Sustainability of Pilot Multipurpose Community Telecentres in Kenya and Uganda

By

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DECLARATION

This project is my own original work and has never been submitted for a degree in any other university.

Signed ..... Date 7.11.03

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This project has been submitted for examination with my approval as a University supervisor

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DEDICATION

To my wonderful children – Solomon, Fred and Felister. Aim for the sky and never give up!

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ACRONYMS

AFRENA	Agroforestry Network for Africa
AfriAfya	African Network for Health Knowledge Management and Communication
AGL	Alliance for Global Learning
AHI	African Highlands Initiative
AMREF	African Medical and Research Foundation
ATU	Africa Telecommunications Union
CABI	CAB International
CBO	Community based organization
CCK	Communications Commission of Kenya
CFS	Communication for Survival initiative (Newfoundland)
CMC	Community Multimedia Centre
CRF	Corporate Research Foundation
CTA	Technical Centre for Agricultural and Rural Co-operation
DARE	Decentralized HIV/AIDs and Reproductive Health Projects (Kenya)
ECED	Early Childhood Education and Development (Kenya)
FAO	Food and Agriculture Organization of the United Nations
GIIC	Global Information Infrastructure Commission
ICTs	Information Communications Technologies
IDRC	International Development Research Centre
IEA	Institute of Economic Affairs
IFAD	International Fund for Agricultural Development
ISP	Internet service provider
IT	Information Technology
ITU	International Telecommunications Union
KIS	Kenya Information Society
KLGRP	Kenya Local Government Reform Programme
MTN	Mobile Telephone Network (Uganda)
NAC	National advisory committee

NALEP	National Agriculture and Livestock Extension Programme (Kenya)
NARO	National Agricultural Research Organization (Uganda)
NCCK	National Council of Churches of Kenya
NII	National Information Infrastructure (Kenya)
NGO	Non governmental organization
NPEP	National Poverty Eradication Plan (Kenya)
PEAP	Poverty Eradication Action Plan (Uganda)
PLB	Public Libraries Board (Uganda)
PMA	Plan for Modernization of Agriculture (Uganda)
PRSP	Poverty Reduction Strategy Paper (Kenya)
RCDF	Rural Communication Development Fund (Uganda)
RUN	Rural Universe Network
UCC	Uganda Communications Commission
UNCST	Uganda National Council for Science and Technology
UNISA	University of South Africa
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPE	Universal Primary Education (Uganda)
USAID	United States Agency for International Development
UTL	Uganda Telecommunications Limited
VSAT	Very Small Aperture Terminal

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ABSTRACT

The study sought to establish the sustainability strategies that pilot multipurpose community telecentres in Kenya and Uganda are using to achieve operational (human and financial) sustainability after the project period. The study, which entailed a census survey of seven pilot multipurpose community telecentres in Kenya and Uganda, also examined the policy and regulatory framework in the two countries. Telecentre managers were interviewed using a questionnaire designed to collect data. Experts' interviews were also held with development partners, regulators, government representatives and management committee representatives. Six telecentres were studied giving a response rate of 86 percent.

Research findings indicated that different sustainability levels have been attained by different telecentres and the telecentres are practicing strategic management to ensure growth and sustainability into the future. Telecentres in Kenya and Uganda have employed various strategies to meet their objectives and to generate revenue to meet operational costs. Some of the strategies in place include multi-partnership, development of add-on projects, marketing of telecentre services and products, pricing strategies based on affordability, diversification of products and services, value addition to existing services and products, active community involvement, focus on quality and lowering of costs. An assessment of revenues collected and recurrent costs however indicated a net deficit between revenues over recurrent expenditures thus implying that telecentres in Kenya and Uganda are not financially sustainable. Telecentres have been established as community institutions and are owned by the communities they serve. To ensure human resources sustainability, several 'training of trainers' courses and workshops have been held for staff, volunteers and community members. There is a need for training in management skills and retraining of staff to ensure they keep pace with the rapid technological advancements. In Kenya, there is need to increase the number of staff per telecentre to be able to cope with the varied and multidisciplinary needs of the community. The governments of Kenya and Uganda have made progress in developing

policies and regulatory frameworks that enhance use and application of ICTs in rural and disadvantaged communities. In Uganda, the UCC has developed policies and strategies as well as established a rural communications development fund and Kenya is currently working on the development of policy, strategies and establishment of a rural communications and development fund. Uganda has liberalized a greater part of its telecommunications services, and has two landline phone providers. Uganda also issues VSAT licenses to eligible applicants. Telkom Kenya on the other hand is still a monopoly and VSAT licenses have only been issued to a few financial and educational institutions in the country.

The study concludes that pilot telecentres in Kenya and Uganda are not financially sustainable and recommends a diversification strategy that broadens the portfolio of revenue collection options based on a business plan. The study further recommends strategic partnerships comprising the government, civil society and private sector to complement the efforts of development partners and the community. Sound marketing and promotion strategies also need to be developed to increase demand for services and products and ensure sustainability. Other recommendations include training to improve management skills, clear definition of roles of the multiple partners, full liberalization and privatization of the telecommunications sector and enforcement of ICT policies developed. The study also provides suggestions for further research.

CHAPTER ONE: INTRODUCTION

1.1 Background

This chapter introduces the concepts of pilot multipurpose community telecentres, their role in development, bridging the digital divide, facilitating communication, improving access to information and knowledge and alleviation of poverty in Kenya and Uganda. The chapter also addresses the need for these institutions to be sustainable after the project period and contains the statement of the problem, study objectives and importance of the study.

Mostafa Tolba is quoted to have said, "Achieving sustainable development is perhaps one of the most difficult and one of the most pressing and promising goals we face. It requires on the part of all of us commitment, action, partnerships and, sometimes, sacrifices of our traditional life patterns and personal interest" (UNEP, 1998). Harris (2002) argued, "sustainable human development is closely related to information and the knowledge it affords". Drucker (1999) in turn defined information as data that is organized, sorted or processed and as a new "basic resource". Knowledge is applied information and is a source of competitive advantage (Drucker, 1964; Liebeskind, 1996; Zack, 1999). Information can empower rural communities to participate in decision-making and to exchange ideas with others in developed and developing countries (Harris, 2002). Information and knowledge can, however, only be meaningful when communicated and exchanged to satisfy information needs (Drucker, 1999; Vikas Nath, 2000b).

Communication is "the exchange of information and the transmission of meaning ... Communication is organized information flow" (Whyte, 2000). It is about helping people understand needs, assess opportunities and provide them with media and methods to reach a common understanding (Ramirez, 1998). The Food and Agriculture Organization of the United Nations (FAO, 1994); Otsyina and Rosenburg (1997) and Denes (2001) further emphasize the role of communication in creating and sustaining, economically viable societies and ensuring human, economic and social development.

Information communications technologies (ICTs) – refers to a diverse set of technological tools and resources to create, disseminate, store, bring value-addition and manage information (Vikas Nath, 2000a). New ICTs offer many possibilities for rural communities for communicating and exchanging information and have revolutionized the way people live, conduct business and social activities (Barnatt, 1996; Norrish, 1998). ICTs have been defined as "electronic means of capturing, processing, storing, and communicating information" (Heeks 1999). The disparity in infrastructure development and affordability of new ICTs between countries and groups of people within countries such as the rich and the poor, has however created a "digital divide" (Bridges.org, 2001). Teledensity is used to measure the digital divide and the extent of information and communication infrastructure of a respective country. Teledensity refers to the number of main telephone lines per one hundred inhabitants. It is used to measure the technological sophistication and as a prerequisite for ICT use (Ernberg, 1998b; Ogbu and Mihyo, 2000). Kenya for example, has a teledensity of 1.01 (Institute of Economic Affairs, 2002) while Uganda's is 1.0 (Uganda Communications Commission, 2001). This is very low compared with the figure for high-income industrialized countries, which stands at about 50 (Hudson, 1998). Rural communities and the urban poor face special challenges including poverty, inaccessibility, illiteracy, and lack of infrastructure (Botten and McManus, 1999). These people live in extreme poverty, yet need to be involved, and be responsible for their development. This can only happen when the digital gap between the rich and the poor is bridged (IFAD, 2001).

New technologies such as the Very Small Aperture Terminal (VSAT), which refers to small satellite earth stations (communication dishes) that offer two-way transmission at reasonably high bandwidth and at substantially lower costs are now in use and offer connectivity solutions for rural, remote and isolated areas. VSATs provide interactive voice and data broadcasting and can serve as hubs for wireless local networks and are considered a good option for rural parts that do not have reliable telecommunication infrastructure (Hudson, 1998; Jensen and Richardson, 1998; Mureithi, 2000). Other technologies in use include high frequency radio transmission systems, satellite, and fibre-optic (Ernberg, 1990b; Jensen and Richardson, 1998; Mureithi, 2000). These have enabled the establishment of telecentres in under serviced areas. Telecentres are crucial if developing countries and disadvantaged groups within countries are to achieve sustainable human development (Harris, 2002). Human development is "the process of

enlarging the capabilities, choices and opportunities of people – especially the rural and poor to lead a long, healthy and fulfilling life" (Anyaegbunam, Mefalopulos and Moetsabi, 1998).

A telecentre refers to a physical center to provide public access to long-distance communication and information services, using a variety of technologies, including phone, fax, computers, and the Internet (Whyte, 2000) or may be viewed as "a physical space that provides public access to ICTs for educational, personal, social, and economic development" (Gomez, Hunt and Lamoureux, 1999). The spectrum of telecentres includes phone shops, cyber cafes, business bureaus, telecottages, multipurpose community telecentres, telekiosks, cybershops, community communication shops, village knowledge centers, cottage telecentres and community access centers (Benjamin, 1999; Whyte, 2000; Norton *et al.*, 2002). Telecentres may be privately or publicly owned, or part of a franchise. Most telecentres are multidisciplinary and multipurpose in nature and while some are free, others charge a fee or subsidize their services and products.

A multipurpose community telecentre then is: "a communal facility serving a rural region ... providing access to the telecommunication and IT facilities the local community needs" (Ernberg, 1998b) or "a structure which enables communities to manage their own development, by providing access to appropriate information, facilities, resources, training and services" (Benjamin, 1999). Telecommunications – refers to the science and technology of communication through the use of telephones, faxes, telex, television and radio (Woherem, 1993) while training – refers to a planned process to modify attitude, knowledge or skill behaviour through learning experience to achieve effective performance in an activity or range of activities. It's purpose in the work situation, is to develop the abilities of the individual and to satisfy the current and future needs of the organization (Manpower Services Commission, 1981). The centers were established to test the potential of traditional and modern ICTs on social and economic development on a small scale or pilot, before embarking on costly programmes at national level (Ernberg, 1998a).

Sustainability is defined as "keeping a project going once it has begun and is frequently linked to the challenge of financing the project" (Chasquinet, 2002). A project – refers to a complex set of activities where resources are used in expectation of returns and which lends itself to planning,

financing and implementation as a unit. A project has boundaries, time sequence and a specific starting and ending point, intending to accomplish specific objectives (Kosura, 2000). Sustainability also suggests an organizations ability to perform after the external support or technical assistance has withdrawn (McGill, 1994). The broad indicators of sustainability of telecentres include financial sustainability, policy and regulatory environment and human resource sustainability (Whyte, 2000). Most pilot telecentre projects were established with support from international development partners (Benjamin, 1999; Tetelman, 2001; Norton, *et al.*, 2002). A pilot telecentre – refers to a center that has been established as a test bed for new ICTs in the context of developing countries that provide opportunities for developing and testing distance learning, access to information, telemedicine, e-commerce designed for rural and urban poor populations. They provide a framework for testing cross-sectoral, interdisciplinary and interagency cooperation (Ernberg, 1998a).

Telecentres are a fairly new phenomena and the first telecentres were only established in 1980 (Whyte, 2000). Most research has focused on telecentre development (Norton *et al.*, 2002) and although different models have been tried out, there have been no conclusive findings (Benjamin, 1999). Indeed, a key research gap for the Acacia Initiative's telecentre projects suggested by Whyte (2000) is how sustainability of the telecentre will be achieved.

1.2 Statement of the Problem

Holmes *et al., (*1999) argued "telecentres are not working properly because the people who started them had no programme for long-term sustainability". Heeks (2002) indicated that there is little success in most information systems – including current ICT projects in developing countries and that they fail either totally or partially. This view was supported by McGill (1994) who stated that nearly two thirds of projects in Africa have a low probability of continuing after the funding is terminated. As the project test period of some of the telecentres draws to an end, the future of telecentres remains complex and uncertain. The centers have development objectives and a number of expected results cannot be quantified into financial measures. Telecentres services are also a mixture of public good and private service and while some are not marketable, others are subsidized (Whyte, 2000). Although telecentres have come up with solutions that address the needs of the community, the proceeds from pilot telecentres can only

sustain some of the operational activities (Benjamin, 1999). The future sustainability of the telecentres is also uncertain because development partners are changing their priorities and competition from cyber cafes is increasing. There is a need for replication of telecentres in new locations to ensure a critical mass that bridges the digital divide. It is, however, imperative that telecentres prove that they can be sustainable before there can be rollout. Sustainability of the pilot centres is, therefore, of immense research interest. **This study seeks to establish sustainability strategies that pilot multipurpose community telecentres in Kenya and Uganda are using to achieve operational sustainability after the project period.** In the context of this study, the researcher adopts a generic definition of 'operational sustainability' to include financial and human resources sustainability.

1.3 Objectives of the Study

The objectives of this study were: -

1. to establish strategies that pilot multipurpose community telecentres in Kenya and Uganda are using to ensure sustainability, specifically financial and human resources sustainability.
2. to identify the policy and regulatory sustainability challenges that telecentres are facing.

1.4 Importance of the Study

The findings of this study will be of great value to stakeholders working with telecentres including:

1. telecentre practitioners and community members working with or planning to establish telecentres who will benefit from the lessons learned in Kenya and Uganda
2. the development partners - to help them redefine their funding and growth strategies, thus ensuring rollout of telecentres is viable
3. policy makers - so that they can develop improved policies and formulate appropriate strategies for ICTs, telecommunication and rural electrification
4. scholars and researchers - the study will provide direction for further research and contribute to the growing body of knowledge in strategic management and
5. cyber cafés – to add value to their businesses

1.5 Structure of the Research Paper

The project consists of five chapters.

Chapter One: Introduction

This chapter introduces the concepts of pilot multipurpose community telecentres, their role in development, bridging the digital divide, facilitating communication, improving access to information and knowledge, and alleviation of poverty in Kenya and Uganda. It also addresses the need for telecentres to be sustainable after the project period, and contains the statement of the problem, study objectives, importance of the study and structure of the research paper.

Chapter Two: Literature Review

This chapter reviews the literature on telecentres, the need for strategy and institutional development to ensure sustainability of institutions and sustainability strategies that telecentres are using.

Chapter Three: Research Methodology

This chapter presents the methodology used for conducting research and includes the design, population, sample, data collection, data analysis and interpretation.

Chapter Four: Findings and Discussion

This chapter presents the profiles of telecentres, data analysis of operational (financial and human resources) sustainability of telecentres and examines the policy and regulatory framework. The chapter also presents data and research findings on strategies that telecentres are using to attain sustainability, and discusses and synthesizes the research results.

Chapter Five: Conclusions and Recommendations

The chapter gives the major conclusions from the study, recommendations, limitations of the study and suggestions for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on telecentres, the need for strategy and institutional development to ensure sustainability of institutions and sustainability strategies that telecentres are using.

2.2 The Role of Telecentres in Addressing Poverty and the Digital Divide

2.2.1 Poverty, Globalization and the Digital Divide

Most developing countries are faced with extreme poverty and many institutions share a common objective of "improving the quality of life and reducing poverty through sustainable and equitable growth" (Wolfensohn, 2000). The author suggested that the new millennium has led to accelerated globalization, which must be looked at as an opportunity and a risk. The International Fund for Agricultural Development (IFAD, 2001) has established that there are an estimated 1.2 billion people subsisting on less than one dollar a day, and 24 percent of these are found in Sub-Saharan Africa. These people live in extreme poverty. In order to address the issue of poverty reduction, the poor need to be involved, and be responsible for their development. This, however, cannot happen when the gap between the rich and the poor between and within countries is growing wider and wider, and the rural and urban poor continue to be disadvantaged. Wolfensohn (2000) states that though 'we live in a world of inequality', globalization brings about an interconnected and interdependent world that enhances trade, investment, finance, technology transfer and opportunities for all countries to develop their potential. Technology transfer – occurs when a technology that was developed elsewhere can be maintained, used and enhanced by members of another community (Woherem, 1993). The author advised that to fight poverty, infrastructure and knowledge must be accessible to rural and urban poor areas.

ICTs are development tools that have enabled community members to participate in electronic networks, teleconferencing, entertainment, telemedicine, e-commerce and distance-learning

courses (Ernberg, 1998a; Paisley and Richardson, 1998; Benjamin, 1999). They offer new and multiple perspectives that access information faster and more efficiently (Technical Centre for Agricultural and Rural Co-operation (CTA, 1998). ICTs play a catalytic role in improving access to sectoral information such as markets (Jensen, 2000), health (Edejer, 2000; IDRC, 2000; Musoke, 2001), agriculture (Munyua and Adupa, 2002), environment, education (Byron and Gagliardi, 2000; Chasquinet, 2002), commerce (Ernberg, 1998a), and in leveraging effect on earnings opportunities (Roman and Colle, 2002). They also ensure equitable access to information and communication services to the rich and the poor, the rural and the urban.

Globalization has affected the business environment worldwide and we have societies in the world that are information haves and information have-nots (Richardson, 1998; Global Information Infrastructure Commission (GIIC), 2000; Benton Foundation, 2000; Bridges.org, 2001). There are, therefore, major disparities in ICT development between those who have access to information and knowledge and those who don't (Jacobs, 1997). About 70 to 80 percent of the population in developing countries live in rural areas (Ernberg, 1998a) and form the bulk of the real challenge of bridging the digital divide (Paisley and Richardson, 1998). Norton *et al.*, (2000) argued that "the telecentre" is a promising model for deploying service to such communities and bridging the divide.

2.2.2 Trends and Purpose of Telecentres

Tetelman (2001) said "telecentres enrich a remote and often poverty-stricken community by bolstering small business opportunities, fostering high-tech skills and buffering the strategies of national telephone providers to fulfill universal mandates and increase rural-urban traffic over their networks". Though telecentres are not the panacea to universal access, Norton *et al.*, (2002) argued that telecentres provide a fast and cost-effective access to ICTs to underserved communities and can benefit their target communities and private sector investors. The telecentres also provide a platform for rural communities to address their training and development needs and vision (Anderson *et al.*, 1999).

Telecentres were first introduced in Europe - in Scandinavia in the 1980s, in Hungary in mid 1990s (Whyte, 2000; Roman and Colle, 2002), and later spread to rural areas in Australia, Brazil,

Canada, Japan, some European countries, South Africa, and the United States (Powell and Charron, 1996; Ernberg, 1998a,b). In Africa, most telecentres were established in the late 1990s (Whyte, 2000). In Newfoundland, the Communication for Survival (CFS) initiative was formed in 1995 to assist rural people to access information (Rural Newfoundland Cultural Survival Project, 1997). In Hungary, the "telecottage" initiative was built by non-governmental organizations (NGOs) (Norton *et al.*, 2000; Roman and Colle, 2002). Benjamin (1999) reports that South Africa had about 9,245 multipurpose community center related organizations in 1997. Dakar in Senegal had more than 4000 telecentres in 1997 and more than 1000 franchised telecentres in and around the city in 1996. Indonesia had over 300 People's Economy Telecentres (Norton *et al.*, 2000) and Brazil plans to establish 3,000 telecentres by the year 2004 (Ernberg, 1998a).

There are over 20 pilot telecentres found in various countries in Africa (Jensen, 2002). Some examples include the:

The International Development Research Centre's (IDRC) Acacia Initiative has set up pilot multipurpose telecentres in rural and disadvantaged communities in Uganda, Mozambique, Senegal, and South Africa. In Uganda, IDRC is supporting four pilot multipurpose community telecentres, some in collaboration with the International Telecommunications Union (ITU), UNESCO and Danida.

UNESCO is sponsoring six multipurpose community telecentres in Africa – one in Uganda and one in Tanzania (UNESCO, 2002).

USAID has supported CEDEP – an NGO, in establishing a community-learning center in Ghana (Dahms, 1999), and in total there are four telecentres in the country (Owen and Darkwa, 2000).

In Burkina Faso, the International Institute for Communication and Development (IICD) has helped set up 'Boutiques d'Information" to meet information needs of the rural population (IICD, 2002).

In Kenya, the National Council of Churches of Kenya (NCCK) in collaboration with the British Council, the Kenya Information Society (KIS), Software Technologies Limited and Africa Online have established the Huruma Multipurpose Community Telecentre to cater for the densely populated peri-urban community. The Rockefeller Foundation is supporting *AfriAfya,* which has established a Health Knowledge Management Network pilot project in Kwale. The Kivuli telecentre has been established in Riruta.

