Telecentres: Islands in a Sea of Information with no Ship in Sight

Maxwell M Buthelezi

Sam Lubbe

Rembrandt Klopper

Abstract

The aim with this article is to report the results of research about how Telecentres could be used to support conventional education delivery in higher education as well as in public secondary school education. The researchers primarily focus on the possible use of Telecentres in higher education settings, but the conclusions made equally pertain to the use of Telecentres as part of the electronic education (e-Education) framework for public schools in KwaZulu-Natal. This study forms part of a coordinated research programme on e-Education conducted by the School of Information Systems & Technology at the University of KwaZulu-Natal.

Despite the difficulties around the use of Telecentres reported here, such facilities could contribute towards integrated knowledge sharing in academic institutions. The results reported here reveal opportunities to transform chalk-and-talk delivery into electronic education (e-Education). A major finding is that students from disadvantaged communities feel there is a need for Telecentres in their communities to enhance conventional forms of education delivery and to extend their interactions with their lecturers.

Introduction

Latchem (2001) argues that technology can be used to disseminate course materials to students in remote locations in order to reduce their feelings of isolation, and in the process create virtual learning communities. Telecentres provide one means of contact between lecturers and

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students to establish and maintain such virtual learning communities. We want to stress from the outset that we do not propose the use of Telecentres as the all-cure for problems of robust and affordable education delivery. They can only form a part of a range of electronic delivery strategies. There obviously will be limitations to how Telecentres can form part of electronic education delivery. Once established, this mode of delivery may however be economical and convenient. Access to electronic modes of education delivery remains a real problem in Africa, including South Africa.

Indicators of development in the knowledge-based digital world (namely levels of literacy, newspaper readerships, the use of radios, television sets, telephones and *per capita* access to computers) show that Africa is not doing well at present. The patterns of availability of these instruments and tools for knowledge creation, and information sharing are also unfortunately not evenly distributed among the urban and rural populations in South Africa. A study was therefore conducted at the University of KwaZulu-Natal among the staff and students of the School of Information Systems and Technology (IS&T) to establish their perceptions about how useful Telecentres would be to complement conventional forms of learning.

Literature Review

Benjamin and Dahms (1999a) state that the Information Revolution has increased information access around the globe, but that questions need to be answered regarding who has access to these technologies. Connection to global information networks and services impacts on almost all aspects of societies, including education, employment, health care and business. The question is however: Will these technologies and systems lead to increasing disparities between the connected Information Elite and the Information Starved, or can these systems be used to support widespread development and contribute to the development of a more just society?

In 1996 only five African countries had Internet capability; today all are connected and internet-enabled. This new age variously labelled as the Computer Age, the Internet Age, or the Information Age, could ensure that knowledge becomes accessible by more than the conventional methods. In Africa Internet access however, has translated into a digital divide of which the contours appear to trace earlier demarcations of rich and poor societies, and of developed and developing countries (Borja, 1999).

According to Emmanuelle (2001), Telecentres have a potential for narrowing the digital divide in remote, rural and otherwise disadvantaged communities. They could be useful in helping developing countries to take advantage of the information economy, access to education, to government information, to healthcare and other social services.

Current Education, Internet Access and Connectivity

INASP (2003) notes that with wider Internet connectivity, educational institutions in developing countries are beginning to tap the opportunities offered by more mature information societies. These digital connections act as gateways where researchers and librarians find, download and share knowledge and learning materials. They also provide platforms from which local research is published, disseminated and uploaded, and they facilitate links and collaboration among scientists, promoting discourse and dialogue on shared issues and problems. However, the same connectivity also supports applications and behaviours that consume bandwidth. Typical solutions are to upgrade infrastructure, to install faster, larger, and higher performing systems, lines and facilities.

Previous projects and telematic experiments have provided experience in the integration of computer technologies and networks for distance delivery of courses. Live satellite TV transmissions, for example, exploit the quality of audio and video content appropriate to be re-

ceived at a distance and digital quality ensures open pictures within the beam coverage of the satellite transmission.

