A telecentre established by the Universal Service Agency (USA) of South Africa (catered for in the Telecommunications Act of 1996).
- A medical clinic.
- An arts and culture centre.
- Department of Home Affairs (passports, visas, birth and death certificates, etc.).
- Tombo Entrepreneurship Development Centre (Community Based Organization).
- Partnerships with Non-governmental Organizations (NGOs) and Community based groups.
- Welfare services in partnership with Umtata (city in the Eastern Cape Province) Child Abuse Resource Centre (UCARC).
- Department of Agriculture.
- Post office services (now within the telecentre).
- And numerous activities offered by Government Communication and Information Systems (GCIS)

The Tombo telecentre offers the types and qualities of services listed in Table 1

Table 1. Services provided at the Tombo telecentre

Service provided	Duration	Charge in SA Rands
• Faxing	–	50c/ page
• Typing	–	varies
• Internet	1 hour 15 minutes	R30,00 R7,50
• Postal service	–	Free so far
• Photocopying	–	50c per page

2.1. Identifying the relevant stakeholders – A first step in the qualitative data collection

Stakeholder analysis has been employed to ensure that key stakeholders are included in the research in order to meet the imperative of community empowerment and to have a valid qualitative data set. “Stakeholder analysis can be defined as an approach for understanding a system by identifying the key actors or stakeholders in the system, and their respective interests in that system” (Grimble and Wellard, 1996)

Banville *et al* (1998) provide a deep analysis and elucidation of the two aspects contained in the generally accepted definition of stakeholders: ‘vested interest’ and ‘problem situation’. The vested interests of stakeholders and thus the stakeholders themselves, and the nature of the problem situation, are interdependent. The authors provide some “general non–mutually exclusive categories” of stakeholders that are pertinent to this evaluation research.

“Standard stakeholders” refers to those persons who affect and are affected by the problem situation and who participate in its formulation and resolution. This is normally regarded as the ideal democratic decision making process. “Fiduciary stakeholders” refer to those persons who act on behalf of clients, representing them. They participate in the process of formulation and resolution of the problem, but are not directly affected by the solution. “Silent stakeholders” refers to those persons who neither participate in the process nor have any control over the resources or uncertainties that are relevant for resolution of the problem, but are affected by the problem. Silent stakeholders need not necessarily exist at the time of the problem or its resolution. Silent stakeholders also include those who do not have the means to make their voices heard (Banville *et al*, 1998: 18).

In addition to ensuring a more holistic approach in the research, Banville *et al* (1998) argue that the stakeholder identification process significantly assists in formulating a problem, and that it can also be used to target those who may not be really regarded as owners of the problem situation, but could affect or be affected (for example in terms of resources) by the way the problem is solved.

The process of stakeholder analysis combined with the critically heuristic boundary questions (to be discussed later) led to the list of stakeholders that is provided in Table 2. Some information in Table 2 has been adopted from the GCIS’s business plan (2000). When looking at Table 2 it should be kept in mind that all three categories of stakeholders as proposed by Banville *et al* (1998) are included.

3. HOW THE DATA WAS COLLECTED

The initial intention was to conduct a workshop with the people from the community. The aim was to discuss questions that related to the objectives of this study. It was envisaged that the workshop would result in the facilitator and the participants developing a rich picture (Checkland, 1981) that depicted the situation in the telecentres. The use of questionnaires with those who are literate and oral interviews with the illiterate was also envisaged (the same questions in both of these techniques). However, during the first formal visit to Tombo, for the purposes of a preliminary survey, it was clear that the representivity, attendance, level and kind of participation was not going to be free and unbiased due to certain political factors that were prevailing as a result of party politics. The members of two political parties, namely the United Democratic Movement and the African National Congress, were in conflict with each other. This situation led to a rethink of the approach and it was decided not to pursue the rich picture technique, as this would have required the participants to be gathered together in a workshop setting. The authors therefore decided to use only semi-structured and random interviews and observations. These interviews were targeted at all the identified stakeholders. The authors had to use varying styles of questioning, depending on the calibre and level of understanding about the telecentre concept of the interviewee. Critical Systems Heuristic (CSH) approach proved to be of great help in explicating the views of the stakeholders.