Studies conducted in South Africa indicated that there was a high level of usage of ICTs at telecentres (Benjamin, 1999). Most of the telecentres are experimental. Harris (2002) therefore stressed the need for strategies that ensure they continue to serve the community beneficially after the pilot phase. To address the numerous challenges faced by telecentres and operate effectively, telecentres should be managed as institutions with a perpetual life, i.e. the underlying assumption should be that the telecentres would continue existing long after the development partner(s) pull out.

2.2.3 Telecentres as Institutions

Telecentres are viewed as crucial community organs for social and economic development and if their intended objectives are to be achieved, the community, the government, the private sector and development agencies need to work together to develop synergies. Most telecentres are, however, established either in poor urban or rural isolated and remote areas, hence decreasing their survival chances without access, connectivity and generally the required infrastructure. Rural areas also face special challenges of poverty, illiteracy, technology and markets for their labour and produce (IFAD, 2001). There is often no electricity, no telephone, and no skilled human resources (Benjamin, 1999; Mureithi, 2000; Braa, 2001). Thus, the capital outlay required for the initial investment is also fairly high for such remote and disadvantaged areas. Other challenges include language and cultural issues, lack of appropriate information, lack of a reading culture, serving poor clientele, unemployment, low profits, low business confidence, inadequate infrastructure, lack of relevant and appropriately packaged information and technophobia (Mansell and Wehn, 1998; Botten and McManus, 1999; Gaster, 2000; Nyiira, 2000; Villageearth, 2000; Roman and Colle, 2002). There is, therefore, need for coherent national policies (and strategies) that ensure successful application of ICTs (Harris, 2002).

The International Telecommunications Union (ITU, 1998) argued that telecentres relying on development partner or public funding are less likely to be financially sustainable after the project period. Telecentres should therefore be developed and maintained as institutions that ensure services remain relevant to the needs of the community and operate in a manner that ensures continuity into the future. They should be equipped with the requisite aspirations, strategies, organizational skills, systems and infrastructure, human resources and organizational structure (Kaplan, 1999). Shearer (1990) argued that all firms need capability of response to the environment, opportunities and threats. Jones (2000) further stressed the need for good management, commitment to employees and a combination of a pluralist and unitarist culture in order to move towards sustainability.

2.3 Development of Institutions

2.3.1 Institution Development

Institutions are "sets of rules governing the actions of individuals and organization, and the interaction of all relevant parties and the negotiations among the participants" (World Bank, 2000) or "routines or standardized solutions to collective problems" (Goldsmith, 1992). The World Bank (2000) suggested that for sustainable development, institutions require coordination, management and maintenance of an enabling environment, structures that focus on good governance, transparent decision making and legal and regulatory systems. Goldsmith (1992) also stated that institution building attempts to create long-term local capacity to carry out essential functions, and includes activities such as training, professional advice, financial support, collaborative activities and temporary budget support. The term institutional development is preferred to institution building, which has been criticized for being elitist and not focusing on social units downstream. Institution development "refers to the process of improving the ability of institutions to make effective use of human and financial resources" (Israel, 1994). This includes activities that "streamline internal structures, strengthen management systems, and promote better financial and personnel management, to improve institutional relations, to restructure economic sectors or subsectors, to mend legal frameworks and to enhance government regulations" (Buyek, 1991). McGill (1994) suggested that

institutional development should be concerned with an organization's internal structures, processes and external relationships. The author further indicated that to be sustainable, the institutional development process should be long-term.

2.3.2 Empowerment of Employees

Research conducted by Lee and Miller (1999) indicated that commitment to employees well being aids profitability and positioning strategies. Argyrus (1998) stated that "no vision, no strategy can be achieved without able and empowered employees". The author argued that firms must be committed to generating human energy and empowering staff to take more responsibility for their own destiny. Anyaegbunam, Mefalopulos and Moetsabi (1998) asserted that human development could only occur when people are empowered to participate effectively. Prendergast and Singer (1991) suggested an approach where the learning process is introduced on a small-scale basis and modified to suit the dynamic environment. The World Bank (2002) emphasized this point further and pointed out that empowerment of community members and provision of opportunities to engage in productive activities can promote development and sustainability. Sharma and Vredenburg (1998) quoted Hart (1995) who said the integration of key stakeholders such as community leaders, media and regulators in product design and development was crucial.

2.3.3 Training

Dynamic environmental changes in technology development, changes in organizations and competition have led to the recognition of the importance of training and that success of firms is determined by the skills and abilities of employees (Holden, 1997). Firms use training to achieve broader skills and to enhance employee commitment (Dessler, 1994). Managers also need training to exercise good judgment, which calls for continuous investment in training (Holden, 1997; Crawley, 2001). Dessler (1994) emphasized that training can be used to mold employees. Holden (1997), however, noted that most employers view training as a 'cost' as opposed to an 'investment'.

2.3.4 Building Partnerships and Co-operations

Cooperation should focus on strengthening the capacities of local firms. The Corporate Research Foundation (CRF) (1999) described partnership as the key to providing effective solutions and continuous performance improvement. Drucker (1999) referred to this as "organized improvement". The CRF suggested that alliances with international global alliances hold the key to success. Andreasen (1999) suggested that nonprofit firms must develop explicit ties with for-profit corporations and enter into a cause-related alliance. He argued that nonprofits managers must find partners they can add value to and complement their firm's long-term strategy but cautions on the risks involved. Drucker (2000) predicted that business growth and expansion (in the twenty first century) will be based on alliances, partnerships and joint ventures with firms located in other areas.

2.3.5 Ownership and Institutional Development

Ownership is pivotal in achieving superior quality, service, innovation and sustainability. "Ownership involves the enhancement of pride" (Peters and Austin, 1994). In their empirical study, Gedajlovic and Shapiro (1998) however indicated that the correlation between ownership and firm profitability differs across countries.

2.3.6 Leadership and Institutional Development

Drucker (1999) argued that change leaders must not ignore problems and should "starve problems and feed opportunities". Leadership has been recognized as critical to a firm's success and fulfillment of employees and other stakeholders (Mintzberg and Quinn, 1991; Holmes, 2001). Drucker (1964) pointed out that economic results are earned only by leadership and not by mere competence. While management is about coping with complexity of planning, budgeting, organizing, staffing and controlling; leadership is about creating organizations, establishing direction, aligning people, motivating, and inspiring. It is about coping with changing circumstances (Kotter, 1996). Good leaders are inclusive, empowering, purposeful, ethical and process oriented (Komives and McMahon, 1998) and are absorbed in the customers' problems (Coulson-Thomas, 2001). The approach of liberated leaders is based on strong relationships with stakeholders, mutual trust and shared beliefs (Holmes, 2001).

2.3.7 Culture and Organizational Development

Stacey (1996) defined culture as "that set of beliefs, customs, practices and way of thinking that they have come to share with each other through being and working together. It is a set of assumptions people simply accept without question as they interact with each other". An organization's belief system determines how decision-making and control is handled (Stacey, 1996). Peters and Waterman (1982) emphasized the effects of emotions and motivation and argued that successful organizations are those with people with strong feelings of belonging, and firms with a commitment to its employees move towards sustainability (Jones, 2000). Under extremely turbulent conditions, leaders must bring about dramatic change in the total business – the strategy, organization's structure, financing, and organizational culture (Taylor, 1995). To meet all the demands of a dynamic environment, organizations need strategic management for success, growth and sustainability into the future.

2.4 Strategy and Institutional Development

2.4.1 Strategic Management and Success of Firms in a Dynamic Environment

Strategy has been defined as "the match an organization makes between its internal resources and skills … and the opportunities and risks created by its external environment" (Hofer and Schendel, 1978), as quoted by Grant (1991). Strategic management is "the process whereby managers establish an organization's long term direction, set specific performance objectives, develop strategies to achieve these objectives in light of all the relevant internal and external circumstances, and undertake to execute the chosen action plans" (Thompson and Strickland, 1987). Strategic management attempts to develop strategies and plans for a firm and to manage their implementation using company wide programmes. This involves looking into the organization structure, culture, processes and resources of a firm (Taylor, 1995). The long-term focus ensures sustainability of firms.

The business environment is becoming volatile and is full of complexities, competition and uncertainties (Kotter, 1996). New challenges are being posed to firms from increasing competition, demanding customers and the society. West (1992) predicted that the future business environment will be more hostile and uncertain, and managers will have to imagine why the organizations exist, for whom and for what (Hesselbein *et al.*, 1997). Firms of the

twenty first century will face more uncertain political, economic, social-cultural and technological changes (Drucker, 1999). Similar dynamism has been observed in East Africa (Shimba, 1993; Matseshe, 1999; Adieri, 2000; Nyiira, 2000; Mureithi, 2000). Stacey (1998) argued that organizations should continuously scan their internal and external environments and adapt to changes that affect them. The author argues that because of the dynamic environment e.g. people's attitudes, their tastes, requirements for service, technologies and policies, the future becomes uncertain and ambiguous. There are two types of organizations – profit and non-profit and both need strategic management.

Whereas profit organizations work towards maximizing profits, and this presents a measurable objective, non-profit organizations may not have a measurable objective, which complicates the process. David (1995) argued that strategic management is equally critical in non-profit organizations especially for developing and justifying requests for financial support, attracting people in a competitive climate, and diversification of services. Strategic management allows non-profit organizations to be efficient and effective and has an effect on the organization's mission, objectives, strategies and policies. Strategic management also enhances organizational performance (David, 1995). Firms will adopt different strategies depending on their resources, capabilities, type of firm and its environment.

2.4.2 Resource-based View of Strategy

Increasingly, the resource-based approach is in vogue (Collis and Montgomery, 1995; Teece *et al.*, 1997; McTavish, 1998; Rindova and Fombrun, 1999). Sustainability of most firms is determined by the resources it has and firms position themselves based on their resources and capabilities (Barney, 1991; 1996). It has been suggested that a firm's resources drive its performance in a turbulent and competitive environment (Johnson and Scholes, 1999). Resource-based view is essentially concerned with building unique strengths of a firm (Hall, 2000). Barney (1991; 1996) argued that unique organizational skills and practices accumulated over time could become unique to a firm. This uniqueness creates competitive advantage that is more enduring and sustainable than that derived from traditional models (Zack, 1999). The author suggested that firms should be committed to upgrading their resources and capabilities, which requires strategic direction and long-term focus for a firm's sustainability.

Teece *et al.*, (1997) defined resources as "firm-specific assets that are difficult if not impossible to imitate". Resources include human; tangible assets – such as capital, finances and equipment; and intangible assets – such as skills of employees, patents, brand names, know-how, reputation, intellectual property rights, culture and technical knowledge (Hall, 1992; Collis and Montgomery, 1995; Barney, 1996; Hall, 2002). Firms with enough money, strong credit rating, and access to low-cost loans have the key to success (Rothschild, 1989). The human element is also a vital resource for strategy execution (Lee and Miller, 1999) and a source of competitive advantage (Teece *et al.*, 1997). Irrespective of the business a firm is in, technology and information technology (IT) are perceived as vital to sustain and improve competitive position (Currie, 1995; Porter, 1998). IT – refers to the new technology of collection, storage, retrieval and communication of data and information, brought about by the merging of computer technology and telecommunications (Woherem, 1993). Valuable knowledge is also a strategic asset (Drucker, 1964; Liebeskind, 1996) and it is imperative that firms are able to create and apply knowledge, if they are to build and sustain competitive advantage. Organizations must "create, capture, harvest, share and apply their organization's knowledge and expertise" to remain competitive (Zack, 1999).

Naylor (1996) stressed the need for sustainable competitive advantage while Mariotti (1997) argued that this advantage is created by a special combination of people and technology and says "the best people working together in a strong culture, in partnership with others, using effective processes and the best technology, will create and deliver the best value". An organization's capability is a complex combination of assets, people and processes that firms use to transform inputs into outputs (Johnson and Scholes, 1999). The authors argued that capability refers to a firm's capacity to coordinate resources in carrying out a task and is the main source of competitive advantage. Strategy thus helps to link capability to the environment and ensures a "fit" with the environment. The capability of a firm must adjust with the changing environment to avoid a "capability gap" and exploit its core competencies.

Competencies are the sources of a firm's success or failure (Tidd, 2000). Competencies and capabilities are an emerging paradigm for corporate strategy of two different but complementary

dimensions that emphasize behaviourial aspects of strategy (Stalk, Evans and Shulman as quoted by Long and Vickers-Koch, 1998). The authors suggested that core competencies emphasize technological and production expertise at certain points in the value chain, while capabilities encompass the whole value chain. Core competencies are "those competencies that define the firm's fundamental business as core" (Teece *et al.*, 1997). Long and Vickers-Koch (1998) argued that core capabilities are the sum of core competences and strategic processes. They suggested that critical core capabilities are those that provide today's competitive advantage, while 'cutting edge core capabilities' are those that provide future competitive advantage.

2.4.3 Learning Organizations and Innovation

Prahalad and Hamel (1990) suggested that core competencies are "the collective learning in the organization". Collis and Montgomery (1995) argued that firm's that have based their strategy on core competencies have developed into learning organizations. A learning organization aims at continually expanding its capacity to create its future, thus ensuring sustainability. Competencies also grow as they are applied and shared (Prahalad and Hamel, 1990). Prokesch (1997) stated that in building a learning organization, the most important rule is to have a clear purpose of whom the firm is, what makes them distinctive, what the firm exists to achieve and what they are willing and not willing to achieve.

Dees (1999) argued that most nonprofits lack business organizational skills and managerial capacity. The author suggested that such firms must support new activities while at the same time integrating the skills and values of staff through training or hiring of new skills. A firm must have a policy of systematic innovation and practice organized abandonment, improvement and exploitation (Drucker, 1999). Prahalad and Hamel (1990) asserted that "the essence of strategy lies in creating tomorrow's competitive advantages faster than competitors can mimic the ones you possess today" and this calls for innovation. Peters and Austin (1994) suggested "constant experimentation" as a way of coping with the dynamic environment. The essence of strategy must, therefore, lie in innovation and Baden-Fuller and Pitt (1996) argued that firms must not only create but also sustain their capacity levels.

2.5 Sustainability of Institutions

Sustainability "suggests an organization's ability to perform after the external support or technical assistance has withdrawn" (McGill, 1994). Sustainability then should be conceptualized as a journey, more than a destination, towards continuous capability building and management attention (Jones, 2000). Most firms are faced by a central challenge of meeting the needs of a growing population in a sustainable manner (Stickings, 1998). Drucker (1964) pointed out that executives do not give sufficient time or thought to the future. There has, however, been a new interest in the role of a firm's resources as a foundation for its strategy. According to Grant (1991) returns from a firm's resources and capabilities depend on the sustainability of the competitive advantage and the firm's ability to appropriate the earnings from its resources and capabilities.

While McGill (1994) proposed three pillars in the concept of sustainability namely economic growth, environmental quality and social responsibility, Whyte (2000) proposed – financial, policy and regulatory environment and human resource sustainability. Chasquinet (2002) proposed four, namely social, political, technological and economic. Stickings (1998) argued that all must be balanced to achieve sustainability. This requires paying attention to a firm's business competitiveness underpinnings and leveraging on outsiders without compromising core competencies (Kiernan, 1993). Marrioti (1997) observed that organizations would only sustain their competitive advantage if they respond to the needs of the market with the best value. Sustainability measures may be financial and non financial.

2.5.1 Financial Sustainability

Financial sustainability refers to a situation where the revenues of a centre exceed the recurrent expenditures. Marrioti (1997) argued that knowing and understanding financial performance is vital for leading a successful firm. Rothschild (1989) suggested that a firm should have a strong financial position and ample positioning and debt capacity. The author advised that the financial strategy of a firm entails developing a balanced mix between debt, equity and retained earnings and presents advantages and disadvantages of equity. Barney (1996) pointed out limitations of using accounting measures in measuring a firm's performance such as when investing in non-physical assets such as teamwork and relationships with customers or managers, which may be

hard to measure. Itami (1987) also argued that intangible resources and capabilities of often undervalued or are difficult to value or describe yet have significant impact in a firm's performance. Barney (1996) points out that the managers' interests and preferences guide accounting methods more than by logic and that the performance measurements are often based on short-term basis. Drucker (1999) suggested that to be meaningful, performance should also be defined in a non-financial value return.

Dees (1999) points out that nonprofit organizations that previously operated in the social sector and provided basic social goods were increasingly seeking additional revenues by becoming pro-business. The author argued that many nonprofits were commercializing their core programmes, thus relying less on grants and donations and ensuring financial sustainability. Income may be from internal sources such as revenues collected for services and products or from external sources such as additional grants and new funding sources. The centers also have non-financial benefits such as tariffs and regulatory arrangements and a working environment that motivates and retains staff.

2.5.2 Human Resource Sustainability

Human resources sustainability refers to a situation where a firm has adequate trained human resources that are capable of carrying out the activities of a firm. Telecentres must ensure there is adequate capacity developed at project and national level. Local staff and volunteers require skills, expertise and experience in handling the operations of the telecentres. They must thus be trained and retained and the latter could be achieved through commensurate remuneration. Drucker (1999) proposed that employees must be managed as equal partners and that volunteers are motivated by the satisfaction they get from their work, hence need challenge and training. Systematic training ensures the system's capacity is enhanced (IntraDelta Management Consultants International Inc., 1997).

2.6 Some Sustainability Strategies Practiced by Telecentres

Richardson (1997) said that sustainability "is the end result of catalyzing empowerment and sustaining people's participation in their own development". The success and future of a telecentre depends on a number of factors including income levels, literacy levels, population

density, regulatory and legal policies and management and staff of telecentre (Norton et al., 2002). Harris (2002) stressed the importance of developing and implementing sustainability strategies that ensure continuity of telecentres after cessation of project period. Various sustainability strategies have been adopted in ICT-based projects in both developed and developing countries. Strategies that have been used include:

The Swaminathan Foundation in Bangladesh established on a 50-50 basis with local operators. The Grameen women model is financed by the Grameen Bank microfinance system (Yunus, 1997) and the Bank suggested a debt-financing model to establish privately owned telecentres, which offer attractive business (Harris, 2002).

The CFS initiative in Newfoundland formed a partnership of communities, agencies, groups and individuals promoting the survival of rural communities. CFS has several sponsoring partners who contribute cash and in-kind donations to the initiative (Rural Newfoundland Cultural Survival Project, 1997).

Gorenflo (1998) described an innovative partnership and leadership methods between Vision Net and two consortia of primary and secondary public schools with Northnet and Montana State University-North in Northeast Montana in the United States of America.

Roman and Colle (2002) present global studies conducted on sustainability which include:

In Canada, the government committed people and funding to ensure Internet was available in rural and urban communities. Australia has adopted a similar strategy and the government is providing support for telecentres for at least 4 years. The Australian government has also created the "Networking the Nation" fund while South Africa has created the Universal Service Agency, which is the main actor in funding and establishing telecentres.

In Hungary, the "telecottage" initiative built by NGOs with community partnerships. International institutions such as the Health Information for Development in the UK,

which creates opportunities for partnership plans to set up health-information-resource centers that could be partnered up with telecentres.

Talented and dedicated volunteers with diverse backgrounds and experience could offer a variety of services and fill the human resources capacity gap in telecentres.

In Hungary and Australia, diversification of services has been tried out and more than 50 services are being offered and innovative income-producing activities developed.

CHAPTER THREE: RESEARCH METHODLOGY

3.1 Introduction

This chapter presents the methodology used for conducting research and includes the design, population, sample, data collection, data analysis and interpretation.

3.2 Study Design

This study was carried out using cross-sectional census survey because of the small number of pilot multipurpose community telecentres in Kenya and Uganda. Interviews were conducted using a questionnaire to collect in-depth data on operational sustainability strategies that pilot multipurpose community telecentres are using. Expert interviews were also used to collect data from the chairpersons of the management and steering committees, regulators and from development agencies. A checklist was used to guide the interviews.

3.3 Population and Sample

The population of study comprised pilot multipurpose community telecentres in Kenya and Uganda. There were four pilot telecentres in Uganda, located at Nabweru, Nakaseke, Buwama and Kabale and three in Kenya, located at Huruma, Riruta and Kwale. The justification for selecting Uganda and Kenya was that in Uganda, the telecentres were established earlier and have made good progress while in Kenya, telecentres are a much newer phenomena and could have gained from experiences of the pioneers. Adequate data could, therefore, be obtained from centers that are about to come to project completion and compared to those that were relatively new.

3.4 Data Collection

Primary data was collected through interviews. Operational sustainability data was collected using structured interviews and the questionnaire was administered to telecentre managers. Interviews ensure the respondents have a clear understanding of the intent of the study, clarify questions and collect additional information not captured by the questionnaire (Frankfort-

Nachmias and Nachmias, 1996). A semi-structured questionnaire was designed comprising four parts and included both open-ended and close-ended questions to capture relevant data. Name of institution, name of respondent and title were recorded separately from their responses to ensure confidentiality. The questionnaire was pre-tested in Kenya on the manager of Huruma telecentre before being administered to de-bug any ambiguous questions. Secondary data was obtained from relevant publications such as reports, business plans and strategic plans. This enabled the researcher to collect data collected over time by others to supplement the primary data.