A decade ago Renner (1995) warned that unless universities come to grips with new modes of electronic education delivery, they would in the next decade face the prospect of a diminishing role in education or even extinction as knowledge providers.

Six years ago Grodzinsky (1999) predicted that convergence opportunities in electronic information delivery would stimulate Universities to rethink their educational priorities. For example, conventional forms of communication between lecturers and students via ordinary mail, telephonic communication can easily be enhanced by more economical forms of computer mediated communication like electronic mail, the dissemination of pre-recorded audio and video content, ISDN-based videoconferencing and Internet-based telephony, or by emerging and converging forms of knowledge dissemination like blogging (web-logging) and vlogging (video-blogging).

Increasingly, also South African universities will be pressured to give budget precedence to electronic delivery systems. Students, even those close to university campuses, will be able to complete portions of their degrees through electronic access. In future, lecturers could become as familiar with their students from screen images as from face-to-face contact. The multi-media interactive communication centre of an institution could form the hub of campus activities. Students world-wide will be able to enrol and study at the university of their choice via global multi-media highways. Virtual alliances between universities in enriched societies and those in developing societies could enrich both types of institutions. Since these changes are already being implemented outside of academia, South African universities should reconsider their established policies and practices of educational delivery that limit them to localised education delivery in line with changes that higher education institutions abroad adopted more than a decade ago:

i. Such institutions implemented interactive technologies for economic, social, industrial and educational development (Oliver and Grant, 1994).

ii. Lecturers abroad had to become more technologically literate, more aware of the non-neutral nature of technology, better skilled in the use of emergent and convergent communication systems, more willing to use innovative communication systems, and less inclined to be content with established educational practices (Beynon, 1993).

Telematic communications is a good example of innovative knowledge delivery. Wheeler (1997) describes the term 'Telematics' as the convergence of a number of technologies to enable computer mediated communications. This technological convergence has come about due to the increasing miniaturization of electronic components, which makes possible Telecentres equipped with a variety of electronic communication instruments.

Implementation, Policies and Regulatory Issues

Telecentres have recently become the focus of attention in international development discourses, hailed as the solution to development problems by providing desperately needed access to information and communication technologies (ICTs). Telecentres are springing up in Africa, Latin America and Asia. Avenues for new research are suggested in order to foster greater understanding of the role of ICTs in international development of many sectors and different aspects of life (Gomez and Menou, 1999).

McConnell *et al.* (2004) argue that Multi-Purpose Communication Centres provide people with opportunities to acquire information and literacy skills to maximize their learning opportunities. However, Telecentres should not be seen as a panacea to social or economic problems. Telecentres must be designed according to established needs, sound business planning and realistic expectations of what can be achieved within a certain timeframe.

According to Etta (2003) the Telecentre movement on the African continent is still young. The earliest community Telecentres are estimated to have opened their doors in 1998. The nature and functions of African Telecentres vary slightly from country to country. The costs of developing and implementing national information policies will depend on the specific situation of each country. The two proposals for national action draw mainly on existing resources and capacity and can probably be implemented upon adoption without external assistance (Mfaye, 1998).

Ladikpo (2002) states that in developing countries the emphasis is often on infrastructure policy development, while dimensions of human resource development and information-content issues are neglected. Maintaining an integrated approach in ICT for development interventions is essential to ensure that the overall goals are achieved for empowering communities, improving people's quality of life, and creating more equal, open societies in the region. Often, in a developing country, the focus is on the infrastructure development dimension of policy, while dimensions that relate to the development of human resource capacity, and to the production, exchange and dissemination of information content needs some attention.

Support and Benefits of Higher Education

Collings (1999) emphasises that the use of ICT in education development and delivery is vital if universities are to achieve competitive success in the international market for higher education. Moeng (2004) notes that education for all is only possible through a new education delivery paradigm, the so called e-Campus initiative.

Benjamin and Dahms (1999b) argue that education can benefit from telecommunications. While tele-Education and using the Internet for teaching is of advantage in well-resourced areas, basic telephone use is useful in schools for support purposes. One example of the use of telecommunications in education is the Monterrey Institute of Technology in Mexico. They use satellite-delivered compressed video

to reach 26 campuses nationally, allowing one lecturer to reach 2 000 students. Adequate telecommunications can also reduce the need for travelling to find information.