3.1. Critical Systems Heuristics

Critical Systems Heuristics (CSH) was developed by Ulrich (1983, 1996). Ulrich is highly critical of the “monopoly of knowledge and power” inherent in the expert and technocratic driven social planning. He asserts that including ordinary people in the intervention process and giving them a voice is not good enough. The voices must be made “competent”. He proposes an ideal, which advocates that “citizens become *citizen-planners* and planners should see themselves as *planner-citizens*”.

The core concept in CSH is the notion of Boundary Judgements and how this relates to promoting improvement. According to Ulrich all plans for improvement depend on assumptions about what facts and values are to be considered and what is to be left out. In other words determining the system of concern or the “context of application”. Ulrich calls these boundary judgements or justification break-offs because they define the boundaries of the planning effort and the point at which justification ends. In a pragmatic situation such as planning for improvement holism without boundary judgements leads to endless options for understanding improvement.

Table 2. List of identified stakeholders and their nature of involvement

Stakeholder	Reason / Nature of involvement
1. School children	1. Information searching on internet
2. Young and old people	2. Post office services, telephone use
3. Disabled people	3. Uneasy access to services
4. Illiterate people / uneducated people	4. Cannot make full use of the telecentre
5. People with different political ideas	5. Do not feel represented
6. School teachers	6. Computer literacy improvement, faxing and phoning
7. Community leaders / Traditional leaders	7. Information dissemination
8. Security services	8. Provision of security to the centre
9. Farmers	9. Research and funding
10. Government spheres (Provincial and Local – municipality)	10. Research
	<ul style="list-style-type: none"> • Potential funding • Service provision (salaries, office, equipment, rentals, telephone, information, etc.) <ul style="list-style-type: none"> ▪ Management of the centre ▪ Infrastructure –building ▪ Infrastructure –renovations ▪ Renovation of site ▪ Training
	11. Service provision (salaries, office equipment, rentals, telephone, information, etc.)
	12. Technical advice and expertise
11. Parastatals	13
	<ul style="list-style-type: none"> ▪ Research ▪ Technical advice and expertise ▪ Services and first level support
12. NGOs	
13. Tertiary Institutions	14. Technical advice and expertise
	<ul style="list-style-type: none"> ▪ Nature of involvement differs from company to company ▪ Potential for funding
14. Business sector	
15. International Agencies	15. Technical advice & expertise and Research

In order to empower the practitioners of CSH with some methodological rigor Ulrich proffers a conceptual framework that hinges on a set of twelve boundary judgements related to the sources of human intentionality that determine the meaning of improvement. An implicit belief in the planning of the evaluation of the telecentre is that ultimately it is the people that are most important - more important than the telecentre itself. A similar belief is expressed in CSH: "It is people on whom the meaning of improvement depends first of all, for they possess the sense of purposefulness, the power, knowledge and sense of responsibility that together determine *what ought to count as improvement*" (Ulrich, 1996: 20).

The twelve boundary questions are arranged in four groups of three questions each. The first question in each group is related to a social role e.g. who ought to be the plan's client? The second question relates to role specific concerns e.g. what ought to be the plan's purpose? The third to the problem of dealing with the conflicting concerns that are part of social reality e.g. what ought to be the underlying measure of improvement? (Ulrich, 1996: 24-31).