Research variables included financial and human resources sustainability. Specific indicators used were based on the guidelines suggested by Hudson (1999) and Whyte (2000). The following indicators were used to measure financial sustainability – difference between revenues and recurrent expenditures, operational costs (site maintenance or rent, insurance, security, maintenance costs, communication costs, staff costs and training costs), revenues (grants, cash earnings, public and private donations, in-kind support, community support, revenues earned from services and products), ownership, location and users. Indicators for measuring human resources sustainability included total number of trained staff, full-time, part-time staff and volunteers, staff turnover rates, salaries and benefits compared to others in the industry and local versus expatriate staff. Other indicators included investment in training – such as number of training courses at various levels, budget for human resources training compared to overall programme costs, staff motivation and relationships.

The Buwama pilot multipurpose community telecentre in Uganda was found closed during the data collection period, hence data was collected from three telecentres in Kenya and three in Uganda, giving a response rate of 86 percent.

3.5 Data Analysis

Questionnaires were edited for completion, mutual exclusivity, errors and consistency. The data was then coded and analyzed using Excel and the Statistical Package for Social Sciences (SPSS). Quantitative data was analyzed and presented in tables, charts, averages and percentages. Qualitative data was summarized in a meaningful narrative format and where appropriate,

comparisons were made between telecentres and across countries. Frequency and percentage distributions were constructed to summarize the data.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the profiles of telecentres, data analysis of operational (financial and human resources) sustainability of telecentres and examines the policy and regulatory framework. The chapter also presents data and research findings on strategies that telecentres are using to attain sustainability, and discusses and synthesizes the research results.

4.2 Profile of the Telecentres

Seven telecentres were earmarked for study comprising four in Uganda and three in Kenya. The Buwama telecentre in Uganda was however found closed at the time of data collection. The telecentres studied in Kenya include the Huruma multipurpose community pilot telecentre, the Kivuli pilot community telecentre and the Kwale Health Knowledge and Information Centre (Mtaa Dispensary Health Centre) (Figure 1). In Uganda, the telecentres studied were the Nabweru pilot multipurpose community telecentre, the Nakaseke pilot multipurpose community telecentre and the Kabale pilot community telecentre (Figure 2).

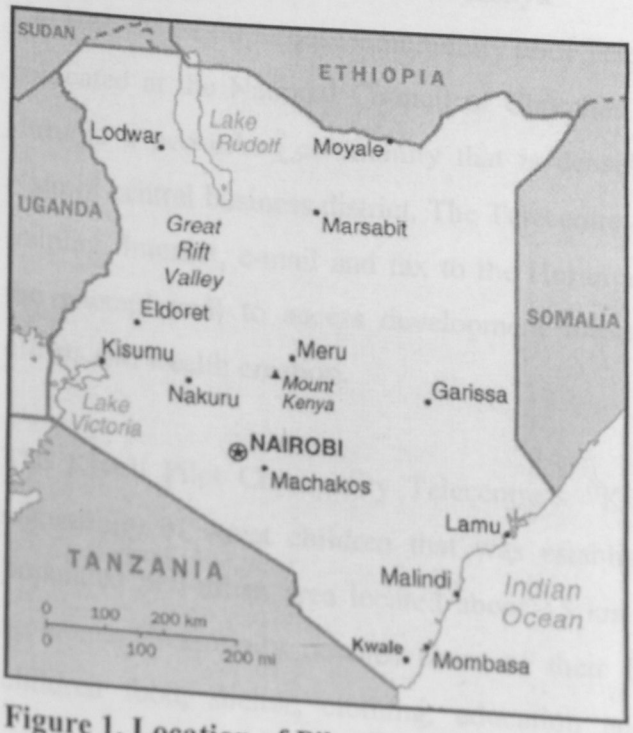

Figure 1. Location of Pilot Telecentres in Kenya

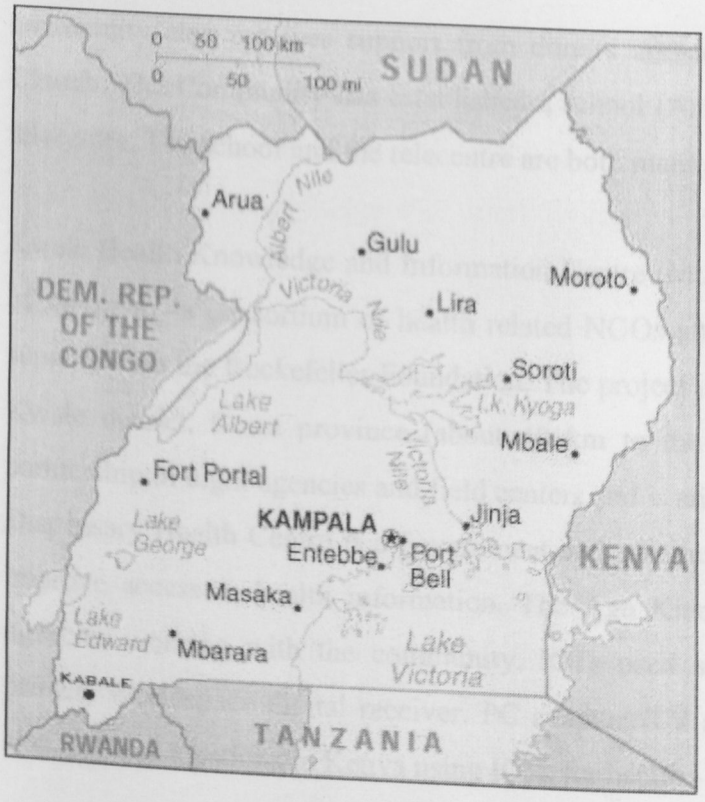

Figure 2. Location of Pilot Telecentres in Uganda

4.2.1 Pilot Telecentres in Kenya

The Huruma Multipurpose Community pilot Telecentre was officially launched in July 2001 and is located at the National Council of Churches of Kenya (NCCK) Huruma Medical Clinic in Huruma a peri-urban community that is densely populated area about 22 km to the east of Nairobi central business district. The Telecentre offers a number of services including computer training, Internet, e-mail and fax to the Huruma community (especially the youth, women and the unemployed) to access development information that contributes to poverty alleviation efforts and wealth creation.

The Kivuli Pilot Community Telecentre - "Kivuli" (a Swahili word meaning shelter), is a community of street children that was established at Riruta Satellite in 1993 in a densely populated peri-urban area located about 15 km west of Nairobi central business district. The Koinonia Community devotes some of their finances and time towards offering the street children food, shelter, clothing, education and sports supports the centre. The Koinonia

community also receives support from donors abroad and is also supported by the Catholic Church. The Community has established a school (Andrew's School) and in 2000 established a telecentre. The school and the telecentre are both managed by one coordinator.

Kwale Health Knowledge and Information Centre (Mtaa Dispensary Health Centre) is a project of *AfriAfya* - a consortium of health related NGOs and was established in 2001 with financial support from the Rockefeller Foundation. The project is located in a rural community in Mtaa in Kwale district, Coast province (about 40 km to the south of Mombasa city). *AfriAfya* is a partnership of eight agencies and field centers and is still in its pilot/exploratory phase. The Mtaa Dispensary Health Centre is a government and community run dispensary and is using ICTs to improve access to health information. The Aga Khan Health Services is one of the partner agencies working with the community. ICTs used at Mtaa Dispensary include a computer, printer, Worldspace digital receiver, PC adaptor, TV and video. *AfriAfya* has seven pilot field sites in other locations in Kenya using ICTs for health.

4.2.2 Pilot Telecentres in Uganda

The Kabale Telecentre Network is a pilot initiative of the African Highlands Initiative (AHI) that was established in 2000 in Kabale town. The telecentre's broad goal is to sustainably improve the nutritional security and income in communities in intensively cultivated highlands while its overall objective is to demonstrate, test and promote the use of community based ICTs for rural community development and empowerment. The telecentre beneficiaries include people in all sectors of the community with the aim of bringing them to the mainstream of economic development. The primary target audience is the rural community in Kabale with special emphasis on the youth, women and the disabled. Services offered include TV and video shows on agriculture and education programmes, radio, telephone, fax, E-mail, Internet, photocopying, printing, secretarial services, information dissemination using the centre's resource center, training in the use of ICTs and demonstration plots.

The Nabweru Pilot Multipurpose Community Telecentre became operational in 1999 and is located in Mpigi district about 6 km from Kampala, in a peri-urban sub-county (Kayabwe and Kihombo, 1999). Users of the telecentre include a business community, salaried employees,

students and unemployed youths, farmers and health practitioners. The community comprises of small-scale traders, and small-to-medium scale agro-processing industries, salaried employees, students and unemployed youth, farmers and health practitioners. The sub-county is densely populated and has many economic activities such as trading and farming. The greater part of the population is salaried employees in both formal and non-formal sectors with small sizes of farms.

Nakaseke Multipurpose Community Telecentre and Library Pilot Project is located in a typical rural set up in Luwero district, about 60 kms north of Kampala (Asingwire, 2001) and was established in 1999. The telecentre serves two sub counties. Nakaseke was one of the first rural sites in Uganda to get telephone communication and the majority of community members are subsistent farmers and other beneficiaries include the disadvantaged groups in the community such as women, the unemployed and the youth; NGOs, CBOs, extension workers, students and other community members.

4.2.3 Overall Profile Comparison of Pilot Telecentres

Research results indicated that telecentres in Uganda were established in 1998 and became operational in 1999 while those in Kenya were established in 2000 and 2001. Telecentres were established much earlier in Uganda than in Kenya because development partners preferred to work with countries that had enabling policies around 1998 as test beds for ICTs for development. Based on this criterion, IDRC established four telecentres in Uganda (Rathgeber, personal communication, 1997[1]). The telecentre staff in Uganda have served the telecentres for two and a half years (2.5) on average, while those in Kenya have served for an average of one year five months (1.4 years), implying that staff of the Ugandan telecentres have attained much more experience and learned more lessons. The longest serving respondent had worked at the telecentre for 3.4 years (Nakaseke, Uganda) while the shortest serving had worked for one year (Huruma, Kenya).

[1] E.Rathgeber, former East and Southern Africa Regional Director, IDRC, Nairobi, Kenya, personal communication, Jul 1997

Telecentres offer core and secondary services. Five of the telecentres - 83.3 percent indicated that the core business in their telecentre was telephone, training / education and knowledge/information dissemination. Three of the telecentres - 50.0 percent indicated that they were offering secretarial services as core business and all these were from Uganda. Only one telecentre - 16.7 percent (Nakaseke) indicated culture and recreation as a core business of the telecentre (Table 1). All the telecentres offer secondary services with three telecentres – 50.0 percent offering secretarial services, two telecentres - 33.3 percent offering rental of equipment and room services and one telecentre - 16.7 percent offering recreation and sports services. Other services offered at the telecentres in Uganda include outreach activities, recreation, sports, hire of conference / meeting room and equipment and preparation of presentations. Secondary services offered by telecentres in Kenya include secretarial services, culture and recreation, training, telephone and hire of conference / meeting room services. This is an indication that the telecentre management is already addressing sustainability issues and is exploring ways of expanding their revenue base to finance their activities after the project period. A number of secondary services, most of which are income-generating activities have been introduced and are presented in Table 2.

Table 1 Core Business of Telecentres

Core business	Frequency – number of telecentres citing business n=6	Percentage (%) per business
Telephone	5	83.3
Training / education	5	83.3
Information / knowledge dissemination	5	83.3
Secretarial business	3	50.0
Culture recreation	1	16.7

Table 2 Secondary Services Offered at Telecentres

Secondary services offered at telecentres	Frequency – number of telecentres citing business n=6	Percentage (%)
Secretarial services	3	50.0
Renting of equipment and room	2	33.3
Recreation	1	16.7
Sports (free of charge)	1	16.7

The findings of the present study are consistent with those of Ernberg (1998b) and Benjamin (1999) who implied that telecentres should offer multidisciplinary services and be multipurpose in nature to be sustainable.

The primary beneficiaries of the telecentres studied include various categories based on the objectives of the respective telecentre. These include the youth, women, administrative staff, farmers, and the business community, health workers and NGOs in the case of Uganda, while in Kenya, the primary beneficiaries include the Ministry of Health workers, the youth, schools, the business community, the rural community, women, the unemployed and the entire community in general. Secondary beneficiaries include the entire community (Table 3). Their secondary beneficiaries include the entire community.

Table 3 Primary and Secondary Beneficiaries of Telecentres

Country	Telecentre	Primary beneficiaries	Secondary beneficiaries
Uganda	Nabweru	Women, the youth, farmers, local administration, business community	All community members
	Nakaseke	Women, the youth, farmers, health workers, local administration, students, teachers	All community members
	Kabale	Farmers, NGOs, local administration, working groups	All community members
Kenya	Kivuli	Children and youth at Kivuli Centre and Riruta community	All community members
	Mtaa	Mtaa rural community	Ministry of Health
	Huruma	The youth	Huruma community, business community

4.3 Analysis of Financial Sustainability

All the six telecentres studied offered some free services but charged for others to generate income (Table 4). The revenue collected was used to help sustain the activities of the telecentres and as pointed out by Barney (1991, 1996), sustainability of most firms is determined by the amount of resources a firm has.

Table 4 Pricing for Services and Pricing Policies at Telecentres

Country	Respondent	Services for fee or free	Telecommunications	Training / education	Information /knowledge dissemination	Secretarial	Culture and recreation	Health services	Advisory and counseling	Agricultural documents	Outreach	Pricing criteria	Community views on fee	Subsidized prices
Uganda	Nabweru	Both	Fee	Fee	Free	Fee	Free		Some free	Some free		Focus	Fair	Yes
	Nakaseke	Both	Fee	Fee	Free	Fee	Some fee		Some free	Some free	Some free	Focus	Fair	Yes
	Kabale	Both	Fee	Fee	Free	Fee			Some free	Some free	Some free	Focus	Fair	Yes
Kenya	Kivuli	Both	Fee	Fee	Free				Free			Focus	Low	Yes
	Mtaa	Both	Fee	Free	Free		Some fee	Some free	Free			Focus	Fair	Yes
	Huruma	Both	Fee	Fee	Free			Some free	Free			Price leader	High	Yes

4.3.1 Fee Based Services and Pricing Policy

Findings of the study indicated that 100 percent of the telecentres charge a subsidized fee for telecommunication services (telephone, fax, e-mail, Internet). Training / education services were offered for free by one telecentre - 16.7 percent of the respondents, and for a fee by 83.3 percent (five telecentres). All the telecentres indicated that they offered information and knowledge dissemination services for free (Table 5). Three out of the six telecentres interviewed offered secretarial services for a fee. Only 50.0 percent (Nabweru, Nakaseke, Mtaa centre) of the telecentres indicated they offered cultural / recreational services. Respondents indicated that these services are offered for free by 33.3 percent of the telecentres, while 66.7 percent charge a subsidized fee (Table 5). Other services cited by respondents include advisory and counseling services - cited by 16.7 percent and these are offered for free, health services - offered by 33.3 percent on a cost-shared basis although some services were free and provision of agricultural documents - by 16.7 percent of the respondents (Table 4). Although only one telecentre indicated the latter, the three telecentres in Uganda provide access to agricultural information. Some of the materials are offered for free while a fee is charged for others. Outreach information activities are offered for free but a subsidized fee is charged for entertainment videos taken out to the community. This approach of service delivery and charging for services is in conformity with Dees's (1999) findings that nonprofit organizations that previously operated in the social sector and provided basic social goods were increasingly seeking additional revenues by becoming pro-business. Thus, according to Dees (1999), and in agreement with the findings of the present study, telecentres should expand their resource base to contribute towards sustainability of telecentres.

Telecentres use different pricing strategies based on the objectives for which they were established (Table 6). Respondents indicated that 83.3 percent of the telecentres adopted a focus pricing strategy, while 16.7 percent had adopted a price leader strategy. The choice of strategy was determined by the objective of the respective telecentre. Huruma telecentre, for example adopted a price leader strategy because its objective is to provide the community with information, training and connectivity to the Internet. The remaining five telecentres that have adopted a focus strategy have objectives that focus on different development sectors such as

education, trade, agriculture and health and aim at improving access to information (Table 4). These telecentres charge much lower prices compared to the market rate, thus ensuring affordability by their primary target groups. Nabweru telecentre charges half the commercial rate, while Nakaseke, Kabale, Kivuli and Mtaa dispensary telecentres charge subsidized fees that are decided upon by key stakeholders based on what the community could afford.

Table 5 Fee Based and Free Services of Telecentres

Service	Frequency – number of telecentres (free) n=6	Percentage (%) citing free	Frequency – number of telecentres (fee) n=6	Percentage (%) citing fee
Telecommunications	0	0.0	6	100
Training / education	1	16.7	5	83.3
Information / knowledge dissemination	6	100	0	0.0
Secretarial	0		6	100
Culture and recreation	2	33.3	4	66.7
Health services	2	Some	2	Cost shared
Advisory and counseling	6	Some free	3	Free
Agricultural documents	3	Some free	3	Some
Outreach	3	Some free	2	Some

Table 6 Pricing Strategy for Services of Telecentres

Pricing strategy	Frequency – number of telecentres n=6	Percentage (%)
Price leader	1	16.7
Differentiation	0	0.0
Focus	5	83.3

Four telecentres - 66.7 percent of the respondents indicated that the community views the prices charged as fair while one telecentre - 16.7 percent suggested the prices charged were high. A further 16.7 percent (one telecentre) indicated that the prices are considered low (Table 4). All the telecentres indicated that they subsidize the prices charged for most of their services and results indicate that on average, the prices charged are fair (Table 4).

4.3.2 "In-kind" Support Subsidies to Telecentres

Only two out of the six telecentres studied (33.3 percent) indicated that they receive "in-kind" support subsidies from Internet Service Providers (ISPs) (Huruma and Kivuli) and from a software and computer training firm. These were both in Kenya. Four of the telecentres (66.7 percent) - Mtaa centre and the three telecentres in Uganda were not receiving any form of support from ISPs. Africa Online and WananchiOnline ISPs had provided free connectivity to Huruma and Kivuli telecentres for a period of six months and one year respectively. Telecentres in Uganda may want to consider approaching ISPs to solicit their support in advancing the telecentre movement. ISPs could also be requested to offer subsidized services to telecentres as part of social responsibility to society. Based on the findings of this study, strategic alliances and partnerships would help reduce the cost of services, enable more community members to use the services provided, ensure universal access and contribute to operational sustainability of telecentres.

4.3.3 Operational Costs vs. Revenues of Telecentres

An assessment of revenues collected and recurrent costs (Table 7) indicated that there was a net deficit between revenues over expenditure. Findings of the study indicated that telecentres in Kenya and Uganda are not financially sustainable as the average net difference between revenues over recurrent expenditure was negative seven thousand seven hundred fifty six US dollars (-7756.03 US$) per telecentre per year. This finding is in agreement with that of Oestemann and Dymond (2001), who observed that while profitability is possible in developed countries, many telecentres in developing countries have not moved beyond dependency on institutional or volunteer support and donations. The findings of Benjamin (2001) however showed that there are exceptions to this observation. Benjamin's study (2001) indicated that unlike other telecentres in South Africa, the Gaseleka telecentre was financially viable and met all its running costs from turnover. Data of the present study for Kivuli and Huruma suggested that the two telecentres were financially sustainable but a closer examination through interviews revealed this was not the case. The core business of the two latter telecentres is training and telecommunications. The two centers had benefited from free Internet connectivity for one (1) year and six (6) months respectively and staff salaries are met by their parent organizations. Huruma telecentre is the newest telecentre, and was launched in September 2001 and Software

Technologies Ltd. had supported all the training and certification at the telecentre. Both Huruma and Kivuli have only one professional staff each and these carry out additional activities pertaining to their parent organizations. One limitation of the financial analysis was that some of the respondents did not provide all the data requested on revenues and expenditures, hence calculations are based on data available. Following on from Whyte's (2000) definition of financial sustainability - a situation where the revenues of a centre (including grants, in-kind support and cash earnings) are greater than the expenditures over a period of at least 3 years, it can be concluded that telecentres in Kenya and Uganda are not financially sustainable as data from at least five out of the six telecentres studied (83.3 percent) have been operational for about 3 years and data from four of these telecentres (80.0 per cent) indicate a deficit in revenue over operational costs over 3 consecutive years. Interpretation of data on financial sustainability should, however, be treated with caution because as Barney (1996) argued, financial measures ignore a firm's performance in areas such as teamwork and relationships, which are often not measured in monetary terms. Itami (1987) stressed this point further and argued that significant capabilities were often undervalued and were difficult to describe. It would, therefore, be ideal if performance could be measured in both financial and non-financial values as suggested by Drucker (1999). Norton *et al*, (2002) also pointed out that sustainability of telecentres using financial figures is complicated because telecentres offer both public good and private services.