Sayed (2004) notes that free, adaptable open source software, such as Linux, allows developing countries to implement affordable information communication solutions. His comments are timely becuase they coincide with a heated debate in Africa following the South African government's acceptance in 2003 of free Microsoft software for use in its schools. Sayed notes that the government's agreement is at odds with its own Advisory Council on Innovation (NACI) recommendation that open source software has the potential to empower people in many ways that proprietary software simply does not allow.

The digital convergence of ICTs has lessened two interrelated obstacles to education, namely poor regional access to high quality resources and the effect of long distances from high quality resources. Cheaper, more rapid, and a varied means of communicating amounts of information through the Internet, among other networks, is creating a world in which there is far greater access to information than ever before. ICT is making access to information symmetrical because people have access to more information whenever and wherever they need it. This is disrupting established educational relations. The effect will be profound changes in the structure of markets and organizations and established patterns of economic behaviour. While much attention has surrounded the volatile new world of the dotcoms, this is a distraction: the true potential of ICT will transform the education system (Collins, 1999).

Perraton (2002) points out that distance education has particular strengths when it is used to support extension agents so that a multiplier effect comes into play. In many cases its modest costs are matched by modest success, however, poor completion and pass rates mean that costs per successful student tend to compare less favourably with conventional alternatives. Distance education offers learners freedom in what, when, where and how they learn, but many first-time dis-

tance learners do not know how to deal with this responsibility. Staff should help learners cope with the technology, point out useful resources, encourage the formation of self-help groups and interaction with online teachers, tutors or trainers (Gómez and Hunt, 1999).

Latchem and Walker (2001) state that Telecentres or telecottages are helping those at the margins of the knowledge economy gain and apply new understandings and skills. Telecentres may be seen as a socially responsive example of think global, act local. With an ever-growing dependence on technology, there is a danger of ever-increasing disparity in access to education, training, information, and employment opportunities. Telecentres can act as an equalizer, allowing the disadvantaged to log onto a world of opportunity.

Telecentres as a Service Base

According to the Digital Dividend Clearinghouse (2001), smaller Telecentres usually include basic Internet service, and many also include access to fax, phone, and photocopying. Others may include targeted services in education and training, health, e-Commerce, e-Government services, etc. The physical compositions of Telecentres vary. Models include kiosks, school computer labs made available to the public after hours, multipurpose community centres (MPCCs), and mobile Telecentres. Regardless of the different configurations, Telecentres all have one common feature: they use IT to provide a range of services using a shared access model.

Pieterse (2004) states that the primary service objective of Telecentres is to create public telephone access and to then to introduce a range of other services dependent on the telephone line backbone, such as fax, e-mail, and Internet access. A very basic Internet-based Telecentre consists of a furnished room with 3 or more computer terminals and simple furnishings that provide shared access to the Internet and computer services to the public at large. Urban Telecentres, commonly known as cyber cafés, are profitable in many parts of the world, and are quite sustainable. They provide connectivity to a large segment of

the population, especially to poor people who cannot afford individual access. Telecentres are about to give people a voice, a set of tools to learn and improve their wellbeing, to organise themselves, to become innovators and full participants in modern society (Proenza, 2004).

Hanna (2004) stresses that we should primarily consider Telecentres to be learning environments, and not simply technological solutions to communication problems. He names the following roles for Telecentres:

- Providing a means of transacting and connecting;
- Serving as tools for governments to provide services via the Net (especially to poor and rural regions);
- Providing information and knowledge for competitiveness and economies; and
- Enabling community driven development at grassroots level.

Whyte (1999) argues that Telecentres respond to the ICT needs of the communities they serve. Isis International-Manila (2002) notes that even Telecentre projects that tend to be community focused, gender equity is not an integral part of the planning equation.

Fuchs (1998) has identified three stages of Telecentre development, namely the investment, contract and user fee stages.

The investment stage is the initial stage where a non-profit making organization forms a partnership with a local community, attempting to help the community by encouraging them to participate in the information society. At this stage the organisation finances the information technology initiatives, provides equipment and training for local partners, key persons and staff, as a way of demonstrating the practical utility of information.