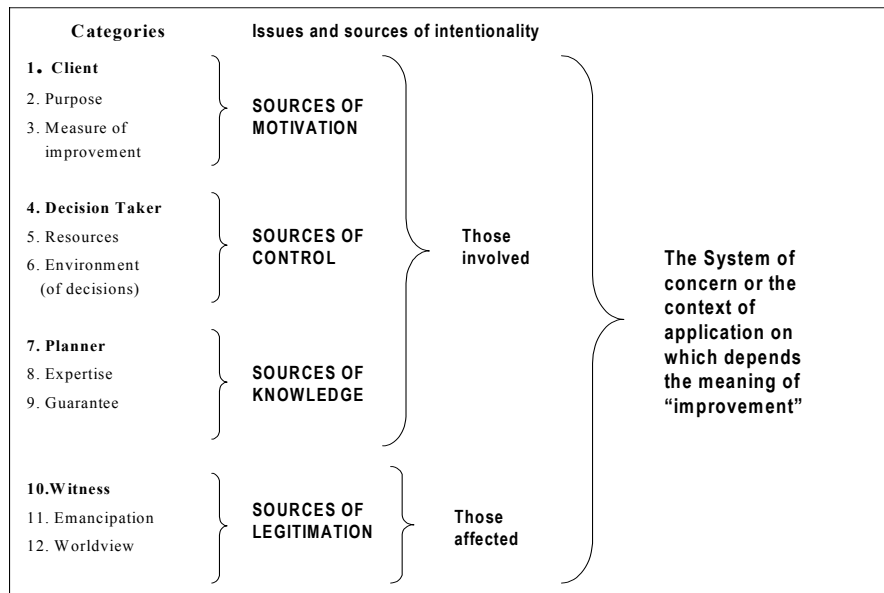


Figure 1. An overview of critically heuristic categories (Ulrich 1983: 258)

A salient feature in applying the boundary questions is the use of the ‘ought’ mode and the ‘is’ mode to the set of generic questions, for example, who ought to be the decision maker compared to who is the decision maker. This is similar in concept to analysing what should be the vision and how this fits in with current reality. It is this mode of questioning that unlocks the critical power and drives the processes of unfolding a plan’s normative and empirical content.

The questions that were asked of the people were adapted from the twelve critically heuristic boundary questions that support the stakeholder analysis as shown below (adopted from the ‘is’ mode by Ulrich (1983,1996):

- Who *is* the actual client of the telecentre? i.e. “who belongs to the group of those whose aims are served, in distinction to those who do not benefit but may have to bear the costs or other disadvantages?”
- What *is* the actual purpose of the telecentre “as being measured not in terms of declared intentions of the involved but in terms of the actual consequence?”
- What, judged by the telecentre’s consequences, *is* its built-in measure of success?
- In the telecentre who *is* the decision taker?
- Who *is* the planner of the telecentre?
- Who *is* the expert in what?
- Who *is* the funder of the telecentre?

Before the authors could go around the community to conduct the research they had to first meet with the Traditional Chief of Tombo. In this meeting the chief was casually interviewed to determine his views and also what his perceptions were on the views of the community regarding the MPCC and the telecentre within it. A local language which is a dialect of Xhosa was used during all these interviews so as to eliminate the language barrier when the participants were expressing themselves during the interviews. Table 3 provides a list of the stakeholder representatives who were interviewed.

Table 3. Stakeholder representatives who were interviewed

Observations were done and the following stakeholder representatives were interviewed:

Municipal Manager.
 Telecentre co-ordinator.
 Members of the Community based Organisation members (CBO) (two of them).
 Nearby school Principal.
 5 students of about 15 and 16 years of age; some go to the nearby school and others at other schools.
 Teacher at the nearby school who lives in Umtata (about 100 kilometres away).
 The Village Chief (Chief Langa).
 Women who do cleaning at the telecentre.
 Regional Manager of GCIS in East London.
 2 youths who had come from another village to use the centre.
 4 people from other villages about 5, 10, 15 kilometres away from Tombo where the centre is situated.
 A man of about 65 years of age from the village.
 2 men together: one about early 40s and another about early 50s who worked in East London.

Observations were conducted from morning until late at night, by the authors for one day. Other observations over a period of four months had also been done to monitor the use of the centre while the staff and users of the centre were unaware of such observations.

These observations were done both outside and inside the centre. Inside the centre the permission was sought from the telecentre co-ordinator to do observations and have a casual talk with the people (users of the centre) who were visiting periodically. In this case only the telecentre co-ordinator was aware of the observations. The reason for doing the observations in this research was to make sure that first-hand information was gathered about social processes in their naturally occurring context. This information helped the researchers to establish what people were doing at the telecentre rather than what they thought they were doing. By combining both the interviews and observations it was possible to compare what people were saying happens at the centre with what was actually happening.