Table 7 Excess / Deficit of Revenue over Expenditure of Telecentres

		US$	US$	US$	US$	US$	US$
Country	**Respondent**	**1999**	**2000**	**2001**	**2002**	**Total**	**Average**
Uganda	Nabweru	-3107.37	-4794.83	-5540.94	-28543.15	-41986.29	-10496.57
	Nakaseke	-370.90	-19290.91	-19625.43	-20570.77	-82858.01	-20714.50
	Kabale	-21509.45	-27983.41	-28482.89	-28344.88	-106320.63	-26580.16
Kenya	Kivuli	0.00	3531.67	6382.01	12612.04	22525.72	5631.43
	Mtaa		-383.88	-12247.38	-12108.16	-24739.42	-8246.47
	Huruma		0.00	-8939.88	50550.08	41610.20	13870.07
	Total					-191768.43	
	Total	-47987.72	-48921.35	-68454.51	-26404.85	-191768.43	-7756.03
	Average	-11996.93	-8153.56	-11409.09	-4400.81	-31961.41	

Research findings indicated that telecentres in Kenya and Uganda are still reliant on donor funding. McGill (1994) defined sustainability as the ability of an organization to perform after

the external support or technical assistance has withdrawn. While research by ITU (1998) suggested that telecentres that rely on development partners or public funding are less likely to be financially sustainable after the project period, findings of the present study support these positions and that of Norton *et al.*, (2002) who established that telecentres serving sparse populations are generally unsustainable hence require funding assistance from other sources. The telecentres in Uganda and Kenya, therefore, need to explore strategies for generating additional revenue to ensure telecentres are able to meet their operational costs when the donors pull out.

The present study observed that development partners such as UNESCO and IDRC, together with the local management and the community in Uganda are working out strategies to generate additional income. UNESCO for example indicated that they have developed a further project to build onto existing telecentre activities. The Nakaseke telecentre hopes to evolve into a Multimedia center (Appendix 7). UNESCO also plans to establish a rural radio service for both Nakaseke and Nabweru telecentres, which are expected to generate adequate revenues to meet their operational costs. This should ensure sustainability and success of telecentres and as pointed out by Rothschild (1989), firms with enough money, strong credit rating, and access to low-cost loans have the key to success. Telecentres in Kenya and Uganda must aim at attaining financial viability if they are to be sustainable.

4.3.4 Membership Fees

Twenty percent of the respondents (one telecentre out of five - Nakaseke telecentre) indicated that they were charging a membership fee which all schools had been requested to pay, to enable their staff and students access the services and products of the telecentres. The UNESCO – Uganda office respondent indicated that the Nakaseke community has a hospital, nursing school, teacher training college, eight secondary schools, and 24 primary schools. A number of schools had responded positively and the revenue collected would be used to meet the operational costs of the telecentre after the project period. The remaining 80 percent of the telecentres (four telecentres – one in Uganda and three in Kenya) were not charging a membership fee. While Nakaseke telecentre has an organizational policy of charging schools and colleges a membership, the other telecentres are yet to decide at what point to start charging a membership fee. Based on observations made during the present study, it would be desirable that all telecentres in-built a

culture of charging a membership fee to not only schools and colleges but to all institutions and individuals in the community. This would help ensure financial sustainability of the telecentres

4.3.5 Partnerships with other Institutions

Results obtained indicated that all the six telecentres had partnerships with other institutions including international and national research organizations, universities, central and local government, development partners, professional associations, health centers, schools and private sector. Such partnerships have been shown to be important and indeed as described by the Corporate Research Foundation (1999), partnerships are the key to providing effective solutions and continuous improvement performance. The CFS initiative in Newfoundland is for example trying out a partnership model with several sponsors that contribute donations (cash and in-kind) to the project (Rural Newfoundland Cultural Survival Project, 1997). Findings of the present study indicated that the various partners have made complementary contributions and have enabled the application of ICTs in various development sectors such as agriculture, health and education. ICTs are but mere pipes but the partnership has worked with the community to ensure there is water flowing in the pipes. The development partners for example provided the initial capital, equipment, established the telecentres and met most of the operational expenses. In Uganda, the central government, through the Uganda National Council for Science and Technology (UNCST) provided logistical, advisory and management support. The local government contributed to the operational costs, provided housing, furniture, advisory and management support (Appendix 9). Research institutions such as the National Agricultural Research organization (NARO) and the CAB International (CABI) Africa Regional Centre, and Makerere University supported various sectoral projects together with the telecentre management. Other partners include the Uganda Public Libraries Board, Uganda Telecom Limited, National Farmers Association, Technical Centre for Agricultural and Rural Co-operation (CTA), World Vision and DENIVA. Telecentres in Kenya had noticeably fewer relationships with research and educational institutions, research and international institutions, professional associations and other projects compared to those in Uganda (Appendix 6). The ISPs provided free connectivity to the Internet to Huruma and Kivuli telecentres in Kenya, NGOs supported various activities, the government or in some cases the community provided housing and furniture, and the local management committee provided management support

(Appendix 9). Whereas telecentres in Kenya had a relationship with ISPs, telecentres in Uganda have not yet established a relationship with local ISPs. Telecentres in Uganda should consider approaching ISPs to contribute to the sustenance of telecentres, as this would be in line with Andreasen's (1999) suggestion that profit and nonprofit institutions form partnerships that add value to, or complement each other's activities.

From the findings of the present study, it is imperative that strategic multiple partnerships be established to help pool together the strengths of different institutions, provide interest, enthusiasm and synergism. According to Baya (personal communication, 2002[2]) – currently the Health Education Officer in Kwale, all health NGOs operating in the District are collaborating and have formed the Kwale Health Forum. This body meets monthly to discuss health priority activities for the District and the recommendations of the Forum are incorporated in the Kwale District Ministry of Health's work plan. This partnership has helped coordinate health, training and information dissemination activities, has led to cost and resource sharing, has helped reduce duplication of effort and has increased interest, efficiency and effectiveness of health related initiatives in the district. The Forum has also increased awareness of health information initiatives and ensured a wider reach into the rural community. This practice is similar to that adopted in Hungary, where NGOs partnership with telecentres to enhance cooperation and sustainability of ICT initiatives (Roman and Colle, 2002). Telecentres in Uganda and Kenya may want to explore this type of partnership to enhance sustainability. Cooperation should focus on strengthening the capacities of local firms and partnerships could include alliances, joint ventures, networks, franchising and consortia with local, national and international bodies. This suggestion would agree with that of Lorange and Roos (1993), who observed that strategic alliances enable firms to pursue their individual strategies despite limited resources and with Drucker's (2000) thinking that business growth and expansion (in the twenty first century) will be based on alliances, partnerships and joint ventures with firms located in other areas.

Findings of the present study indicated that telecentres in Uganda had no relationship with financial institutions because telecentres are not registered as individual entities. A similar situation exists in Kenya. They can, therefore, not borrow funds from financial or commercial

[2] D. Baya, Kenyan Health Education Officer, Ministry of Health, Kwale, Kenya, personal communication, Sep 2002

institutions. Mechanisms should, therefore, be explored to register telecentres as community institutions with a status that enables them secure loans for expanding their service and product base, especially where the business plan indicates viability. This would enable the telecentres to try out some of the innovative ideas they have for income generation. This suggestion is in line with Peters and Austin (1994) argument of constant experimentation and innovation. Similar institutions in Bangladesh have tried out a 50.0 percent loan and 50.0 percent self-financing model with local operators and this has proved successful and sustainable (Harris, 2002). The Grameen women model in Bangladesh based on debt financing has equally proved to be successful and sustainable (Yunus, 1997).

4.4 Analysis of Human Resources Sustainability

4.4.1 Staff Numbers per Telecentre

The numbers of staff working at the telecentres ranges from one (1) to 11 per telecentre, with an average of five (5) staff per telecentre in the industry (Table 8). The highest for Uganda was 11, the lowest three (3) with and average of seven (7) workers. In Kenya the figures stood at six (6), one (1) and three (3) respectively. The average number of male staff per telecentre was three (2), while for females it was two (2). The average number of male professional staff was two (2) while that for female professional staff was one (1). The number of female staff was much lower than that of male staff (ratio of two to three (2:3). Telecentre management may want to encourage more women to work in telecentres to ensure women are not left behind in the ICT sector and to avoid a gender divide. It is worth noting that in Kenya, Kivuli telecentre was operating with only one (1) staff member and Huruma telecentre with two (2) staff members. Having adequate staff (at all levels) in a telecentre is crucial if the objectives of the institution are to be achieved and as pointed out by Lee and Miller (1999), the human element is significant in strategy execution. It may be necessary to increase the staff-base needs at Kivuli and Huruma telecentres to ensure sustainable delivery of services but such enlargement should be in line with available financial resources. The average number of volunteers per telecentre was two with a female to male ratio of one to three (1:3). The principle of recruiting volunteers is to train the youth for free with the understanding that they shall volunteer themselves to work at the

telecentres. The number of volunteers at the telecentres has, however, been reducing with time because some of the trained youth find jobs after training, hence cannot be retained.

Table 8 Number of Staff Employed at Telecentres by Gender

Country	Respondent	Total male staff	Total female staff	Total staff	Professional male staff	Professional female staff	Temporary male staff	Temporary female staff	Male volunteers	Female volunteers
Uganda	Nabweru	3	3	6	1	0	0	0	1	2
	Nakaseke	7	4	11	3	4	3	1	3	1
	Kabale	2	1	3	2	1	0	2	0	0
Kenya	Kivuli	1	0	1	1	0	0	0	2	0
	Mtaa	3	3	6	1	0	2	3	8	4
	Huruma	2	0	2	1	0	1	0	1	0

4.4.2 Qualifications of Telecentre Staff

The average local professional staff per telecentre is one (Table 8). Table 9 summarizes the qualifications of staff by gender. Only two (2) telecentres (Nakaseke and Kabale) had staff with post-graduate training (one male and one female). Four telecentres had graduate staff (Nabweru, Nakaseke, Mtaa and Huruma). Four telecentres had staff with diploma qualifications (four male and two female). The average number of staff per telecentre with a diploma was one. Telecentre staff must be trained in various aspects of ICTs, community development and management to be able to respond to the varying queries and needs of the community. Having well trained staff strengthens the human resources capability of the telecentre. This would be consistent with the emphasis placed on training by Drucker (1964) and Liebeskind (1996) who argued that institutions need staff that are able to create and apply knowledge, if they are to build and sustain competitive advantage. Mariotti (1997) further showed that competitive advantage of institutions is created by a special combination of skilled people and technology.

Table 9 Number of Staff Employed at the Telecentre by Qualification and Gender

Country	Respondent	Post graduate Male	Post graduate female	Graduate male	Graduate female	Diploma male	Diploma female	"A" level male	"A" level female	Secondary school male	Secondary school female	Primary school male	Primary school female
Uganda	Nabweru	0	0	1	0	0	0	1	2	1	0	0	1
	Nakaseke	0	0	2	0	1	1	3	2	0	0	0	1
	Kabale	1	0	0	0	1	1	0	0	0	0	0	0
Kenya	Kivuli	0	0	0	0	1	0	2	0	0	0	0	0
	Mtaa	0	1	1	0	1	0	1	0				
	Huruma	0	0	1	0	0	0	1	0	0	0	0	0

4.4.3 Training Courses for Telecentre Staff, Volunteers and Community Members

Richardson (1997) stated that sustainability "is the end result of catalyzing empowerment and sustaining people's participation in their own development". Findings of the present study indicated that telecentre management has made efforts to empower people to be able to participate in their own development and several training courses were held for staff, volunteers and community members (Table 10). The average of total number of courses held between 1999 and 2002 for telecentre staff was eight (8) per telecentres, while volunteers and community members received five (5) trainings each. During this period, more courses were held by telecentres in Uganda (30 courses) compared with Kenya (15 courses). This may be due to various factors including the fact that telecentres in Uganda have operated for a much longer time and moreover, Ugandan telecentres had many different add-on projects that were multidisciplinary in nature with capacity building activities. Telecentres in Uganda also collaborated in most of their training activities thus invited staff from other telecentres to participate in training. There were, however, no training courses that were deliberately targeted at management committee members. Management of telecentres must have adequate capacity developed at project and national level, with appropriate skills, expertise and experience in handling the operations of the telecentres. Various projects are also using ICTs at the telecentre to train community members in health (hygiene and HIV/AIDs) and agriculture (crop and animal husbandry) related areas and training materials and local content have been developed. Local content materials have been translated to local language to bridge the language barrier. The governments of Kenya and Uganda may want to consider bridging the human resources gap by providing technical experts where required, as in the case of Canada, where the government has

committed experts to provide technical support to rural telecentres (Roman and Colle, 2002). This would ease some of the constraints experienced by telecentres, because there are often delays in maintenance and repair of equipment because expertise does not exist in the rural areas. Experts have to come from Kampala in Uganda in the case of Nakaseke or Mombasa in the case of Mtaa dispensary centre in Kenya.

Table 10 *Number of Training Courses held by Telecentres*

		Courses for telecentre staff					Courses for volunteers					Courses for community members				
	Respondent	1999	2000	2001	2002	Total telecentre staff	1999	2000	2001	2002	Total volunteers	1999	2000	2001	2002	Total community
Uganda	**Nabweru**	0	3	9	4	**16**	3	3	8	1	**15**	3	3	8	5	**19**
	Nakaseke	2	2	6	1	**11**	3	3	3		**9**		1	2	2	**5**
	Kabale			3	0	**3**					**0**			1		**1**
Kenya	**Kivuli**				3	**3**				1	**1**					**0**
	Mtaa			4	4	**8**			2	1	**3**					**0**
	Huruma			2	2	**4**			2	1	**3**			2	1	**3**
						0										
	Mode				4	**3**	3	3	2	1	**3**			2		**0**
	Mean	1.00	2.50	4.80	2.33	**7.50**	3.00	3.00	3.75	1.00	**5.17**	3.00	2.00	3.25	2.67	**4.67**
	Highest	2	3	9	4	**16**	3	3	8	1	**15**	3	3	8	5	**19**
	Lowest	0	2	2	0	**3**	3	3	2	1	**0**	3	1	1	1	**0**

4.4.4 Motivation of Telecentre Managers

All the respondents (telecentre managers) indicated that they were motivated to work at the telecentre by a number of factors, which include training, exposure to ICTs, interaction with the community and with other institutions, imparting knowledge to the youth and money. The managers have used different strategies to motivate volunteers. Research findings indicated that 33.3 percent were motivated by free training, 33.3 percent by access and exposure to ICTs and 33.3 percent by the opportunity to work with the community and establish local and international networks. Sixteen point six seven (16.7) percent of the respondents indicated that training motivated staff while another 16.7 percent cited exposure to working with the community (Table 11). Fifty (50.0) percent cited building networks and 33.3 percent cited all the three factors.

Table 11 Motivation of Manager, Staff and Volunteers

Motivator	Frequency - number of telecentres (manager) n=6	Manager (Percentage %)	Frequency - number of telecentres (staff) n=6	Staff (Percentage %)	Frequency - number of telecentres (volunteers) n=6	Volunteers (Percentage %)
Training	0	0.0	1	16.7	2	33.3
ICTs exposure	0	0.0	0	0.0	2	33.3
Interaction with community /others	0	0.0	3	50.00	2	33.3
A number of factors	6	100.0	2	33.3	0	0.0

Research findings indicated that the staff turnover rate has been on average low (Table 12). This is encouraging considering that telecentres are a very recent phenomenon in the East African region and management should do all they can to avoid brain drain and retain their staff. It takes time to train telecentre managers and most of them have grown on the job. Telecentre managers have been trained on the job and the unique training, exposure and experience they have received makes them vulnerable to being head hunted by employers offering more lucrative packages. These managers, therefore, need to be motivated and need incentives that will retain them on the job. This would be in line with the argument by Peters and Waterman (1982) who emphasized the need for management to focus on staff emotions and motivation and argued that successful organizations are those with people with strong feelings of belonging. It remains true, however,

that staff can only feel they belong if their employers deliberately instill in them the sense of being wanted and appreciated.

Table 12 Staff Turnover Rate

Staff turnover rate	Frequency number of telecentres n=6	Percentage (%)
None	2	33.3
Low	2	33.3
High	2	33.3

4.4.5 Leadership

Mintzberg and Quinn (1991), and Holmes (2001) observed that good leadership is crucial for the success of any firm. Observations and interviews carried out on the present study indicated that the leadership of the telecentres has contributed to the success of the telecentres. Fifty (50.0) percent of the respondents indicated participatory style of management of telecentre activities had led to success of the telecentre, 33.3 percent indicated that success was due to a combination of factors including guidance, empowerment and participatory style, while 16.7 percent indicated that this was due to guidance and empowerment of staff, volunteers and the community members (Table 13). Respondents indicated that involvement of community members ensures that all parties share a common goal, listen to each other and respond to community needs. This inclusive and empowering approach implies both a top-down and bottom-up cultural development strategy and is in agreement with the findings by Jones (2000), who argued that to ensure sustainability, firms should use an appropriate combination of the 'unitarist' cultural, top-down approach and the 'pluralist' cultural, bottom-up approach. The leadership qualities of the present study's telecentre managers agree with those presented by Komives and McMahon (1998), who stated that good leaders are inclusive, empowering, purposeful, ethical and process oriented. Coulson-Thomas (2001) also supported these sentiments and added that good leaders are absorbed in the customers' problems. The need for good leadership is further supported by Holmes (2001), who suggested that the approach of liberated leaders should be based on strong relationships with stakeholders, mutual trust and shared belief.

Table 13 Leadership Factors Contributing to Success of Telecentre

Success factors	Frequency - number of telecentres n=6	Percentage (%)
Participatory style of management	3	50.0
Guidance, empowerment, participatory style (combination of factors)	2	33.3
Guidance and empowerment	1	16.7

4.4.6 Ownership and Community Participation

All the respondents (100 percent) indicated that the telecentres were publicly owned with different types of joint ownership ranging from community only to community with more than three partners as indicated in Table 14. Telecentres in Uganda were established by donor agencies but are owned by the communities they serve. The local administration of Nakaseke and Nabweru telecentres are actively involved in the running of the telecentres and are ready to take over management together with the local management committee at the end of the project. The local administration is also providing partial funding of the telecentre's activities while the UNCST provides guidance and advisory support (Appendix 6). The development agencies have a strong say in the running of the telecentres because they have objectives to meet and would like to see the realization of these objectives. In Kenya, the Koinonia community owns the Kivuli telecentre and the Huruma telecentre is owned by the NCCK and the community. The community and the Ministry of Health own the Mtaa dispensary center. The findings of the present study indicated ownership and governance structures. The community ownership has increased commitment to the welfare of the telecentre and has been catalytic in creativity and innovation. These observations are in agreement with Peters and Austin (1994) who described ownership as being pivotal in achieving superior quality service, innovation and sustainability. Benjamin (2001) also stressed this point and suggested that the success of telecentres depends on "the energy and commitment of the local owners and managers".

Table 14 Ownership of Telecentres

Country	Telecentre	Ownership			
		Community only	Community and one partner	Community and two partners	Community and more than three partners
Uganda	Nabweru			v	
	Nakaseke				v
	Kabale			v	
Kenya	Kivuli	v			
	Mtaa		v		
	Huruma			v	

Respondents in Uganda indicated that the community perceives the telecentre as a very important institution in their community whereas in Kenya, telecentres are viewed as important. Five telecentres indicated that the community supported the activities of the telecentre and provided housing facilities for the telecentres (Appendix 8). The local council provided housing facilities for the telecentres for Nabweru and Nakaseke telecentres, the Ministry of Health for Mtaa dispensary center, NCCK for Huruma, Kivuli Centre for Kivuli telecentre and the African Highlands Initiative for Kabale telecentre (Appendix 7). In Nakaseke, housing facilities for satellite telecentres was provided by individual community members and in some cases community members contributed towards rent for the premises. Respondents indicated that the community members are actively involved in the activities of the telecentres and the level of involvement was indicated as very actively involved by 50.0 percent of the respondents, low by 33.3 percent and average by 16.7 percent of the respondents (Table 15). These findings are consistent with those of Benjamin (2001), who observed that the strength of the community links were crucial to the success of the Gaseleka telecentre in South Africa. Community involvement ensures strategic decisions are made in consultation with a wide range of stakeholders. Hart (1995) as quoted by Sharma and Vredenburg (1998) further noted that community involvement is crucial to sustainability of institutions.