In the contract stage the Telecentre gains autonomy from the parent organizations and starts to make contractual agreements with other agencies such as government departments or other organizations e.g.

hospitals or schools building up a clientele to which it provides services as well as technical support in the setting up of their facilities.

By the time the Telecentre gets to the user fee stage donor dependency is a thing of the past, since by this time the communities are well aware of the products and benefits of the Telecentre and are therefore willing to pay for services

Oestmann and Dymond (1997) point out that there is scope for exploring new models of Telecentre ownership and financing, and interest in doing that is growing among private-sector ICT providers. Only economically successful models are likely to replicate themselves in larger numbers and spread the benefits beyond single locations.

Fuchs (1998) raises the point that Telecentres range in size and description and services. Assisted by a group of international development agencies, Fuchs took a closer look at a Telecentre operating as part of a Multi-Purpose Community Centre at Nakeseke in Uganda. The centre housed a public telephone and fax, networked computers and a community library. Typically, one could see a primary school pupil poring over a large dictionary, an older student using a book on sustainable agriculture for a school paper, and community volunteers practicing a computer program that they would later on teach to others.

A Telecentre could serve as stimulus for further community development. Benjamin and Dahms (1999b) recount the development of one such centre in South Africa, the Gaseleka Centre in Gauteng Province. Initially it only offered access to equipment. Soon after the the Gaseleka Telecentre opened, a new government funded Reconstruction and Development Program (RDP) housing project was built nearby. This brought 300 families in close proximity to the Telecentre, making it the *de facto* community centre, a place to hang out and chat. Because there was no post office in the area, the Telecentre in 2000 successfully applied to become a postal service point. A bank of 1,000 post boxes was installed next to the Telecentre, which most families regularly visit to check the post. The centre has meanwhile developed various other services as the need and opportunity arose. Most of the peo-

ple use the centre to make phone calls, as it is just about the only usable pay phone in the area. Soon people started using the centre to send faxes and do photocopying. The local schools have become major users, for preparing and reproducing curricula, question papers and report cards on the computers. Computer training has become another major activity in the centre.

Library and Information Services for Distance Education

Longo (2001) acknowledges that creating, acquiring, and managing information have emerged as the central focus of the digital economy. Creating and sharing information are the basis of social relationships within specific virtual communities. This set up a long-term challenge for every library or information centre as well as for every professional involved in publishing and education. In his opinion the most promising road today is that of helping people develop their own cognitive abilities, understand their own needs, and learn how to express them correctly.

. Lennon (2002) states that the Library and Information Science Program cultivates the skills needed to prepare information professionals to manage and evaluate information effectively. Students will be engaged in a student-centred learning environment that focuses on both practice and theory-based principles that prepare them to be critical consumers. They participate in research, build relationships and model the behaviours needed to effectively provide service to their communities, meet the needs of underserved groups, and provide information services in a changing society.

Training for Telecentre Usage

Fuchs (1998) observes that as Telecentres have to operate with tight budgets and under difficult circumstances, partnerships with public, private and community organizations are often the most beneficial and sustainable. Hudson (1999) proposes that each Telecentre should build in mechanisms that can be used to gauge how well the project is progressing, to provide feedback to partners.

Collee and Roman (2001) note that computers are no longer strange and mysterious machines to many users in different communities. The Telecentre has demystified computer communications through training programs. A large number of community members have been trained in computer communication services at the Telecentre, which led to the growth of a core group of skilled people within the local community. Management systems have been tried and established for sustainable Telecentre operations. The industry as a whole should look at bringing in more black people to the workforce, ensuring better skills development and human resource (McLeod, 2004).

Courses on computer applications can be conducted at Telecentres in collaboration with a university. Some of the courses could lead up to the awarding of certificates to successful trainees, while the others could be run as continuing education courses.