The results of the observations are presented by reporting in a chronological order what was observed over time. In this research summarising or paraphrasing answers was avoided as it was thought that it would result to loss of information or distortion of answers. Also, most of the interviews were recorded on an audio-tape and are available on request in the language (Xhosa version spoken in the Pondo regions) in which the interviews were conducted. All of these interviews were face-to-face interviews conducted in a semi-structured fashion. The advantage of the face-to-face interview is that complex questions can be asked and probing questions can be used in the case where the initial one was not answered clearly or not answered at all. However, the disadvantage with face-to-face interviews is that the costs are high as others could be living in far away places and the interviewer may influence the interviewee by means of his/her appearance, tone of voice, wording of question, etc. The authors were mindful of these possibilities during the interviews and avoided them as much as possible.

In cases where it was felt that after the interview more information was still needed about a certain view by the participant which was not clearly captured during the interview, follow-up interviews were again conducted sometimes telephonically for the second time. This was done just to gain clarity on certain issues. In cases where the participants did not want to be recorded, notes were taken and confirmed with the participant by repeating the answers as understood by the interviewer.

4 PERCEPTIONS OF THE STAKEHOLDERS ABOUT THE TELECENTRE

We found that only a few of the participants knew what was exactly happening in the telecentre. Some people from the community only knew about the post office services that were taking place at the telecentre and very few knew about the faxing services and the fact that there are computers as well. It should be noted, however, that the authors tended to concentrate more on the silent and standard stakeholders and not so much on the fiduciary stakeholders. The reason was that in this research the aim was to assess the impact and implications of the telecentre in the community, rather than getting the opinions of those who were directly involved in the process from the beginning and who would have given subjective answers.

Of the thirty one (31) participants that were interviewed, 23 were from the community and eight (8) had either a direct or indirect involvement in the telecentre. Of the 23 participants some were interviewed in groups (jointly). Before asking about the perception of the people with regards to the telecentre, the authors had to first find out if the participants knew about the telecentre. Efforts were made to clarify the questions so that the participants could understand what was being asked. A high percentage of the participants (especially the youth at the school-going age) did not even know what is meant by Internet and e-mail, let alone its availability in the centre. They were asked also if internet and e-mail were at least available in the telecentre and they all did not know. Table 4 gives a summary of the findings.

Table 4 Tabulation of the findings

Number of participants from community	Knowledge about the centre	Knowledge about the availability of Internet/e-mail at the centre
23 (15 –65 years of age ,males and females)	8 FP 4P 1F Total = 13	5

F – knowledge about the faxing services; P – knowledge about the postal services; FP- knowledge about both F and P

Table 4 shows that more people know about the telecentre and the two services, namely faxing and postal services, than they know about the computers and internet. Some people did not know anything. Hence, only 18 gave answers.

Here are two possible reasons for this:

- When the MPCC was launched in 1999 the Internet was not functioning until around March 2002. Some indicated that they did not know that Internet was now working, as they last heard that it was not working.
- In the telecentre the room with computers is separate from the one where there is a fax machine and where the postal services are provided. Unless one goes to the other room, one will not know about its existence. Although there are signs on the wall about the availability of computers for word processing, Internet and e-mail, it could be that people do not notice them.

Some participants complained that the unavailability of electricity was one of the de-motivating factors. There was an indication that some children do not get financial support from their parents to use the facilities of the centre because of political reasons. The authors did not have time to test the validity of such statements. There was a complaint about corruption in the centre and the lack of security in the village. Once again, these statements could not be proved as to whether or not they were valid because of time and financial constraints.

A different set of questions was used with the participants that were either directly or indirectly involved in the telecentre. The researchers felt that it was not going to make sense to ask them questions like, “Do you know about the telecentre and what it is used for?” The purpose was to confirm some of the views and understanding by the community members. Another purpose was to ask the questions that could not be answered by the general members of the community. Finally, the authors also wanted to find out about the thinking of those involved in the telecentre in terms of the role they see the telecentre playing in the near future as well other views that they had about the impacts and implications of telecentres. As already indicated, a small sample size was deliberately selected because of time and budget constraints and most importantly because this research was aimed

at establishing and seeing the impact and implications of the telecentre through the eyes of the community members rather than those of the people who are involved in its the day-to-day running.