Table 15 Involvement of Community Members

Extent of involvement	Frequency – number of telecentres n=6	Percentage (%)
Very high	3	50.0
High	0	0.0
Average	1	16.7
Low	2	33.3
Very low	0	0.0

Respondents of the six (6) telecentres indicated that community contribution was in form of materials and labour. The community members are also involved in identifying the changing needs of the community through meetings, evaluation and feedback. This helps identify emerging needs and as Stacey (1998) argued, people's attitudes, tastes, requirements for service, technologies and policies make the future become uncertain and ambiguous. This, therefore, calls for continuously scanning of the internal and external environments and involvement of the community members is one way of finding new needs and wants and helping telecentres adapt to changes affecting the community.

4.5 Analysis of Policy and Regulatory Framework

Policies can be simply defined as a statement of intent by the government of the day. Harris (2002) emphasized the need for coherent national policies (and strategies) if ICTs are to be applied effectively and successfully. There have been many positive developments in both Uganda and Kenya and the governments of the two countries recognize the role that ICTs can play in accelerating social and economic development. There has, however, been varying degrees of liberalization and increased private sector participation in the telecommunications sector in both countries.

4.5.1 Kenya

Kenya Government Policy

According to Mutai (2002) - the Secretary General of Africa Telecommunications Union (ATU), the existing policy and regulatory framework has favoured expansion of communications infrastructure in Kenya. Kenya published its Communications Bill in 1997 and parliament enacted the Kenya Communications Act in 1998. The government also issued a government policy framework paper – Postal and Telecommunications Sector Policy Statement in 1997, to provide direction for the telecommunications sector and optimize the sector's contribution to ensuring reliable, efficient and affordable communication services (Institute of Economic Affairs, 2002). Other government interventions include the work of the Ministry of Finance and Planning, which is working on a draft ICT policy to address prevailing inequalities in access to ICT services. The aim of the ICT policy is to prepare Kenyans to effectively participate in the global information economy (Mutai, 2002). The Poverty Reduction Strategy Paper (PRSP) also includes ICTs issues and stresses that the government recognizes that ICTs are engines of development and economic growth and will strive to provide an enabling policy environment that underpins sustainable development and growth of the ICTs to poor rural and urban populations (Ministry of Finance and Planning, 2001). Other government initiatives that aim at promoting ICTs in Kenya include Decentralized HIV/AIDs and Reproductive Health Projects (DARE), Early Childhood Education and Development (ECED), Kenya Local Government Reform Programme (KLGRP), National Poverty Eradication Plan (NPEP), Kenya Rural Development Strategy (KRDS), National Information Infrastructure (NII) to promote and electronic-enabled Kenyan society and National Agriculture and Livestock Extension Programme (NALEP) (Ministry of Finance and Planning, 2001). Kenya, however, lags behind Uganda in the use and application of new ICTs due to licensing restrictions. Only a few educational and financial institutions have for example been granted VSAT licenses in Kenya and most of these are only allowed to transmit data and not voice. Use of VSATs would ensure satellite up-links, high-speed voice and data transmission and access to international bandwidth for ISPs (Carson, 2002). Kenya, therefore, needs to establish policies for VSAT technology to be able to foster social and economic growth in rural and urban poor communities. Most providers use leased lines, which offer lesser quality. Telkom Kenya (government owned) is still a monopoly and is not only the only fixed-line telephone company but also controls Jumbonet

(Internet backbone in Kenya). There are only 2 cellular operators in the country – KenCell and Safaricom, but these have to transmit through Telkom Kenya (Table 16). Currently, Kenya has about 62 licensed ISPs but only about half of these are operational (Institute of Economic Affairs, 2002). The findings of this study indicate that there is an urgent need to open up the telecommunications sector to the private sector to ensure competition, improve quality, expand and diversify products and services.

Communications Commission of Kenya (CCK)

Findings of the study indicated that the CCK was established in 1999 to license and regulate the communications sector in Kenya (Table 16). The CCK has enhanced the liberalization process, broadened the market to more investors in telecommunications, radio and postal services. The CCK recognizes telecentres as important community institutions, hence makes it easy to start telecentres. Registration requirements are simple, and include a one-off affordable registration fee of about thirteen US dollars (US$13). Registration fee is, however, waived in Uganda as an incentive to attract investors. A certificate to operate is then issued enabling the operator to sell telephony to the public. Other incentives in Kenya include priority when demanding for service (i.e. the license gives the operator first priority, compared to other firms or individuals that may have requested for services much earlier) (Appendix 10). The CCK recognizes the fact that rural communications are part and parcel of life and as necessary for development. It encourages the licensing of operators wishing to invest in disadvantaged areas that have good strategies of encouraging universal access such as investing in fixed telephones or community telecentres. The CCK is currently (November 2002) working with a Canadian consultant (with support from IDRC) to develop a sectoral telecommunications policy, strategies and a rural communications development fund that aims at ensuring universal access. The pricing policies and subsidies will also be addressed by the on-going study. The emerging policy should, however, be implemented in full and in consultation with all key players in the sector if rollout of telecentres is to be encouraged.

4.5.2 Uganda

Uganda Government Policy

Uganda has made tremendous progress in the telecommunications sector as a result of government policy and of liberalization and privatization, which has contributed to the overall socio-economic development in the country (Othieno, 2002). The national telecommunications policy was put in place much earlier in Uganda – 1996, compared to Kenya - 1997. The Uganda Communications Act became law in 1997 and this led to the reforming and restructuring of the communications sector to increase penetration and level of communication through private sector investment. The telecommunications sector has been extensively liberalized in Uganda and the market is growing. The once government owned Uganda Telecom (UTL) was privatized in 1998 and a second national operator – Mobile Telephone Network (MTN) licensed the same year. The number of licensed mobile operators stands at three and these include MTN, Celtel and UTL-Mango. There are also about 17 licensed ISPs (Uganda Communications Commission, 2002). According to the Uganda Communications Commission (2001), the country had a teledensity of 0.21, with 70 percent of the communications services being concentrated in urban areas, but has since grown to about 1 line per 100 inhabitants (mobile and fixed lines). The Government of Uganda has employed a number of ICT related initiatives that aim at promoting development namely – the Poverty Eradication Action Plan (PEAP); the Universal Primary Education (UPE), the Uganda Information Infrastructure Agenda, the Information and Communication Technology Policy Development and the Plan for Modernization of Agriculture (PMA) amongst others (Appendix 7). Uganda is ahead of Kenya in the use of wireless connections, and VSATs are licensed and are more widely used.

Uganda Communications Commission (UCC)

There has also been great improvement and development of the communication sector leading to an increase in the number of service providers, diversification of services offered, reduction of tariffs for services, improved customer care by service providers and penetration of services into the country. The UCC is an independent regulator that was established in 1998 with the objectives of enhancing national coverage of telecommunications services and products, to develop rural communications services, diversify communication services, encourage participation of private investors and to encourage competition through regulation and licensing.

With assistance from IDRC, the UCC conducted a study in 2000 and its recommendations were used to develop policies and strategies for implementing the policy for Rural Communications Development and the establishment of the Rural Communication Development Fund (RCDF), which aims at attaining universal access to telecommunications. As an incentive, the UCC has waived license fees for telecentres to entrepreneurs who wish to invest in establishing telecentres (Appendix 10). Those using VSATs must, however, pay a registration and license fee of about two thousand five hundred US dollars (US$2,500). The UCC will also subsidize investors investing in remote and sparsely populated areas based on a subsidy forecast of 10 years. The minimum subsidy concession will be determined by the financial cash flow and will aim at bring the investor to zero. The Commission aims at subsidizing about 25 investors this year. The UCC is also currently discussing support they will render to existing telecentres in the country.

Although the two countries have made good progress in formulating sectoral and regulatory framework to promote use and application of ICTs, the existing provisions are still inadequate. It would be desirable that ICTs be addressed and implemented as mega policies and that the two governments play a more active role in ensuring sustainability of telecentres and other ICT initiatives. In Canada and Australia for example, the governments have made financial and technical commitments to rural telecentre established in disadvantaged areas. The Canadian government has also committed people and funding to ensure Internet availability in rural and urban communities, while the Australian government has committed itself to providing support for telecentres for at least four years (Roman and Colle, 2002).

Table 16 Comparison of Uganda and Kenya ICT Policy and Regulatory Framework Trends

	Uganda	Kenya
Telecommunications policy	1996	1997
Communications Bill	1996	1997
Communications Act	1997	1998
Liberalization of Telecom	(Yes) - UTL (privatized) and MTN (1998)	(No) – government monopoly
Communications regulator	1998	1999
Land line phone providers	2	1
ISPs	17 operational	30 operational
VSAT	License available to all	Licensing restricted
Cellular phone providers	3	2

4.6 Analysis of Sustainability Strategies Used by Telecentres

4.6.1 Constraints and Challenges of Telecentres

Research findings indicate that several sustainability strategies have been developed in response to the challenges and constraints faced by the telecentres. These include partnerships with development partners, government, private sector and the community, training of trainers to ensure a multiplier effect, marketing, community involvement, development of add-on projects, soliciting for new development partners, diversification of services and products, concentrating on quality and lowering of costs for services and products as well as government support through development and enforcement of policies. All the respondents indicated that the most important factors that attract users to the services and products of telecentres were ICTs and information resources. Other factors mentioned included location of the telecentre and subsidized fee for services. The key constraints that pilot telecentres have encountered include human resources, funding and poverty. Other constraints include low utilization of services, illiteracy, location and distance factors and poor connectivity.

The major challenges cited were financial resources, inadequate human resources, inadequate telecommunications infrastructure, language barrier, high illiteracy level and underutilization of services (Table 17). This implies that there may be cause and effect linkages between poverty and demand for services. Oestemann and Dymond (2001) observed that another challenge is that the objectives of many of the institutions responsible for operating the telecentres are to foster and facilitate specific development, and hence the local management working towards achieving the set objectives is not driven to primarily make profits. Kwale district for example has some of the poorest socio-economic and health indicators in Kenya (*AfriAfya*, 2002:2) and the community cannot afford to pay commercial rates for services, especially with the cellular telephone the project is using. The users should, however, not be denied access to health information because they cannot afford. The findings of the present study were also consistent with those of Mansell and When (1998); McManus (1999); Gaster (2000); Nyiira (2000); Villageearth (2000); IDRC (2002) and Roman and Colle (2002). Regarding location, Norton *et al.*, (2002.) suggested that telecentres should be located in gender-neutral locations.

Table 17 Challenges Faced by Telecentres

Challenges	Frequency (Times mentioned) n=5	Percentage (%)
Increasing human resources / developing skills	4	80.0
Increasing financial resources	3	60.0
Increasing usage of services	2	40.0
Improving / upgrading infrastructure (connectivity, telecommunications)	2	40.0
Dealing with illiteracy	2	40.0
Poverty – some users cannot afford to pay for services	2	40.0
Staff retention	1	20.0
Long distance to telecentre	1	20.0
Image of telecentre (because of being housed by local administration)	1	20.0
Intimidating factors around telecentre (court, police station, prison)	1	20.0
High costs of publishing and printing of local content	1	20.0
Transport for outreach activities	1	20.0
Technophorbia	1	20.0
Delays in maintenance	1	20.0
Employment opportunities for trained graduates	1	20.0
Keeping pace with the rapid technological advances	1	20.0
Coping with competitors using modern technologies that are cheaper (VSAT)	1	20.0
Language barriers	1	20.0
Access to appropriate information	1	20.0

The level of demand for services was on average rated as fair (Table 18). Demand was rated as high at Nakaseke telecentre in Uganda and low by Nabweru and Kabale telecentres. In Kenya, demand was rated fair by Kivuli and Mtaa centers and low by Huruma telecentre. Some of the strategies that have been implemented to increase demand include launching of telecentres, and respondents indicated that this had contributed to awareness creation. Telecentres that did not have a formal launching may want to consider launching their centers. It is necessary to persuade customers to use the telecentre facilities and this could be done through promotion among other strategies. Telecentres need an accurate understanding of what their customers value or what they would value. Telecentres should, therefore, constantly find out the existing and new customers' needs and wants. The promotion strategy must be creative and flexible and messages must put out to customers propositions that are convincing and that demonstrate the value of what will be offered to customers. The promotion strategy adopted will however depend on the telecentre's resources and capabilities. Telecentre management must also ensure they have a competitive advantage over their rivals.

Table 18 Demand for Services

	Respondent	Level of demand for services				
		Very high	High	Fair	Low	Very low
Uganda	Nabweru				v	
	Nakaseke		v			
	Kabale				v	
Kenya	Kivuli			v		
	Mtaa			v		
	Huruma				v	

Respondents indicated that some potential users (current non-users) do not use the services and products provided at the telecentres because of wrong perceptions, intimidating factors surrounding the telecentres, inadequate publicity, language barriers, illiteracy, technophobia and poverty. Table 17 presents the specific challenges faced by telecentres in achieving their goals. The challenge of inadequate human resources was cited by all the respondents, inadequate technical skills by 80 percent, inadequate telecommunication infrastructure by 40 percent, high illiteracy levels 40 by percent, inadequate access to relevant and appropriate information by 20 percent and delays in maintenance and repair of equipment by 20 percent. Other challenges cited include keeping up with technological advances, dealing with competitors, poverty, technophobia, intimidating factors, distance, location and lack of transport for outreach activities. The present study suggests the need to prioritize the constraints and costing of their interventions to enable existing and emerging telecentres become sustainable and more efficient and effective in service delivery.

4.6.2 Sustainability Strategies of Telecentres

Telecentre management of the six pilot telecentres have tried out several strategies to address sustainability. These include:

The Practice of Strategic Management

The study revealed that telecentres are practicing strategic management as a strategy of ensuring sustainability. All the telecentres had a vision/mission, objectives, strategies and plans. The

vision/mission indicated their reason for existence while objectives were used to measure their performance. This is in agreement with David (1995) who argued that strategic management is critical for developing and justifying requests for financial support, attracting people in a competitive climate and diversification of services. The telecentre objectives also help explain why the telecentres have focused more on the social aspects of the community and not so much on financial returns. The telecentres are, therefore, strategic in their orientation and are focused on achieving long-term objectives and the needs of their beneficiaries.

Research findings of the present study revealed that telecentres set explicit reasons about why they exist. All the six telecentres had a vision and mission. All the six telecentres had a vision and mission that focused on development. Sixty-seven (66.7) percent of the respondents (four telecentres) indicated that their vision and mission focused on providing development-oriented information to the communities using ICTs to the community for social and economic development. *AfriAfya's* (Mtaa dispensary centre) vision is for example 'to enhance ICTs for community health'. Thirty three (33.3) percent (two telecentres) had a vision and mission focusing on bringing about rural development through use and application of ICTs. These visions and missions are in agreement of the arguments advanced by Otsyina and Rosenburg (1997) and Harris (2000), which emphasized the role of communication in stimulating and sustaining development. Nourish (1998) also indicated that ICTs offer many possibilities for rural communities for communicating and exchanging information.

All the telecentres selected for inclusion in the present study had development objectives that they use to measure their performance. The six telecentres indicated that they had several goals and objectives that include empowerment of the community with information for development (66.7 percent), exploring the potential of ICTs for community development (16.7 percent) and provision of development information (16.7 percent). In Kenya, the objective of Kivuli telecentre focuses on enhancing computer literacy, competency, and creating career opportunities for the youth. The long-term objective of Huruma telecentre is to provide the community with information for development, training in computers and telecommunications facilities that contribute to poverty alleviation efforts and wealth creation. *AfriAfya's* (Mtaa dispensary centre in Kwale) objectives are to explore and develop mechanisms for harnessing community

knowledge and experience; explore innovative models and technologies for information management and communication at community level; enhance the capacity of members of the network in health leadership, knowledge management; communication; develop training modules for health knowledge management and communication and document and share experiences with others. In comparison, the objectives of Nabweru, Nakaseke and Kabale telecentres in Uganda focus on empowering local communities with information for development. The broad goal of the Kabale telecentre in Uganda is to sustainably improve the nutritional security and income in communities in intensively cultivated highlands while its overall objective is to demonstrate, test and promote the use of community based ICTs for rural community development and empowerment. The overall goal of Nakaseke telecentre is to stimulate rural development by facilitating access to information, learning resources and ICTs in the Nakaseke community and support improved medical services through telemedicine. This may explain why telecentres focus more on social aspects and not so much on financial returns. These findings are in agreement with Ernberg's (1998a) indication that pilot telecentres were established to test the potential of ICTs on social and economic development on a small scale. Other objectives cited include the provision of development information, and empowerment of community with information for development.

The study also indicated that to ensure financial sustainability, some telecentres prepared business plans and annual plans. Two of the telecentres interviewed (33.3 percent) had a business plan and these were both in Uganda (Nabweru and Nakaseke). Telecentres in Kenya have not yet developed business plans. Respondents indicated that about 66.7 percent of the telecentres have developed a strategic plan with the exception of Nabweru and Huruma telecentres. In the case of Kivuli telecentre, the strategy was based on the parent organization and was not specifically for the telecentre. All the telecentres (100.0 percent) had developed annual plans. This emphasizes the need for planning in ensuring sustainability and successful organizations in a turbulent environment. Telecentres therefore set explicit long-term plans through strategic planning.

Institution Development

Research findings of the present study indicate that another strategy that telecentres are practicing is developing the centers into institutions that can carry on the activities of the

telecentres beyond the project period. Institution development has been defined as "the process of improving the ability of institutions to make effective use of human and financial resources" (Israel, 1994). Table 15 indicates the various roles played by the government, the community, the private sector, development agencies and other partners in improving the ability of telecentres to make use of resources. Development partners have played different roles towards institutional development of telecentres (Appendix 6). The synergy from these partnerships has helped to strengthen the capacity of telecentres to overcome obstacles and bridge gaps. The IDRC, UNESCO, Rockefeller Foundation and other development partners combine training with tailored technical assistance services to telecentre staff, volunteers, management and community members. They have contributed towards capacity development in areas such as business planning, internal governance, sustainability and building local capacity through 'training of trainers'. All the telecentres in Uganda and one in Kenya (Mtaa dispensary centre) have a local management committee whose membership comprises representatives of different community groups. This body is elected and is accountable to the sub-county local administration and the UNCST in Uganda and to the *AfriAfya* board in the case of Kenya (Appendix 9).

In Uganda, the local administration has pledged to continue providing housing to the telecentre, paying salaries of some staff (Local Council rates) and paying allowance for security personnel (Appendix 9). The local management committees, together with national, regional and international organizations that are working with the telecentre managers in implementing projects along with development partners are working together to mobilize, sensitize and train community members to ensure local human capacity is developed (Appendix 6). The IntraDelta Management Consultants International Inc, (1997) pointed out that systematic training enhances the local system's capacity. Anyaegbunam, Mefalopulos and Moetsabi (1998) and Argyrus's (1998) concluded that firms must be committed to empowering staff to take more responsibility for their own destiny. The local administration of Nabweru and Nakaseke also plan to include the telecentre in the Local Council's budget and to introduce additional revenue generating services at the telecentres. The two telecentres have also developed business plans. In Kenya, Kivuli Centre, the NCCK and the Ministry of Health are housing the telecentres and staff salaries of key staff are being met by parent organizations or implementing agencies. Respondents in Kenya indicated that Local Management Committee members in Kenya have not received

training. The present study established that training of management should be given priority as this builds local capacity and helps focus not only on the immediate but also future needs and as pointed out by McGill (1994), to be sustainable, the institutional development process should be long-term.

Kenya does not have a national advisory committee that provides advisory services in a coordinated manner but the Kenya Information Society (KIS), which is a professional society fostering an information community in Kenya and is a project of the British Council. KIS is a response to create a forum for Kenyans to create awareness, engage in informed debate, and formulate strategies and pilot technologies to realize an information-empowered society. Among KIS' key activities are to foster establishment of telecentres as communal entry points to ICTs for various applications. KIS provides advisory services where called upon, and has provided intellectual logistical and technical support to the Huruma telecentre (Appendix 8). In Uganda, a national advisory committee (NAC) has been established and is coordinated by the UNCST. The NAC provides advisory services to local management committee members and other ICT related initiatives and has formed a network of experts that share a common vision. The Acacia National Secretariat and the National Steering Committee (who are members of NAC) have been trained in various aspects including financial and information management as well as business plan development. This has developed the capacity to streamline internal structures, strengthen management systems and promote better financial and personnel management. Buyek (1991) suggested that to ensure institutional development, there is need to strengthen management systems and improve institutional structures and relations among other factors.

Research findings indicated that there was good cooperation between telecentre management and the community and telecentre managers indicated that the cooperation between telecentre management and the community was on average rated as being very good (Table 19). Three telecentres - 50 .0 percent of the respondents rated the relationship as being very high, 33.3 percent (two telecentres) as high and 16.7 percent (one telecentre) as good. Staff, management committee, volunteers and community members have been trained (Table 9) and this has empowered the community and provided the requisite skills, human resources and organizational structure. This is in agreement with Kaplan's (1999) suggestion that institutions should be

equipped with the requisite aspirations, strategies, organizational skills, systems and infrastructure, human resources and organizational structure.