Telecentre Management

A Telecentre is a community owned and non-profit organization, while the Management Committee is made up of elected Telecentre members. Their role is to represent the Telecentre in the community, to present the needs and views of the community, to provide a forum for new initiatives and to act as a board of review. A manager and several part time staff operate the Telecentre on a daily basis. Community members are encouraged to register their skills in a community skills register, should business opportunities arise (Lamshed *et al.*, 2004).

Telecentres as a Sole Mode of Computer Access

The NAMI Organization (2004) argues that most learners expect to improve their work performance, prospects, or opportunities for further learning. Telecentres can assist by advertising jobs and courses, arranging for work experience opportunities, and by encouraging ICT-based enterprise or teleworking. Common applications are word processing, desktop publishing and printing, Web and multi media design, software development, abstracting, editing and proofreading.

People visit these centres with different goals in mind and they expect quality service during their visits. Some people prefer to use newsgroups electronically, whereby they can exchange views, questions and answers with other people joined to that group.

Stoll (2000) indicates that most of the information on the Internet is accessible to anyone with a computer and a modem. Even those without hardware can go to a Netcafe or a public library to access the Net. Newsgroups and Chat rooms where people exchange ideas have different status.

Stoll (2000) argues that global distribution of information mirrors the distribution of wealth. One could use the analogy of the hierarchal pyramid to describe the structure of public accessibility as a broad base of publicly accessible information with tapering sides representing levels of increasing restriction on who may access them. The sheer volume of information, even after selective measures, constitutes information overload.

The results show that Telecentres contribute in improving the current learning system. Nearly all of the respondents argue that Telecentres will improve the standards of information access. Information could be delivered through Telecentres, which may be referred to as knowledge. Telecentres could help present facilities together into one organized centre and be divided into various sections and different service categories. The findings indicate that people are in support of taking education to reach heights with Telecentre technologies as new and efficient tool to obtain, share, circulate and utilize that information accordingly.

Planning, Ownership and Telecentre Sustainability

Collee and Roman (2001) note that the initiation, diffusion and adoption of the Telecentre idea have been an eclectic process, largely devoid of systematic research and planning. The approach has generally been one of pilot projects — trying out models to see what works to achieve a diversity of objectives. In some cases the approach has

been simply entrepreneurial, with enterprising business people exploring opportunities for profit-making. A range of issues is linked to the operation and success of Telecentres. These include: sustainability, relevance, government policy, information and communication technology (ICT policies), research, community partnerships and participation, Telecentre objectives, and business planning.

Karelse and Sylla (2000) state that despite the recentness of the movement and the relative paucity of Telecentre research, some issues emerge in the available literature as pertinent. The factors commonly associated with sustainability include the operating environment, ownership and management styles, community participation, relevance of services and content.

Stoll (2000) states that despite the fact that every possible due care being taken, after only a short period of operation, Telecentres usually encounter the same problems as other IT based projects in a particular region. Management must therefore be able to offer a total solution that also takes training needs into account (Falkenberg, 2004).

Howard (1999) notes that there have been far too many examples in South Africa of Internet cafés having to shut their doors because they were non-viable. The Telecentre must therefore levy appropriate charges for usage and, unless these can be subsidised in some way by institutions or organizations, the users must have capacity to pay.

Menou (1999) and Gomez, and Menou (1999), note that there are other factors that affect the success of Telecentres. They operate at the micro and macro socio-political levels and include such aspects as the national policy environment and the social arrangements for the control and management of facilities. In the late 90's the move to create new policy instruments that would support growth in the sector on a continent-wide scale commenced with the Africa Information Society Initiative and Africa Development Forum. The moderate harvest of new national information and communication infrastructure plans in about a third of the countries is testimony that things are indeed changing. Community ownership is also believed to be related to success,

but models of true ownership are rare as most of the Telecentres with a community label are not genuinely owned or fully administered the communities.

Heeks *et al.* (2005) point out that financial sustainability is the first thing that comes to mind, and Telecentres should aim to be financially sustainable if possible from day one of their operation. Financial sustainability of a Telecentre is seen as crucial, and many Telecentres base their business model on the provision of ICT and related services to their respective communities.