5. CONCLUSION AND RECOMMENDATIONS

A telecentre that is situated at a place where there are no businesses that can support it in terms of making use of its services such as photocopying and Internet services, is likely to fail. This is clearly seen at one stand-alone telecentre in Ndevana. This telecentre is situated next to a clinic, but this did not ensure enough publicity about it, because many people even within a one kilometre radius did not know about it. Also, a clinic itself cannot bring much support to a telecentre other than make it known to those who use the clinic. A stand-alone telecentre has a problem of being unknown by its potential users, who are usually quite a distance away from it. In the case of the Tombo telecentre that served as a case study, the telecentre is situated within the MPCC. The MPCC has a community hall, amongst other things, that attract people. While people are at the MPCC, they get to know about the telecentre. As already indicated, people from other organisations within the MPCC make use of the services of the MPCC.

When the Tombo telecentre was not fully functional, the Tombo Entrepreneurial Development Corporation (TEDC) assisted it by employing an entrepreneurial approach. The conclusion here is that when there is no element of entrepreneurship and innovation, the sustainability of a telecentre is in jeopardy. This statement is supported by the literature that was reviewed and the investigations done in this research.

Not enough people know about the Tombo telecentre. Any organisation that is not well advertised and that is unknown to its clients is bound to have problems with respect to being sustainable. It is therefore clear that it was not going to be easy for the members of the community to be entrepreneurial and innovative when they did not even know about the telecentre and its potential. Therefore the Tombo telecentre did not deploy enough publicity about the telecentre and all its functions. On a practical level, not all the relevant stakeholders were involved in the planning for the establishment of the telecentre. If the members of the community who are stakeholders did not know about the telecentre, as the findings indicate, it would not have been possible for them to dedicate themselves to using and sustaining the telecentre.

People should be made aware of the benefits of new technology; even if it means that at the beginning of the process more money must be spent on advertising and promotion. All the scepticism that may exist with the people about the technology needs to be dealt with. These can be achieved through rigorous awareness campaigns, especially when these technologies are still new.

Training of stakeholders with new technology is vital for ensuring success of telecentres. This training has to take place well before the new technology is launched, so as not to delay optimal utilisation. Equipment becomes outdated and therefore needs to be used effectively before this occurs. In the Tombo telecentre, training programmes were provided to the staff, but they were not sufficient. The training that the stakeholders get must not only be on the use of the new technology, but on management or business aspects as well.

The entrepreneurial spirit or approach must be encouraged in the process of trying to make the telecentres sustainable and successful as businesses. The research has found that without innovation, telecentres will not be successful, as was the case in Tombo before the TEDC intervened with its innovative ways. The community members themselves have to be taught some business skills so that the telecentre can be cost-effective. For telecentres to remain functioning they need to generate income that is enough for their sustainability and improvement.

The stakeholder analysis exercise elucidated that not all categories of stakeholders had been taken into account from the beginning of the process of introducing communications technology. Sensitivity to the feelings of the community must be managed, especially in underdeveloped communities. Special attention must be paid particularly to Standard, Fiduciary and Silent stakeholders. The inclusion of stakeholders from all categories during planning is an important factor for the success and sustainability of the telecentres, given the socioeconomic conditions in the rural areas of South Africa.

The CSH approach was particularly useful in establishing why the telecentre initiative was not doing as well as it had been envisaged. The CSH approach revealed that the stakeholders were not really clear about who was supposed to do what. It was also clear that when using the CSH approach, it is better to employ it from the planning stage of the telecentres. This way it can be implemented fully, using the “is” and the “ought” modes together. This will help ameliorate most of the problems, such as exclusion of certain stakeholders, before they even surface.

Perhaps, there should also be studies that seek to find ways and means by which technology can be successfully transferred to the indigenous people, by recognising that there is already a wealth of indigenous knowledge (IK) that this technology could be linked up with, not only for enhancing new technologies, but also for ensuring sustainability. Information Communication Technologies (ICTs) could be the best place to start these studies.

Finally, this research not only contributes to societal development but also to the field of rural telecommunications at large. At the moment there is a big gap between the information ‘haves’ and ‘have nots’, due to the reasons identified in this case study. This evaluation research, using stakeholder analysis and critical systems heuristics, is believed to have contributed towards the development of a system for bridging that gap. Moreover, the telecentre impact and stakeholders’ perceptions, were assessed and recommendations made from the outcomes of the study.

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