Table 19 Cooperation between Management and the Community

Relationship	Frequency – number of telecentres n=6	Percentage (%)
Very high	3	50.0
High	2	33.3
Good	1	16.7
Low	0	0.0
Very low	0	0.0

Respondents indicated that the community was consulted before implementation of activities and the community feel ownership of the telecentre and feel they have a right to participate in its management. One respondent (Nakaseke telecentre) indicated that there was need for more clarity on the roles between the implementing agency, management committee, telecentre staff and the community as this at times led to conflict. Another respondent felt that few members participated in the management of the telecentre and that more members could be more actively involved if trained.

Strategic Partnerships

Telecentres realize that sustainability of telecentres depends on strong partnerships (Appendix 6). The Huruma telecentre for example is located at the National Council of Churches of Kenya (NCCK) Huruma Medical Clinic premises. Various institutions including the British Council, the Kenya Information Society (KIS), SoftwareTechnologies, the NCCK and AfricaOnline, the NCCK Huruma Clinic and the Huruma community support the telecentre. The Mtaa dispensary health knowledge management and communication centre is managed by *AfriAfya* - a partnership of eight agencies and field centers including the Agakhan Health Services, AMREF Kenya Country Programme, CARE Kenya, Christian Health Association of Health, SatelLife HealthNet Kenya, PLAN International, Ministry of Health – Coast Province and World Vision International, Kenya. The network has seven pilot field sites using ICTs for health in rural

communities. *AfriAfya* has been thinking of the long-term and to ensure sustainability of its activities, has registered as an independent NGO. This will allow the organization to be directly responsible for its future management and finances and the Steering Committee will change to an Executive Board. The Nakaseke telecentre is a joint project of ITU, UNESCO, IDRC, British Council, Uganda Public Libraries Board and Uganda Telcom Limited (UTL). Oestemann and Dymond (2001) observed that while developing country initiatives are financed and supported by external agency partnerships, in developed countries, telecentres are initially or partially funded by state or provincial governments. What telecentres in Kenya and Uganda are lacking is adequate support from their governments. Partnerships help strengthen and complement each other's capacities and as emphasized by Johnson and Scholes (1999), an organization's capability is a complex combination of assets, people and processes that firms use. The telecentre management may want to consider forming strategic alliances or partnerships with additional institutions in the civil society, public and private sectors, or having increased donors to supplement the revenue collected.

Training of Trainers

Respondents of all the six telecentres indicated that community members have been trained as trainers and these in turn train others. This has ensured that there is a critical mass of trained trainers to assist with telecentre activities and train other community members (Table 10). This strategy has helped the telecentres develop a critical mass required to reach out to the community and ensure self-reliance. Consideration could be given to training aimed at improving management skills of the local management committee members and in order to keep abreast of rapidly changing and converging technologies, telecentres need to develop strategies that continue enhancing human capacity building. Retraining of the various stakeholders will be necessary to enable them keep up with the fast moving technological advances. This could be achieved through innovative programmes including distance learning and create a pool of experience in the region.

Awareness Creation

Telecentre management has realized the need to create awareness about the existence of the telecentres and various strategies have been tried out to create demand for the products and

services offered. Some of the marketing strategies tried out include sensitization and mobilization, outreach activities, establishment of satellite telecentres, development of content in appropriate format and language, and promotional materials (Table 20).

Table 20 Strategies Tried out for Creating Demand for Services and Products

Strategy	Frequency – number of telecentres n=6	Percentage (%)
Sensitization, consensus building and mobilization, awareness creation, promotion, marketing	6	100.0
Outreach activities	3	50.0
Repackaging information and translation of content into vernacular languages	3	50.0
Needs assessment to ensure services offered meet user needs	1	16.7
Satellite telecentres to reach more users	1	16.7
Monitoring and evaluation	1	16.7

Strategies for Dealing with Competitors

Telecentres in peri-urban and urban areas such as Nabweru, Kabale and Kivuli face competition from cyber cafes. Some of the strategies that the respective telecentres have employed to deal with key competitors include lowering of costs for services and products, improved quality, diversification of services and products (Table 21). Huruma telecentre has few competitors and the center is offering similar prices as competitors but is adding value and diversifying the services offered. Nakaseke telecentre, which is located in a rural set-up, is also facing competition but Mtaa dispensary center in Kwale (rural set-up) has no competitors as yet.

Table 21 Strategies Employed for Dealing with Competition and Sustainability

Strategy	Frequency – number of telecentres n=6	Percentage (%)
Lower cost of services / discounts	4	66.7
Improved quality	4	66.7
Diversification of services and products	3	50.0
Value addition to existing services	2	33.3
Promotion and publicity material	1	16.7
Local government support	1	16.7
Early entrant advantage	1	16.7
Network with competitors and complement each other	1	16.7

Diversification Strategy

All the six telecentres charge for some services (Table 5). Although the telecentres are not financially sustainable, the telecentre management is exploring ways of ensuring that the telecentres remain operational after the project period by diversifying activities and introducing new revenue generation activities. Respondents provided a number of ideas for income generation (Table 22). These include rural radio, training and education, membership fee to all individuals and groups in the community, loans, consultancy services and proposal writing. The Gaseleka telecentre in South Africa for example supports 34 local students of the University of South Africa (UNISA) and Technikon S.A. through distance learning, and is exploring possibilities of becoming a 'learning centre' for UNISA (Benjamin, 2001). Diversification of services and products has been tried out in Hungary and Australia with success and more than 50 different income-generating services were developed (Roman and Colle (2002). Kenyan and Ugandan telecentres should exploit the benefits of a diversification strategy in areas such as extra mural studies and radio listenership groups for health, education, agriculture and other sectors to help telecentres attain sustainability.

Table 22 Suggested Income Generating Ideas

Income generating ideas	Frequency – Number of telecentres n=6	Percentage (%)
Fundraising	4	66.7
Broaden the membership of participating partners	4	66.7
Membership fee	4	66.7
Proposal writing to develop add-on projects to on-going activities at the telecentres	2	33.3
Rural radio charging for announcements	2	33.3
Printing services for community	1	16.7
Video recording	1	16.7
Decentralization of services to satellites to broaden the user base	1	16.7
Consultancy services in conducting feasibility studies, business and financial management etc.	1	16.7
Introduce/restore fax, telephone, e-mail, scanning and binding services and photocopying where not available	1	16.7
Counseling services	1	16.7
Medical facilities	1	16.7
Diversifying training courses such as introduction of hardware, IMIS	1	16.7
Introducing differentiated pricing policy for computer training – lower fee for school children	1	16.7
Loans	1	16.7
Be flexible in working hours to capture market of working people	1	16.7
Introducing distance education	1	16.7

Add-on Projects to Existing Pilot Telecentres

UNESCO recognized a gap in sustainability and outreach activities in the telecentre models and to ensure financial sustainability, has developed another project that includes community radio and plans to evolve the pilot telecentres into 'Community Multimedia Centres' (CMCs). UNESCO hopes to support the CMC manager for Nakaseke in Uganda for a further period of two years, and has built studios for rural radio, equipment and will provide technical support. The rural radio will generate revenue through announcements and broadcasting of development programmes. The revenue generated will be put in a revolving fund and will be used to run the CMC after the funding period. The rural radio will also overcome the distance barrier and pave way for dissemination of information to the wider community in the more remote areas. The CMCs are expected to operate in a network fashion and share experiences, skills, and platforms e.g. in maintenance of services, training, applications, resources and expertise in a bid to making the centers more sustainable. A number of developing partners such as NARO and CABI who are implementing the Electronic Delivery of Agricultural Information to Rural Communities in Uganda project are also developing add-on projects to complement and fill gaps to the on-going activities at the telecentres.

Exit Strategy

The development partners have a keen interest in seeing the pilot telecentres continue serving the needs of the communities they serve and have instituted strategies to wind down their support. The IDRC for example demands a strong business plan and has successfully done this with the Nakaseke multipurpose community telecentre in Uganda. They have empowered the community, provided training in management and in the preparation of an ICT strategy and a business plan (Appendix 6). Adherence to the developed plans will however be crucial if sustainability is to be achieved.

Restructuring of Telecommunications Sector

Some of the strategies that the governments of Kenya and Uganda have instituted include the restructuring of the telecommunications sector, privatization, enacting their respective communications act, encouraging competition in the telecommunications sector and emphasizing

universal service to all areas of their respective countries to avoid marginalization of rural and disadvantaged areas.

Rollout of Telecentres

Fifty percent of the telecentres have satellite centres – two in Uganda and one in Kenya. These include 16 satellites in Nakaseke and two in Kabale in Uganda. In Kenya, these are under the *AfriAfya* initiative with two satellite centres in Kwale and four in other parts of Kenya . Development partners especially the funding agencies do not see rollout as their role but they expect other agencies including government, entrepreneurs, private sector and civil society to apply the knowledge generated and rollout telecentres (Appendix 6). UNESCO has prepared a "cook book" for telecentre establishment and so far, more than 100 entrepreneurs have requested for copies from the Uganda UNESCO offices. UNESCO plans to follow up these entrepreneurs to find out how many have established telecentres. A number of private telecentres have emerged and are said to be doing good business. Uganda is working towards the formation of a foundation (Information Society Foundation), which hopes to play a key role in promoting rollout of telecentres. Other telecentres planned in different districts in Uganda include:

The National Curriculum Development Centre's "CurriculumNet Project" – which aims at using ICTs for the implementation of innovative mechanisms for curriculum development and delivery as per recommendations of the Education Policy Review Commission, the Government White Paper on Education and the Taskforce on Curriculum Review Report. The project links into other global initiatives such as the Alliance for Global Learning (AGL), Schools Online, UNESCO's Telematics Applications for Education and School Net Uganda. These initiatives have resulted in several schools being connected.

Canadian Physicians for Aid and Relief (an NGO) project "Strengthening productive capacities of youth and women war returnees in Lira and Apac Districts through ICTs". The project aims at providing information and ICT skills to war (women and the youth) returnees to re-integrate or integrate into the community to assist them rebuild themselves.

Makerere University's project "Strengthening community based organizations (CBOs) through information communications technologies (ICTs) in Uganda – Mukono District". The project aims at serving community based organizations (CBOs) within Mukono Town Council and surrounding sub-counties to improve their performance by building their capacity to generate knowledge and information and facilitate the sharing of skills and resources using modern ICTs.

Telemedicine project at Mulago and Butabika hospitals – designed to demonstrate the application of ICTs to community-based health care services, medical research and training.

A number of entrepreneurs have also established cyber cafes in peri-urban and rural areas and are providing telecommunications and secretarial bureau services.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter gives the major conclusions from the study, recommendations, limitations of the study and suggestions for further research.

5.2 Conclusions

From the findings of the present study, it can be concluded that:

The main purpose of the pilot projects was to identify and test ICTs for development and some of the development partners that started these telecentres such as IDRC and UNESCO had sustainability in mind. The three (3) telecentres established in Uganda were established with in-built sustainability measures in the project document and various sustainability options have been considered including an exit strategy that ensures devolution of the telecentres to the community. But despite these strategies, pilot telecentres in Kenya and Uganda are on average not financially sustainable. Telecentres are expensive to establish and rollout will only be guaranteed when telecentre models prove to be sustainable or when additional sources of funding are secured along with support from the central and local governments. A number of revenue generating activities have been employed by different telecentres.

The efforts made by the Communications Commission for Kenya and the Uganda Communications Commission are commendable and the establishment of a rural communications development fund should lead to rollout of telecentres and improved information exchange for social and economic development by the urban, rural, rich, poor and the disadvantaged. Liberalization and privatization will however remain the twin engines for accelerating use and application of ICTS in Kenya and Uganda.

Local capacity of the telecentre staff, volunteers and management has been developed through the several training courses held and visits to other centres. Most telecentres have also established networks with other institutions and brought synergy from internal and external linkages, diversification and opportunity for transferring competencies and skills. There is,

however, need for formal linkages to ensure continuity of inputs from the various partners after the project period.

The roles between the implementing agency, management committee, telecentre staff and the community have been confusing in some of the telecentres (Nakaseke) and could lead to conflict.

5.3 Recommendations

From the results of the present study, a number of recommendations are made.

Telecentres in Kenya and Uganda that are dependent on development partner funding are not financially sustainable. Attaining financial sustainability of community telecentres will be a gradual process and will take time but telecentres must adopt a bottom-line culture. Telecentres should, therefore, formulate strategies that will meet the development objectives and at the same time earn the centers revenue that offsets expenditures of the telecentres. Choice of the portfolio from the diverse options of revenue generation strategies should be based on market analysis and a sound business plan. Telecentres that have not yet developed a business plan should consider this a priority and the objectives for which the respective telecentre was established should be the driving force of the sustainability strategies adopted.

The government, civil society and private sector should share the vision of the telecentre and each party should take a more active role in supporting community telecentres. Clear roles and responsibilities of each player must also be defined from the outset. To ensure sustainability, emerging and existing community telecentres should form strategic public-private partnerships and become pro-business. Development partners, NGOs and the government should sponsor activities pertaining to development objectives while the private sector and entrepreneurs support the profit-oriented objectives. This would be a sure way of meeting current needs while ensuring the needs of the future generations are also catered for. Support by the governments is crucial.

The demand for services of telecentres needs to be increased and telecentres must develop sound marketing and public relations strategies. Telecentre management cannot afford to ignore

launching of their centers as this raises awareness of the products and services of the telecentre and helps capture the potential market and raise demand.

Although a number of training workshops had been held for telecentre managers, volunteers and community members, it is desirable that the management of the telecentres receives training targeted at equipping them with management skills to ensure sustainability of the telecentre. Telecentres need to make decisions, coordinate activities, handle people and evaluate performance. Roles and responsibilities of different players (donor governments, implementing agency, development partners, national advisory committee, local management committee, community members) must also be clearly spelt out to direct the efforts and activities of others and to avoid conflict.

Since access to information is a basic human right, it is necessary to bridge the digital divide between the urban and rural, the rich, and the poor. The governments of Kenya and Uganda must formulate and implemented supportive and enabling national and sectoral policies. The Kenya government should fully liberalize the landline and cellular telephone sector and do away with the Telkom Kenya monopoly. The Kenya government should also be less restrictive in the issuance of VSAT licenses to enable all legible institutions and service providers to benefit through improved bandwidth and reduced costs. The policy formulation process should also be based on a gender analytical approach if a gender divide is to be abated.

There is need for more clarity on the roles between the implementing agency, management committee, telecentre staff and the community to avoid conflict.

5.4 Limitations of the Study

Some of the limitations of the study include:

The different telecentres had adopted different sustainability models based on their objectives, hence sustainability would mean different things to them, depending on their objectives.

The study addressed in detail only two pillars of sustainability namely financial and human resources. The study did not consider social, and policy and regulatory framework sustainability in-depth.

The total number of pilot telecentres in Kenya and Uganda were few and one of the telecentres was closed, hence not studied, which reduced the total number of respondents by 14 percent.

Some of the respondents were not telecentre managers and hence could not provide answers to some of the questions posed. Some financial data requested was also not provided for various reasons. Financial sustainability figures arrived at are therefore indicative, and are not a reflection of the actual figures on the ground.

The time frame and finances were also limiting.

5.5 Suggestions for Further Research

Identify how the community (in terms of gender) has used the telecentres and how this has impacted on their social, economic and human development.

Determine how much local content has been developed and how this is being shared within the country, region and other developing countries.

Find out how the people trained in the community (especially the trained trainers) are using the skills acquired to justify the heavy investment in training.

Marketing and communication strategies for telecentres

REFERENCES

Adieri, B. 2000. A survey of strategic change management practices within non-governmental organizations (NGOs) in Kenya. MBA Thesis. University of Nairobi

AfriAfya. 2002. African Network for Health Knowledge Management and Communication *AfriAfya Newsletter*. Vol. 1(2). May 2002

Anderson, J.; Van Crowder, L.; Dion, D. and Truelove, W. 1999. Applying the lessons of participatory communication and training to rural telecentres. FAO, Rome Italy. 5 pp. http://www.fao.org/WAICENT/FAOINFO/SUSTDEV/Cddirect/Cdan0010.htm

Andreasen, A.R. 1999. Profits for nonprofits. In *Harvard Business Review on nonprofits*. Harvard Business School Press. Boston, MA, USA. pp. 111-133

Anyaegbunam, C.; Mefalopulos, P. and Moetsabi, T. 1998. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 74-89

Asingwire Narathius. 2001. Agricultural information and communication needs assessment: a study of Luwero and Mpigi districts. A consultancy report. 56 pp.

Baden-Fuller, C. and Pitt, M. (eds.). 1996. Strategic innovation: an international casebook on strategic management. Routledge. London, UK

Barnatt, C. 1996. Cyber business: mindsets for a wired age. John Wiley and Sons. London, UK

Barney, J. 1991. Firm resources and sustained competitive advantage. In *Journal of Management.* Vol. 17. pp. 91-120

Barney, J.B. 1996. Gaining and sustaining competitive advantage. Addison-Wesley Publishing Company, London, UK

Benjamin, P. 2001. The Gaseleka telecentre, Northern Province, South Africa. pp. 75-84. (HM recheck Internet address) http://www.col.org/telecentres/chapter%2007.pdf

Benjamin, P. 1999. Community development and democratisation through information technology: building the new South Africa. 18 pp.

The Benton Foundation. 2002.
http://www.digitaldividenetwork.org/content/sections/index.cfm?key=2

Botten, N. and McManus, J. 1999. Competitive strategies for service organizations. MacMillan Press Ltd., London, UK

Braa, J. 2001. A study of the actual and potential usage of information and communication technology at district and provincial level in Mozambique with a focus in the health sector. *Electronic Journal on Information Systems in Developing Countries.* Vol. 5(2). pp. 1-29

Bridges.org. 2001. Spanning the digital divide: understanding and tackling the issues. A report by Bridges.org. 152 pp.

British High Commission. 2001. Huruma Multi-Purpose Telecentre. *The Business.* p. 5. British High Commission, Nairobi

Buyek, B. 1991. The Banks use of technical assistance for institutional development. Working Paper Series No. 578. World Bank. Washington, DC, USA

Byron, I. and Gagliardi, R. 2000. Communities and the Information Society: the role of information and communication technologies in education. 5 pp. http://www.idrc.ca/acacia/studies/ir-unes4.htm

Carson, J. 2002. CCK and its stranglehold on vital sector. *Sunday Nation,* December 8. pp. 8-9

Chasquinet. 2002. Schools online - planning for sustainability: how to keep your ICT project running. 11 pp. http://www.schoolsonline.org/resources/Sustainability-booklet.pdf.

Collis, D.J. and Montgomery, C.A. 1995. Competing on resources: strategy in the 1990s. *Harvard Business Review.* July-August. pp. 118-128

Corporate Research Foundation (CRF). 1999. Corporate strategies of the top UK companies of the future. Harper Collins Publisher. New York, USA

Coulson-Thomas, C. 2001. Are you a winner or a loser? *Business Executive.* Vol. 15(86). pp. 6-7

Crawley, J. 2001. Good judgment training and 'people problems'. *Business Executive.* Vol. 15(86). pp. 16-17

Currie, W. 1995. Management strategy for I.T.: an international perspective

Dahms, M. 1999. Telecentres in Africa. 14 pp.

David, F.R. 1995. Concepts of strategic management. Prentice Hall. London, UK

Dees, J.G. 1999. Enterprising nonprofits. *Harvard Business Review on nonprofits.* Harvard Business School Press. Boston, MA, USA. pp. 135-166

Denes, S. 2001. A global perspective. *Rural Telecommunication.* November/December. Vol. 20. Issue 6. pp. 6

Dessler, G. 1994. Human resources management. 6th ed. Prentice-Hall Inc. Hemel Hempstead, UK

Drucker, P.F. 1999. Management challenges for the 21st Century. Butterworth Heinemann. London, UK

Drucker, P.F. 1964. Managing for results: economic tasks and risk-taking decisions. Heinemann. London, UK

Edejer, T.T. 2000. Disseminating health information in developing countries: the role of the Internet. *British Medical Journal.* Vol. 321. pp. 797-800

Ernberg, J. 1998a. Empowering communities in the information society: an international perspective. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 191-211

Ernberg, J. 1998b. Telecommunications for sustainable development. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 112-139

Food and Agriculture Organization of the United Nations (FAO). 1994. Communication: key to human development. Communication for Development Group. FAO. Rome, Italy

Frankfort-Nachmias, C. and Nachmias, D. 1996. Research methods in the social sciences. 5th. ed. Arnold. London, UK

Gaster, P. 2000. A pilot telecentre project in Mozambique. Eduardo Mondlane University Informatics Centre. Maputo, Mozambique 10 pp.