Murrugarra (2004) feels that many initiatives and models have been tried and tested, and that success stories have emerged. The global Telecentre movement still seems to be out of its grasp, the sustainability of Telecentres. Telecentres of all kinds (commonly known as MPCCs) are in fact not sustainable in the long term without long-term outside funding. There are some remarkable examples emerging that show that the real sustainability of Telecentres is indeed possible if some basic principles and rules are followed in the implementation and running of a Telecentre.

This section investigated general issues regarding the sustainable use of Telecentres. The next section elaborates on the techniques and methods to be used by the researchers in conducting this study.

Telecentre Sustainability and e-Readiness

The concept *e-Readiness* relates to how skilled and willing societies, regions, communities and institutions are to utilise information communication technologies (ICTs) to access and utilise global electronic resources for business, education, health, government, and leisure activities.

Bridges.org (2005) discusses e-Readiness tools that can help establish the level of preparedness of participants in the global knowledge economy.

Research Methodology

The results reported here are based on a quantitative research methodology. According to Hopkins (2000) quantitative research designs are either descriptive (subjects usually measured once) or experimental (subjects measured before and after a treatment). A descriptive study establishes only associations between variables. For an accurate estimate of the relationship between variables, a descriptive study usually needs a sample of hundreds or even thousands of subjects. The respondents in this survey were handed the research questionnaires to complete, and by so doing, the respondents had freedom to answer any question the way they understood and felt and ensure a better return rate. The questionnaires consisted of two types of questions, viz.:

1. **Closed ended questions**, and in these types of questions the participants were answering questions by giving Yes/No or scaled responses.
2. **Open ended questions**, with these types of questions, the respondents had to answer questions in any way they understood and felt. The purpose of this is to obtain the imaginary understanding of the participant about the topic.

Questionnaire Design Instrumentation

The questionnaire was divided into the following subsections:

1. Questions 1 –5 were used to collect demographic data;
2. Questions 6 -- 14 were used to collect data about the respondents' capabilities on computer usage; and
3. Questions 15 – 19 were used to collect data on opinions of the respondents about Telecentres.

The researchers entered and analysed the data on SPSS 11.5 since it provided appropriate analytical tools for this study.

Discussion of Results

Demographics

This section is based on the analysis, discussions and interpretation of the data that was collected and gathered from 60 respondents, conveniently selected from among the IS&T undergraduate students on the Westville campus of UKZN at open access student local area networks (LANs).

The findings reveal that 53% of the respondents were female, and that the perceptions of female computer users are therefore adequately represented in this study. Isis International-Manila (2002) notes from a gender perspective that, Telecentre projects must make an active effort to consider the disparate needs of women and men in the communities they serve. Because of disparate literacy levels and language, it may be necessary to develop different training curriculum for different user groups. Unfortunately, and as in other areas, women and girls tend to benefit marginally from developments in telecommunications and access to services, particularly in the initial planning and implementation stages. Even in Telecentre projects, which tend to be community-focused and are supposedly more aware of community needs, gender is not an integral part of the planning equation.

The statistics reflected that the more accessible participants have been the Africans (or rather Blacks) who spend most of their time using the free on-campus resources because they tend not to privately subscribe to these at home. Based on the findings, African respondents constitute 67% of the sample, followed by Indians (18%), Coloureds (8%) and Whites (7%).

Latchem (2001) states that it is vital to ensure that learning and information are available to all, regardless of user circumstances. Telecentres can provide people with information and literacy skills to

maximize their learning opportunities. However, Telecentres should not be seen as a quick solution to every social or economic problem. Telecentres are essentially about linking resources, knowledge and people without physical proximity. Telecentre support for distance learning will be effective where they are connected in a unified, coherent and innovative national or regional system for educational and social reform.

The dominant age group among the respondent was 20-29. This age group positively correlates with the undergraduate level of education. Finally, the least represented age group in the sample is older students. A fair number of older students are already actively employed, and mostly have access to ICTs at work. One would therefore expect fewer of them to use open access student LANs Even though the researchers had the intentions of involving other older groups of 40 years and above, they could not find anyone of this age.