Gedajlovic, E.R. and Shapiro, D. M. 1998. Management and ownership effects: evidence from countries. *Strategic Management Journal.* Vol. 19(6). pp. 533-553

Gorenflo, N. 1998. Effective partnering and leadership in rural telecommunications: rural distance learning via video conferencing telecommunication – the Northnet experience. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 235-245

Global Information Infrastructure Commission (GIIC). 2002. http://www.giic.org

Goldsmith, A.A. 1992. Institutions and planned socioeconomic change: four approaches. *Public Administration Review.* Vol. 52(6). pp. 582-587

Gomez, R.; Hunt, P., and Lamoureux, E. Focus on Telecentres: How can they contribute to social development? International Development Research Centre (IDRC), Canada. www.idrc.ca/pan/telecentres.html

Grant, R.M. 1991. The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review.* Vol. 33(3). pp. 114-135

Hall, R. 2000. What are strategic competencies? In *From Knowledge management to strategic competence: measuring technological, market and organizational innovation. Series on Technology Management Vol. 3.* Tidd, J. (ed.). Imperial College Press. London, UK. pp. 26-49

Hall, R. 1992. The strategic analysis of intangible resources. *Strategic Management Journal.* Vol. 13. pp. 135-144

Hamel, G. 1996. Strategy as revolution. *Harvard Business Review.* July-August. pp. 69-82

Harris, R.W. 2002. Evaluating telecentres within national policies for ICTs in developing countries. 8 pp. www.idrc.ca/pan/telecentres.html

Heeks, R. 2002. Failure, success and improvisation of information systems projects in developing countries. http://www.man.ac.uk/idpm/di_wp11.htm

Holden, L. 1997. Training. In *Human resource management: a contemporary perspective.* 2nd ed. Beardwell, I. and Holden, L. (eds.). Pitman Publishing. London, UK. pp. 378-398

Holmes, R. 2001. Leading the way. *Business Executive.* Vol. 15(86). pp. 9-10

Holmes, R.; Emmett, M.; Esterhuysen,A. and Boezak, S. 1999. Gender analysis of telecentre evaluation methodology. 9 pp. http://www.apcwomen.org/resources/research/telecentre-gender.html

Hudson, H.E. 1999. Designing research for telecentre evaluation. 16 pp. http://www.idrc.ca/acacia

Hudson, H.E. 1998a. Global information infrastructure: the rural challenge. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 270-286

Institute of Economic Affairs (IEA). 2002. Telecommunications policy in transition: mainstreaming Kenya into the global information economy. IEA, Nairobi. 42 pp.

International Development Research Centre (IDRC). 2000. The use of information and communication technologies in the health sector in sub-Saharan Africa. 9 pp. http://www.idrc.ca/acacia/old/studies/ir-health.htm

International Fund for Agricultural Development (IFAD). 2001. Rural Poverty Report 2001: the challenge of ending rural poverty. International Fund for Agricultural Development

International Institute for Communication and Development (IICD). http://www.iicd.org

International Telecommunications Union (ITU). 1998. Seminar on multipurpose community telecentres, 7-9 December, Budapest, Hungary. ITU. Geneva, Switzerland

IntraDelta Management Consultants International Inc. 1997. Making connections: an assessment of the information communication technology needs of CREDESA for health care work in the Quidah District of Benin. Final Report. 23 pp. http://www.idrc.ca/acacia/outputs/op-cred2.htm

Israel, A. 1987. Institution development: incentives to performance. World Bank. Washington, DC. USA

Itami, H. 1987. Mobilizing invisible assets. Harvard University Press. Cambridge, M.A. USA

Jacobs, V. 1997. From local village to global village – can the two meet? *Information Development*. Vol. 13(2). pp. 78-82

Jensen, M. 2002. African Internet Status: a status report. http://demiurge.wn.apc.org/africa/afstat.htm

Jensen, M. 2000. Access to ICTs in rural areas: the African telecentre experience

Jensen, M. and Richardson, D. 1998. Wireless weaves to lessen the gaps in rural telecommunication coverage in Africa. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 140-151

Johnson, G. and Scholes, K. 1999. Exploring corporate strategy. 5th ed. Prentice Hall Europe. Hemel Hempstead, UK

Jones, D.R. 2000. A cultural development strategy for sustainability. *Greener Management International.* Autumn Issue 31. p71, 15pp.

Kaplan, A. 1999. The development of capacity. Development Dossiers Occasional Paper No. 10. United Nations Non-governmental Liaison Service

Kayabwe, S.K. and Kihombo, R. 1999. Buwama and Nabweru multipurpose community telecentres: a baseline survey. A final report. 35 pp.

Kiernan, M.J. 1993. The new strategic architecture: learning to compete in the twenty-first century. *Academy of Management Executive* Vol. 7, Issue 1, p7, 15 pp.

Komives, L. and McMahon 1998. The relational leadership model. 1 pp.

Kosura, W.O. 2000. Introduction to project cycle management (PCM). In *"Project planning, implementation and evaluation: a training manual"*. United Nations Centre for Regional Development, Nairobi, Kenya. pp. 31--39

Kotter, J.P. 1996. Leading change. Harvard Business School Press. Boston. MA, USA

Lee, J. and Miller, D. 1999. People matter: commitment to employees, strategy and performance in Korean firms. *Strategic Management Journal.* Vol. 20. pp. 579-593

Liebeskind, J.P. 1996. Knowledge, strategy and the theory of the firm. *Strategic Management Journal.* Vol. 17. pp. 93-107

Long, C. and Vickers-Koch, M. 1998. Using core capabilities to create competitive advantage. pp. 101-115. In Readings in strategic management edited by Thompson, A.A.; Strickland III, A.J. and Kramer, T.R. (eds.). Irvin/McGraw-Hill. London, UK

Lorange, P. and Roos, J.1993. Strategic alliances: formation, implementation and evolutions. Blackwell Publishers. 295 pp.

Manpower Services Commission. 1981. Glossary of training terms. HMSO. London, UK

Mansell, R. and Wehn, U. (eds.). 1998. Knowledge societies: information technology for sustainable development. United Nations Commission on Science and Technology for Development. Oxford University Press. New York, USA

Mariotti, J. 1997. Is competitive advantage really sustainable? *Industry weekly* Vol. 257, Issue 13. pp. 18

Matseshe, K. 1999. Structure and strategy relationship in the Kenyan enterprises. Unpublished. MBA Thesis. University of Nairobi

McGill, R. 1994. Institution development and the notion of sustainability. *International Journal of Public Sector Management.* Vol. 7(6). pp. 26-40

McTavish, R. 1995. One more time: what business are you in? *Long Range Planning.* Vol. 28(2). pp. 49-60

Ministry of Finance and Planning. 2001. Poverty Reduction Strategy Paper for the period 2001 - 2004. Ministry of Finance and Planning. Nairobi Kenya. 309 pp.

Mintzberg, H. and Quinn, J.B. 1991. The strategy process: concept, contexts, cases. 2nd ed. Prentice Hall International Inc. London, UK.

Munyua H.M. and Adupa, J. 2002. Improving rural livelihoods through community telecentres: the case of Uganda. 11 pp. Paper presented at Ethio-Forum 2002, held at ECA, Addis Ababa, Ethiopia 15 Jan – 4th February 2002

Mureithi, M. 2000. Technical feasibility and implementing ALPID. *In* African youth on the information highway: participation and leadership in community development. Ogbu, O. and Mihyo, P. (eds.) IDRC. Ottawa, Canada. pp. 23-53

Musoke, M.G.N. 2001. Simple ICTs reduce maternal mortality in rural Uganda. ICT stories. InfoDev/IICD

Mutai, J. 2002. Africa and the global info-communications technology (ICTs) revolution: opportunities and challenges. African Telecommunications Day supplement. *The Nation.* 19-21 pp.. December 7

Naylor, J. 1996. Operations management. M&E Pitman Publishing. London, UK

Norrish, P. 1998. New ICTs and rural communities. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. vi-x

Norton, M.R. ; Tetelman, M.S. ; Brosnan, C. ; Kendro, M.A. ; Bacon, B.S. ; Lohmeyer, P. ; Fuchs, R. and McBride, K. 2002. Initial lessons learned about private sector participation in telecentre developement. 125 pp. http://www.ntca.org/intl/FINAL.txt

Nyiira, Z.M. 2000. Information and communication technologies: experience with rural community telecentres. http://www.anais.org/SITES/BAM2000/ateliers/auganda.html

Oestmann, S. and Dymond, A.C. 2001. Telecentres – experiences, lessons and trends. http://www.col.org/telecentres/chapter%2001.pdf.

Ogbu, O. M. and Mihyo, P. (eds.). 2000. African youth on the information highway: participation and leadership in community development. IDRC, Ottawa, Canada

Othieno, R.O. 2002. Uganda Telecom: an overview. A presentation made to industrial trainees on 15 July. 9 pp.

Otsyina, J.A. and Rosenberg, D.B. 1997. Participation and communication of development information: a review and appraisal. In *Information Development*. Vol. 13(2). pp. 89-93

Owen, W. and Darkwa, O. 2000. Role of multipurpose community telecentres in accelerating national development in Ghana. *First Monday.* Vol. 5(1) (Peer –Reviewed Journal on the Internet) http://firstmonday.org/issues/issue5_1/owen/index.html

Paisley, L. and Richardson, D. 1997. Why the first mile and not the last? pp. 2-13. In *The first mile of connectivity: advancing telecommunications for rural development through a*

participatory communication approach. Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 2-13

Peters, T.J. and Austin, N. 1994. A passion for excellence: the leadership difference. Harper Collins Publishers. London, UK

Peters, T.J. and Waterman, R.H. 1982. In search of excellence. Harper & Row. New York, USA

Porter, M.E. 1998. Competitive advantage: creating and sustaining superior performance – with a new introduction. The Free Press. New York, USA

Powell, A.P. and Charron, E.M. (eds.). 1996. Proceedings of the 9th World Congress of the International Association of Agricultural Information Specialists: Communicating Agricultural Information in Remote Places. Part II 23–26 January 1995, Melbourne Australia. 236 pp. *IAALD Quarterly Bulletin.* Vol. 51(2)

Prahalad, C.K. and Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review.* May-June. pp. 79-91

Prendergast, R. and Singer, H.W. (eds.) 1991. Development perspectives for the 1990s. MacMillan. London, UK

Prokesch, S.E. 1997. Unleashing the power of learning: an interview with British Petroleum's John Browne. *Harvard Business Review.* September-October. pp. 147-168

Ramirez, R. 1998. Communication: a meeting ground for sustainable development. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 38-59

Richardson, D. 1998. Rural telecommunication services and stakeholder participation: bridging the gap between telecommunication experts and communication for development practitioners. In *The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach.* Richardson, D. and Paisley, L. (eds.). FAO. Rome, Italy. pp. 14-35

Richardson, D. 1997. The sustainability of participatory communication. Paper published on the World Wide Web. http://www.PanAsia.org.sg/confhome.htm

Richardson, D. and Paisley, L. (eds.). 1998. The first mile of connectivity: advancing telecommunications for rural development through a participatory communication approach. FAO. Rome, Italy

Rindova, V.P. and Fombrun, C.J. 1999. Constructing competitive advantage: the role of firm constituent interactions. In *Strategic Management Journal.* Vol. 20. pp. 691-710

Roman, R. and Colle, R.D. 2002. Themes and issues in telecentre sustainability. Development Informatics Working Paper Series. Working Paper No. 10. Institute for Development Policy and Management. University of Manchester, UK. http://www.man.ac.uk/idpm

Rothschild, W.E. 1989. How to gain (and maintain) the competitive advantage in business. McGraw Hill. London, UK

Rural Newfoundland Cultural Survival Project. 1997. Communication for survival report: Communication For Survival Report. 32 pp. http://www.ryakuga.org/library/cfsfinal.html

Sharma, S. and Vredenburg, H. 1998. Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. In *Strategic Management Journal.* Vol. 19. pp. 729-753

Shearer, J.W. 1990. Business and the new environmental imperative. In *Business Quarterly.* Vol. 55(3). pp. 48-52

Shimba, L.E. 1993. Aspects of strategic management planning in Kenya's financial sector. MBA thesis. University of Nairobi

Stacey, R.D. 1996. Strategic management & organizational dynamics. Pitman Publishing. London, UK

Stickings, B.J. 1998. Sustainability versus profitability. In *Specialty Chemicals.* Vol. 18, Issue 4. pp. 187, 3 p.

Taylor, B. 1995. The new strategic leadership – driving change, getting results. In *Long Range Planning.* Vol. 28(5). pp. 71-81

Technical Centre for Agricultural and Rural Co-operation (CTA). 1998. CTA's electronic observatory. *SPORE* no. 77 October. pp. 13

Teece, D.J.; Pisano, G. and Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal.* Vol. 18(7). pp. 509-553

Tetelman, M. 2001. The role of telecentres: bridging the telecom gap in underserved nation. *Rural Telecommunications.* November/December. Vol. 20. Issue 6. pp. 6

Thompson, A.A. and Strickland, A.J. 1998. Crafting and implementing strategy. Text and readings. 10th ed. McGraw-Hill. London, UK

Tidd, J. 2000. From Knowledge management to strategic competence: measuring technological, market and organizational innovation. Series on Technology Management Vol. 3. Imperial College Press. London, UK

Uganda Communications Commission (UCC). 2002. http://www.ucc.co.ug/technical/Licensing/licensing.html

Uganda Communications Commission (UCC). 2001. Rural Communications Development Policy for Uganda. 23 pp.

UNEP. 1998. Sustainable business: economic development and environmentally sound technologies. The Regency Corporation Ltd.

UNESCO. 2002. Digital development anthology. http://www.UNESCO.org/

Vikas Nath. 2000a. Empowerment and governance through information and communication technologies: women's perspective. http://www.vikasnath.org/

Vikas Nath. 2000b. Heralding ICT enabled knowledge societies: way forward for the developing countries. 8 pp. wysiwyg://1/http://sdnp.delhi.nic…ternetinfo/articles/herading.htm

Villageearth. 2000. http://www.villageearth.org/Projects/projects.htm; www.villageearth.org

West, A. 1992. Innovation strategy. Prentice Hall International. London, UK

Whyte, A. 2000. Assessing community telecentres: guidelines for researchers. IDRC. Ottawa, Canada

Woherem, E.A. 1993. Information technology in Africa. Challenges and opportunities. ACTS Press. Nairobi, Kenya

Wolfensohn, J.D. 2000. Building an equitable world. World Bank, Prague, Czech Republic. 18 pp.

World Bank. 2002. World development report 2002: building institutions for markets. Washington, DC. USA

World Bank. 2000. Entering the 21st century. World Development Report 1999/2000 Summary. World Bank, Washington, D.C., USA. 11 pp.

Yunus, M. 1997. Micro loans for the very poor. *The New York Times* Sunday, February 16.

Zack, M.H. (ed.) 1999. Knowledge and strategy. Butterworth Heinemann, London, UK

APPENDICES

Appendix 1: Letter of Introduction

UNIVERSITY OF NAIROBI
FACULTY OF COMMERCE
MBA PROGRAM – LOWER KABETE CAMPUS

Telephone: 732160 Ext. 208
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

5th September 2002

TO WHOM IT MAY CONCERN

RE: MUNYUA H.M. (D61/P/8499/98)

This is to confirm that the above named is an MBA student in the Faculty of Commerce, University of Nairobi, pursuing studies leading to the award of Master of Business Administration degree.

She is required to submit as part of her coursework assessment a research project report on some management problem. We would like her to do her project on real problems affecting firms in Kenya and Uganda. We would, therefore, appreciate if you assist her by allowing her to collect data in your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

M. B. A. OFFICE ★ FACULTY OF COMMERCE ★ UNIVERSITY OF NAIROBI P. O. Box 30197 NAIROBI

DR. MARTIN OGUTU
CO-ORDINATOR, MBA PROGRAM

Appendix 2: Research Permit

Uganda National Council For Science and Technology
(Established by Act of Parliament of the Republic of Uganda)

Your Ref:.....

Our Ref: PS 25 *Date* October 7, 2002

The Resident District Commissioner
Mpigi
MPIGI

Dear Sir/Madam,

RE: RESEARCH CLEARANCE

We wish to introduce to you Mrs. Munyua. Hilda. Mantema who would like to carry out a research project entitled, "Sustainability of Pilot Multipurpose community Telecentres in Kenya and Uganda," between October 7, 2002 and October 14, 2002 in your district. The Uganda National Council for Science and Technology has approved the research project.

This letter is to request you to give the researcher the necessary assistance to facilitate the accomplishment of the research project.

Your cooperation in this regard is highly appreciated.

Yours faithfully,

Julius Ecuru
for: Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

File No. PS 25
Name. MUNYUA HILDA
MANTEMA.
Address. NARO, ARIS P.O Box
11098, KAMPALA, UGANDA.
Nationality. KENYAN
Title of Research Project. SUSTAINABILITY OF PILOT MULTIPURPOSE COMMUNITY TELECENTRES IN KENYA AND UGANDA
Date of Issue 7th/10/2002
Valid until 14th/10/2002

Holder's Signature.....

Certified photograph

UGANDA NATIONAL COUNCIL FOR SCIENCE & TECHNOLOGY P.O. BOX 6884 KAMPALA, UGANDA

Executive Secretary
Uganda National Council for Science and Technology
P. O. Box 6884, Kampala

ANYONE FINDING THIS CARD SHOULD HAND IT AT THE NEAREST POLICE STATION

THIS CARD IS A PROPERTY OF THE UGANDA GOVERNMENT

Renewed until 31st December 20..

UGANDA NATIONAL COUNCIL FOR SCIENCE & TECHNOLOGY P.O. BOX 6884 KAMPALA, UGANDA

Executive Secretary

Renewed until .....

Executive Secretary

Appendix 3: Questionnaire (Telecentre Managers)

SECTION A (General)

Q. 1 When was the center established? _____

Q. 2 How long have you served the telecentre? _____

Q. 3 What is the vision and mission of the telecentre?

_____

Q. 4 What are the goals / objectives of the center? _____

Q. 5 What challenges are you facing in achieving your goals?

_____

Q. 6 Do you have a business plan? ? Yes ? No

Q. 7 Do you have a strategic plan? ? Yes ? No

Q. 8 Do you have an annual plan? ? Yes ? No

Q. 9 What is the telecentre's core business?

? Telecommunications ? Secretarial business
? Training/education ? Culture/recreation
? Information/knowledge dissemination ? Other (please specify)

_____

Q. 10 Do you offer any other services at your telecentre? ? Yes ? No
(If yes, please specify)

_____

Q. 11 Who are your primary beneficiaries? _____

Q. 12 Who are your secondary beneficiaries? _____

Q. 13 Who owns the telecentre? Please tick appropriate box:

? community owned ? government owned ? privately owned
? institution owned – please specify _____
? jointly owned – please specify _____
? other – please specify _____

Q. 14 Do you have satellite centers? _____

Q. 15 If yes to Q. 14, please specify how many _____

SECTION B (Financial)

Q. 16 Do you charge for your services? ? Yes ? No ? Both
(Please specify services you charge for/do not charge for)

? Telecommunications ? Secretarial business
? Training/education ? Culture/recreation
? Information/knowledge dissemination ? Other (please specify)

_____

Q. 17 What criteria did you use to arrive at the price?
(interviewer to deduce) Price leader Differentiation Focus

Q. 18 How does the community view the fees that you charge?

Very high Very low
1 2 3 4 5

Q. 19 Are any of your prices subsidized? ? Yes ? No
(If yes, please comment on your answer)

_____

Q. 20 Please indicate your operational costs

Operational item	*Costs KSh/USh 1998*	*Costs KSh/Ush 1999*	*Costs KSh/USh 2000*	*Costs KSh/USh 2001*	*Costs KSh/Ush 2002*
Rent and or maintenance of site					
Insurance costs					
Security costs					
Software costs					
Equipment maintenance/upgrades					
Communication costs (Internet, telephone)					
Staff costs					
Utility costs					
Outreach costs					
Promotion costs					
Other (please specify)					

Q. 21 Please indicate your revenues

Revenues	*Revenue KSh/USh 1998*	*Revenue KSh/USh 1999*	*Revenue KSh/USh 2000*	*Revenue KSh/USh 2001*	*Revenue KSh/USh 2002*
Grants					
Loans					
Subsidies					
Private donations/fundraising					
In kind support – equipment					
In kind support – services					
In-kind support – volunteers					
Community support (room, experts)					
Membership fees					
Revenues from e-mail, Internet, telephone, fax, photocopying, training courses					
Revenue from word processing, printing, social events, room rentals, copying tapes, video shows					
Revenue from sale / copying of products – books, videos, documents, newsletter, radio					
Other (please specify)					

Q. 22 Do you have partnerships with any other institutions? ? Yes ? No
(If yes, please specify any financial benefits of the cooperation)

Partner *Monetary benefits* *Value in kind*

SECTION C (Human resources)

Q. 23 Please indicate the number of staff at the center

	Male	*Female*	*Total*	*Age range*
Total staff number				
Permanent staff				
Temporary staff				
Expatriate staff				
Local professional staff				
Support staff				
Volunteers				
Community				
Other (please specify)				

Q. 24 Please indicate the level of training of your staff and volunteers.

	Male	*Female*	*Total*	*Age range*
Post graduate level				
Graduate level				
Diploma level				
Certificate level				
Secondary education				
Primary education				
Other				

Q. 25 Please indicate the number of training courses or workshops attended by staff, volunteers and community members

Number of raining courses	1998	1999	2000	2001	2002
Telecentre staff					
Volunteers					
Community members					

Q. 26 What was your overall budget and total training budget (US $)

	1998	1999	2000	2001	2002
Total budget					
Total training budget					

Q. 27 What motivates you to work at the telecentre?

_____

Q. 28 What are some of the ways you have tried out to motivate staff?

_____

Very high Very low
1 2 3 4 5

Q. 29 How does your center motivate volunteers?

_____

Q. 30 How would you say the leadership of the telecentre has contributed to the success of the telecentre (Please comment on your answer)

_____

Q. 31 To what extent are community members involved in the activities of the telecentre?

Very actively involved Very little involvement
1 2 3 4 5

Q. 32 How does the community contribute to the activities of the telecentre?

_____

Q. 33 How would you rate the cooperation relationship between management and the community?

Very high Very low
1 2 3 4 5

Comment on your answer _____

Q. 34 Please state if you have any relationships with other institutions in your community

Institution	*Relationship*	*Institution*	*Relationship*
Donors		Financial institutions	
Government		Other projects	
Community		Leaders	
Individuals		University	
Health centers		ISPs	
Schools		Professional associations	
Regional institutions		Council	
Research institutions		Other (specify	
International institutions			

Q. 35 What is the staff turnover rate? _____

SECTION D (General challenges)

Q. 36 What additional innovative income generating ideas would you suggest for the telecentre?

_____

Q. 37 Have you tried out the above ideas? ? Yes ? No

If no, why not? _____

Q. 38 What 3 most important factors would you suggest have led to the success of the telecentre?

_____

Q. 39 What would you suggest attracts users to use the services of the telecentre?

_____

Q. 40 What 3 key constraints have you encountered (in order of priority)?

_____

Q. 41 How would you say the community perceives the telecentre?

Very important Not very important

1 2 3 4 5

Q. 42 How do you ensure the services of the telecentre remain relevant?

_____

Q. 43 Why do you think non-users don't use the services of the center?

_____

Q. 44 How would you rate the level of demand for services at the telecentre?

Very high Very low

1 2 3 4 5

Q. 45 What strategies has the center tried out for creating demand?

_____

Q. 46 What strategies have you employed to deal with key competitors?

_____

Appendix 4: Checklist for Expert's Interviews

Management Committee
What measures have you put in place to ensure the telecentre continues to operate after the project period?