Pieterse (2004) notes that by providing high speed internet service, teacher training and high quality, commercial free educational television programming, broadband access will particularly enable younger students to explore and understand the world they live in. Technology lies at the core of the Telecentre concept and can undoubtedly bring benefits to communities.

The Rate of Computer Literacy among Respondents

The vast majority of these respondents (59 of the 60 students polled) regard themselves as computer literate. Furthermore, of the 60 respondents 54 rated themselves as having attained either a medium level of computer literacy (28), or an expert level of computer literacy (26). This result should be understood in the context that the survey was conducted among second and third year level Information Systems & Technology students who would have acquired good computer literacy skills as part of their course work.

Different people enjoy different things they can do with computers. Forty six percent of the respondents prefer to use the Internet

and of which 32% noted that they are doing their academic work on computers. Entertainment included categories such as playing games, music, cards and watching movies (20%). Telecentres could play a role in getting people together and help people get interested in learning to do other things which they were not interested in doing.

Willingness to Pay for Assistance

The table below shows that only a minority of the respondents were willing to pay for assistance, revealing that only 27 of the 60 students sampled were willing to pay between R100-R150 a year for help, followed by 25 out of the 60 students who were unwilling to pay at all for assistance.

Amount	Number
R100-R150	27
R150-R250	3
R250-R350	2
R+350	1
Nothing	25
No Response	2

Table 1 Amount willing to pay for help

Phone Ownership

INASP (2003) notes that educational institutions in developing countries are beginning to develop opportunities that are offered by today's information societies. These connections act as gateways where researchers and librarians find, download and share knowledge and learning materials. The same connectivity also supports applications and behaviours that consume bandwidth. Typical solutions are to upgrade infrastructure, to install faster, larger, and higher performing systems, lines and facilities.

When asked how many of the respondents own telephones at home, slightly more than half of them (32 out of 60) reported that they owned landline telephones at home. The survey solicited information

about the home use of landline telephones, to the exclusion of cell phone use on the assumption that the use of landline phones could also give subscribers access to the Internet. The researchers conducted follow-up interviews with respondents who indicated that they did not own phones to determine why they did not have phones. Sixteen respondents indicated that they did not see the need for landlines because they were in possession of mobile telephones (cellular phones), stating that life is easier with them because one is not restricted to receive and make calls (as long as there is sufficient coverage).

Casual observation leads one to the conclusion that the vast majority of students own mobile phones, but not the most recent ones that could give subscribers access to e-Mail and more sophisticated Internet download facilities. In retrospect, it would have been prudent to also have included questions in the questionnaire about cell phone usage, particularly in view of the fact that new communication devices like smart phones, PDAs and Pocket PCs allow both voice telecommunications and Internet access.

Initiators in Telecentre Establishment

The table below shows that the biggest group of respondents (31) felt that the Council of the University should be responsible for providing an on-campus Telecentre.

Initiator	Number
School of IS&T	15
University of KwaZulu Natal	31
The Government	14

Table 2 Preferred initiators of Telecentres

Respondents felt that having the centre built by external sponsors could cause trouble regarding the regulating of the centre. They further pointed out that the University is in an appropriate position to meet their needs and knows the suitable services for the students. The second largest group among the respondents (15) expressed the opinion

that the School of IS&T (as agent of the university) should initiate the Telecentre. A smaller, but still significant group of respondents (14) expressed the opinion that government should initiate the Telecentre. They went on to note that the government is involved in sponsorships towards improving the education system in SA.

Khelladi (2004) suggests that there should be a permanent feedback from the local process to the authorities in charge of the national ICT plans implementation, throughout the appropriate channels, to permanently adapt strategies and support local activities. Many students would prefer to use a Telecentre to engage in their studies while off campus or in residence. It may be used for other reasons, but this shows most respondents had their focus on getting themselves equipped in developing and growth.

Best Uses for an On-Campus Telecentre

The table below indicates that majority (39) of the respondents would prefer to use the Telecentre to engage in their studies.

Best Use	Number
Research and Projects	11
E-Learning and Online Information	18
Recreation and Skills Development	10
Communication	8
Surfing the Web and Internet	9
No Response	4

Table 3 Perceived best uses for Telecentres

The centre may be used for other reasons too, but it shows that most students were focussed on academic development. Distance education gives learners freedom in what they are learning, but other first-time distance learners will not know how to deal with this responsibility.

Summary of Findings

The previous section highlighted some results of the study. In this section research questions that have been posed earlier on will be answered and recommendations will be made with regard to the operation of Telecentres in academic settings.

Our recommendations are based on a statistical analysis and interpretation of data that was collected during the 2004 academic year from IS&T undergraduate students on the Westville Campus of the University of KwaZulu-Natal. Demographic questions were asked about the age, academic rank, the link between the respondents' level of education and their employment status, and their means of information access.

A subsequent set of questions was asked to determine the respondents' perceptions about the usefulness of Telecentres in higher education settings. In the next section the researchers present their conclusions and recommendations.

Recommendations

The study has revealed that there is a need to address the issue of information access and sharing in tertiary institutions. It was noted that the present infrastructure is not adequate to fulfil the needs of students from disadvantaged backgrounds. The following recommendations are made.

Equipping Students

Students at entry level and other undergraduate levels are not given enough attention and opportunities to immerse themselves in the global information society. Training at these levels is crucial as many people at this stage need to build confidence in their choices of study. Inadequate facilities deter their academic progress because they are unable to complete assignments and meet submission deadlines.

Resource Management

Administrators should develop a strategy that will help identify students in need of special assistance and develop interventions that will support them academically. They should start to develop an improved learning system. Programs like the 'Discussion Forum' should be allowed to expand in departments of the institution.

Learning Conditions

Some students only get information from their educators and there are no properly supervised study sessions for young learners who require support from teachers. This means that they do not get any additional information from relevant resources.

Training

Education and training are sound investments for the individual and for society, but in most countries the expectation is for institutions and learners, rather than governments or the general taxpayer to bear all or most of the costs. This is an issue in poorer countries and communities and needs attention.

Job Creation

Telecentres could become part of a solution for creating employment opportunities for IS&T graduates.

Answers to Research Questions

Is There a Place in Academia for Telecentres?

Education for all can only be possible by utilising new educational paradigms. Africa's new emphasis on science, technology and innovation bodes well for the future. An e-Campus initiative however, that includes the establishment and maintenance of Telecentres in disadvantaged communities, will have a direct, positive impact on the enrolment of tertiary institutions, as well as on their rate of through-put.

Which Groups Would Benefit Most from Telecentres?

Students from disadvantaged communities would benefit more than those from advantaged communities, and females would benefit more than males. Telecentre projects must actively supply the telecommunication needs of females and males in disadvantaged communities. For example, more females may need training in computer literacy while more men could be trained in customer maintenance to provide them with career opportunities. In addition, because of disparate literacy levels and language, it may be necessary to develop different training curricula for different user groups.

Could a Telecentre be used for the IS&T Courses at UKZN?

Telecentre support for distance learning will be effective where they are connected in a unified, coherent and innovative national or regional system for educational and social reform. Learning and information must be available to all, regardless of their social circumstances. Telecentres can provide students with information and literacy skills to maximise their learning opportunities. However, Telecentres should not be seen as a solution to every social or economic problem. Telecentres must be designed to fulfil determined community needs, managed on sound business principles and create realistic expectations among its patrons of what can be achieved within a given timeframe.

Would the Lack of Resources Affect the Use of Telecentres?

Poor planning, expensive software and underutilisation can make computers a costly mistake for African Universities. Good planning and utilisation, such as making computers available for community use outside academic hours could compensate for this. The deployment of Telecentres in developing countries constitutes a promising way to narrow the digital divide and to improve the quality of life of men and women particularly in low-income rural and under-served areas.

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Authors' Contact Details

Maxwell M Buthelezi (9904428@ukzn.ac.za)

Sam Lubbe (slubbe@ukzn.ac.za)

School of Information Systems & Technology

University of KwaZulu-Natal, Durban, South Africa

Rembrandt Klopper (rklopper@iafrica.com / rklopper@gmail.com)

Department of Communication Science

University of Zululand, P.O. Box 1, Gillitts, 3603, South Africa