How do you involve the community in the activities of the telecentre?

What plans do you have for income generation?

How do you propose to develop staff and empower the community?

What are your views about charging for services?

What do you see as the key sustainability challenges?

Steering Committee
How is Kenya/Uganda as a country supporting the activities of telecentres?

What are different institutions in the country doing to support the activities of the telecentre

What do you see as the key sustainability challenges?

Rollout?

Government/regulator
What contribution are you making towards sustainability of the telecentres?

What innovative pricing policies/subsidies has the country adopted for telecommunication to encourage investment in rural and urban poor areas?

Does the country have a fund for ensuring universal access to communications?

What are your long-term plans for the telecentres?

What do you see as the key sustainability challenges for the telecentres?

Rollout?

Development partners
What have you done to ensure institutional development?

How have you empowered the staff, management and the community?

What exit strategy do you have in place?

What are your long-term funding plans for the telecentres?
Rollout?

Appendix 5: List of Persons Interviewed

Kenya

***AfriAfya* (African Network for Health Knowledge Management and Communication)** - Dr. Caroline Nyamai, Project Coordinator – AfriAfya Project

AfricaOnline – not interviewed

British Council – Ms Bernadette Mungai, Project Officer and Mr. Alex Mwaniki

Communications Commissions of Kenya - Mr. Kahindi Ngei, Assistant Director, Universal Service Obligation and Funding; Mr. Perminus J. Karungu, Coordinator Telecommunications Licensing; Mr. Daniel Waturu, Coordinator, Telecommunications License Enforcement

Huruma Pilot Multipurpose Community Telecentre/ National Council of Churches of Kenya (NCCK) - Mr. Bwibo, Centre Manager (First contact – Ms Sarah Muhoya, Head Communications)

International Development Research Centre – Dr. Florence Eta, Senior Programme Officer

Kenya Information Society – Mr. Muriuki Mureithi, Secretary of KIS and Ms Norah Mauti

Kivuli Centre - Mr. Peter Kabaka Osewe, School and Telecentre Coordinator and Mr. Charles Otieno, Co-ordinator

Mtaa dispensary centre - Kwale Health Systems Strengthening Project - Marystella Barasa, MIS Officer Aga Khan Health Services, Mombasa and Mr. D. Baya, Health Education Officer – Ministry of Health Kwale

Rockefeller Foundation – Benson Obonyo, Programme Coordinator-Africa Regional Programme

Software Technologies Ltd. (STL) – Mrs. Jyoti Mukherjee, Managing Director

UNESCO Regional Office - Mr. Hezeckiel N. Dlamini, Computer Applications Officer

WananchiOnline – Joseph McDonald, Business Development Coordinator

Uganda

Acacia Secretariat Uganda / Uganda National Council for Science and Technology – Ms Patricia Litho, Project Officer

Buwama Pilot Multipurpose Community Telecentre – not interviewed (telecentre was closed)

Kabale Telecentre Network – Grace Kanyike, Information Officer

Nabweru Pilot Multipurpose Community Telecentre – Mr. Edward Juuko, Telecentre Manager and Mr. Haji Sulaiman Mulindwa - Chairperson, local management Committee

Nakaseke Pilot Multipurpose Community Telecentre – Amina Nasolo, Information Officer, Carol Kamahoro, Librarian; Annette Namagembe, Assistant Librarian and Catherine Tezikyabbiri, Finance / Administrative Officer

National Agricultural Research Organization – Ms Joyce Adupa, Ag. Head: Agricultural Research Information Services

Public Libraries Board – Ms Ruth M. Mwayi, Senior Principal Librarian and Ms Amina Nasolo, Information Officer

Uganda Communications Commission - Mr. Arthur Muhanji, Project Officer - Rural Communication Development Fund

Uganda National Commission for UNESCO – Mr. Nsubuga Martin Herbert, Financial Analyst

Uganda Telecom - Mr. David Kapsanduy, Principal Executive Engineer / Equipment; Mr. Elias Bahanda, Manager Planning and Richard Owora Othieno, Public Relations Manager

Appendix 6 Expert Interviews - Development Partners

		Ensuring institutional development	Empowering staff, management and the community	Exit strategy	Long term funding plans	Replication
Kenya	**Africa Online**	Africa Online offered free connectivity to the telecentre for a period of 6 months to the Huruma telecentre.	Staff were trained on how to search the Internet and access e-mail. The staff were expected to train management and community members			
	AfriAfya	*AfriAfya* is a partnership of 8 agencies namely The Agakhan Health Services, AMREF Kenya Country Programme, CARE Kenya, Christian Health Association of Health, SatelLife HealthNet, Kenya, PLAN International, Ministry of Health – Coast Province and World Vision International, Kenya. The network has 7 pilot field sites using ICTs for health in rural communities that are implemented by a partner agency that is responsible for the respective health intervention. The Mtaa Dispensary Field Centre in Kwale for example is a health knowledge Management and Communication Centre providing health information to rural communities through use and application of ICTs and is implemented by the Aga Khan Health Services and information is communicated through the network to partner agencies. The centre is owned by the local community and Ministry of Health.	Staff, local management committee and community members have been trained and spinoffs are being harnessed by using those trained as trainers of other community members. Working with NGOs also empowers the staff, management and community members through community mobilisation and participation in other health related activities. Committee members also participate in decision making and managment of the knowledge centre, thus enabling them to run and manage the activities of the centre.	The project has in-built sustainability strategies and the centre is owned by the community. Local committee members and some community members have been trained as trainers in the use and application of ICTs, and content development. Management of the cenre's day to day activities is also handled by the community, thus ensuring smooth exit at the end of the project period. *AfriAfya* has, however, not carried out management training.	*AfriAfya's* has been thinking of the long-term and to ensure sustainability of its activities, has registered as an independent NGO. This allows the organization to be directly responsible for its future management and finances. The Steering Committee will change to an Executive Board.	Rollout will depend on availability of resources and getting more stakeholders especially the government to work with. There is immense interest from other agencies that are interested in establishing similar centres in other localities. The consortium (AfriAfya) also shares experiences and lessons of the various field sites and disseminates the information to the wider community.
	British High Commission	The British High Commission in Kenya supports access to ICTs and works towards bridging the digital divide thus enabling the sharing of development opportunities by supporting the activities of KIS. KIS assisted the establishment of the Huruma telecentre. The British High Commission in Kenya expects the target community to develop a human and institutional capacity, thus responding to community development needs, exchange knowledge and experiences. The British High Commissioner to Kenya launched the telecentre				

	British Council	The British Council provided support to the Huruma Community Pilot Telecentre through the Kenya Information Society (KIS). Nine old computers and a server were donated to the center through KIS. KIS is a national institution that will continue to play an advocacy and advisory role.				
	Kenya Information Society	KIS - a project of the British Council and has responded to community needs by creating a forum for Kenyans to create awareness, engage in informed debate, and formulate strategies and pilot technologies to realize an information empowered society. KIS has fostered the establishment of the Huruma and has contributed 9 computers and a server; conducted a feasibility study and needs assessment; has provided technical support in upgrading and installing equipment; supported the sensitization workshops and has provided logistical support to the launching and promotion of the telecentre.	KIS works with the telecentre staff, management and community members in all activities it carries out and KIS members provide support on voluntary basis to telecentre staff.	KIS does not want to own the telecentre thus works with the implementing agency, participating partners and community to provide limited support and intellectual logistics	KIS's support is in the establishment of the telecentre and its long-term objective is to generate knowledge and apply the lessons learned in other telecentres. KIS' long-term strategy for the community is to see the 'seed' spread through out Huruma and other localities.	KIS will play a catalytic role to see application of lessons learned and knowledge to other areas. KIS will continue to play an advocacy and advisory role . KIS calls for parners to replicate different models of telecentres and solicits donation of equipment, human and financial resources to be able to spread the benefits of the information age
	National Council of Churches of Kenya	NCCK has provided the physical infrastructure, furniture, the telecentre manager, electricity, security and telephone. The NCCK is the implementing agency of the telecentre and provided the premises and staff and management. NCCK has engaged a manager and a technical staff to manage the telecentre.	Local community members have been trained as trainers and these are expected to train other community members.	The NCCK works with community members and hopes to continue working with them to prove access to development information and bridge the digital divide.	NCCK plans to introduce more services to cater for community needs and to help generate more revenue so the centre can be able to meet its operational costs.	
	Rockefeller Foundation	The Rockefeller Foundation is funding the *AfriAfya* project and has facilitated the project to buy computers, printer, solar power and battery which belong to the respective field centres. The project has trained staff, volunteers and community members to be able run the centre, which is owned and managed by the community through a local management committee.	*AfriAfya* staff and community members including the Kwale health center staff who have been trained in the use and application of ICTs, database development. The training has led to the development of local capacity in the management of the health center. Members of the local management committee participate in all decision making and activities of the telecentre.	Rockefeller is funding a project which has a time span. The project has incorporated sustainability measures in its different phases to ensure sustainability after the project period. The projects aim is to learn lessons regarding the feasibility of a knowledge health system using ICTs to access and manage health information in rural areas. Rockefeller will consider funding research projects related to this project.	The project is approaching the end of its project period and Rockefeller intends to fund the project for another phase to see the experiment go on a bit longer and learn lessons. Rockefeller also hopes to bring in more stakeholders especially the government, disseminate information about the success of the project	Rockefeller is interested in generating knowledge and does not have the clout or capacity for replication of centres. It expects the private, public, civil society and community groups to use this knowledge and establish more centres in the country.

	Software Technologies Ltd	Software Technologies Limited (STL) provided support to Huruma and Kivuli telecentres, in form of networking and cabling, computer training courses to train trainers until they wer proficient in the use of "ICTs. STL is also offering the center software at cheaper licenses rates.	The training by STL was intended to train community members as trainers, who will in turn train other community members. The firm also provides certification. STL also hopes to provide training in website development and desktop publishing. STL devolves after the second training.	STL hopes to continue 'hand holding' the trained trainers and providing certification to subsequent fee-based courses and will send a supervisor to examine the students to ensure value addition and quality until the telecentre can stand on its own.	STL sees its long term plan as empowering and giving independence to the telecentres. STL proprietors have registered an NGO (Love light and Life) that plans to seek for partners and funding to set up more telecentres.	STL has started another telecentres at a school in Meru and is seeking partners to establish another one in Kajiado.
	WananchiOnline	Wananchi Online have donated dial-up e-mail and Internet for 1 year.	Training for staff on how to use the e-mail and Internet facilities was conducted	Wananchi does not have a follow-up strategy and no request for extension was received.	Support is based on expressed needs.	Wananchi Online is a commercial firm and does not see rollout as its role.
Uganda	**Acacia Secretariat**	The Acacia secretariat provided advisory servuces, skills to three telecentres in Uganda (Buwama, Nabweru and Nakaseke). Acacia has also ensured sustainability of the telecentres by including a plan for revenue generation in all its projects and helped develop the telecentres as institutions by putting in place management structures at both national and grassroots level.	Acacia has provided training on leadership, business plan development, information retrieval and content development to various categories of stakeholders.	Acacia Secretariat has encouraged the development of many other projects that work with the existing telecentres. This extends the period in which different activities are implemented at the telecentre. The Acacia Secretariat has also built the capacity of the local management committee to ensure there is capacity to manage the telecentres after the project period.	The Secretariat is an initiative that sees its long term plan as providing coordination, guidance and sharing of information on lessons learned and encourage more agencies to adopt the concept.	The Acacia Secretariat expects different agencies to rollout telecentres. A number of entrepreneurs have been interested in the concept as well as other funding agencies and have established telecentres in different locations in the country.
	British Council	The British Council Uganda provided funding for acquisition of information resources for the Nakaseke resource centre. British Council also extended the services of its library in Kampala to the telecentre.	The British Council provided training in identification of user needs and worked with PLB and the community.			
	CAB International	CABI has provided advisory services and strengthened the capacity of NARO in supporting institutional development of telecentres through the implementation of the Electronic Delivery of Agricultural Information to Rural Communities in Uganda, in collaboration with NARO (financial support from IDRC). Sensitization workshops have been conducted several training of trainers courses.	Staff, management and community members have been trained in the use of ICTs for information retrieval, content development and repackaging of information into different formats and media.	The project activities included training of trainers. The final phase of the project is being implemented by NARO and CABI will provide advice where necessary to prepare for exit.	CABI hopes to work with partners in Uganda and develop proposals for funding to allow implementation of add-on projects.	

	International Development Research Centre	At National level, IDRC has created a National Advisory Committee (NAC) comprising individuals with national clout in the ICT and related development sectors. This group has experts in different areas and provides advice to partners in the telecentre movement in Uganda. The pilot telecentres are implemented by the UNCST - a government institution with a presence all over the country and a mandate for all technological develooments in the country. UNCST has a vested interest in the development and implementation of ICT policies and is therefore imbued with dimensions of sustainability. Structures have also been put in place such as the Local Management Committee and Telecentre Manager to ensure smooth running. At grassroot level, (government, civil society and other development partners), IDRC has ensured a active support of local institutions. Staff and community members have been trained in project management, financial management and managing a telecentre.	Staff, management and community members have been trained in various areas and the Local Management Committee brings needs and assets of their respective community members to the National Steering Committee. Various tools and guidelines have also been prepared to facilitate execution of various activities and various members have been trained in the use and application of ICTs, information retrieval, content development, business plan development amongst others. There has, however, been no concerted effort to target systematic training for Local Management Committee members	An exit strategy is articulated in the project and the only thing that was not spelled out was which local organisation would eventually own the telecentre. In the final phase of the project, focus became more sharpened for devolution. Various options were considered for ownership such as entrepreneurs, the local administration to run the telecentres. Training was also conducted to equip the Local Management Committee with necessary management skills.	IDRC has extended the project period in preparation for devolution. The Acacia Initiative (effort led by IDRC to empower sub-Saharan Africa communities with the ability to apply ICTs to their own social and economic development) is trying to demonstrate the feasibility and validity of telecentres in rural and sub-urban areas and generate knowledge on the viability of different models from these test-beds. IDRC will however consider supporting research projects aimed at improving and expanding the activities of the telecentres	IDRC does not see replication as its business and expects other agencies that want to see development such as the government, private sector and civil society to pick up the idea and apply the knowledge generated and rollout telecentres. A number of actors have started telecentres and cyber cafes using different models following the expansion of telephony.
	International Telecommunications Union	The International Telecommunications Union (ITU) provided a budget for telecommunication equipment, power and a tower.				
	National Agricultural Research Organization	NARO has supported the institutional development of telecentres through the implementation of the Electronic Delivery of Agricultural Information to Rural Communities in Uganda, in collaboration with CAB International and (financial support from IDRC). Sensitization workshops have been conducted and several training of trainers courses.	Staff, management and community members have been trained in the use of ICTs for information retrieval, content development and repackaging of information into different formats and media. NARO has also empowered telecentres in Uganda with agricultural content through the provision of their information resources.	NARO is working with the trained trainers and offering opportunity for the trainers to apply what they have learned in information retrieval and content development and providing support to telecentre staff and community members as necessary in preparation for exit.	NARO is working with other partners such as RUN Network to develop content for the telecentre and plans to develop more proposals with partners to allow implementation of other activities. NARO sees telecentres as important institutions and has developed the NARO 2010 strategy that spells out strategies for generating and disseminating technologies and knowledge to service deliverers.	

	Public Libraries Board	The Public Libraries Board (PLB) is a key player of the Nakaseke telecentre and was instrumental in the establishment of the information dissemination component of the telecentre. PLB rehabilitated and reinforced the rural information centre with financial and technical support from the British Council and UNESCO. PLB provided advise, technical assistance, staff to manage the resource center throughout the pilot phase and information resources from its own resources. PLB has also provided training in managing a resource centre.	The PLB requested the community to appoint a staff member to understudy the Information Officer to ensure sustainability of the resource center after the pilot phase. One person has been trained though the incumbent had other responsibilities and did not serve as an Assistant Information Officer on a full time basis. Most volunteers at the telecentre prefer ed to work with the computer services, hence none worked at the resource center.	PLB has withdrawn their Information Officer and replaced her with a new one for a futher one year period to ensure the community members can handle the activities of the resource centre or prepare to hire a new staff member.	In the long-term, the PLB intends to continue supporting the telecentre's resource cente and will continue providing information resources. They have also provided the center with an Information Officer and will continue paying the officer's salary for an additional one year after the pilot phase. The Board will also provide technical advise whenever necessary.	PLB has plans to rollout 15 more rural information centers based on lessons learned at Nakaseke.
	Uganda National Commission for UNESCO	The Uganda National Commission for UNESCO has played the role of executing agency and overall coordination and the management structure includes a management committee (responsible for decision making) comprising Uganda Telecom, Uganda Public Library Board, Uganda National Council for Science and Technology, other development partners such as IDRC and ITU and other stakeholders. The structure also has a local steering committee (responsible for the day to day running of the telecentre and overseeing governance issues (performance of the telecentre manager)) that contains representatives of the community e.g. farmers, women, the business community and the local administration.	Uganda National Commission for UNESCO and other partners have provided training for telecentre staff, management and community members (trained as trainers) and some members have gained from study tours. All stakeholders have also been involved in all stages of the project and management structures have been established that have empowered the community to run the telecentre on their own. The Commission has also helped establish 16 satellite centres and an outreach programme.	The Commission and partners have prepared the community for handing over of the telecentre to the community. The project period has been extended to ensure smooth running of the telecentre before handing over the telecentre to the community and will continue to oversee the telecentre's coodination during the transition period.	The Commission and UNESCO will look for more support from other donors and will start a new 2-year project (Community Multimedia Centre) that will introduce rural radio to generate more revenue. The project will also support staff costs and funds generated will be saved and will be used to support the centre after the project period.	The Commission's interest is to develop knowledge and models that other partners can adopt and start centres in other localities.

	UNESCO	In terms of institutional development, UNESCO – the executing agency for the Nakaseke Multipurpose Community Pilot Telecentre provided guidance, equipment, staff and recurrent expenditures. UNESCO along with other development partners (IDRC, ITU,has also trained various stakeholders including staff, management and the community. A good number of people have been trained as trainers. Several sensitization workshops have also been held. The Uganda National Commission for UNESCO has played the role of executing agency and overall coordination and the management structure includes a management committee (responsible for decision making) comprising Uganda Telecom, Uganda Public Library Board, Uganda National Council for Science and Technology, other development partners such as IDRC and ITU and other stakeholders. The structure also has a local steering committee (responsible for the day to day running of the telecentre and overseeing governance issues (performance of the telecentre manager)) that contains representatives of the community e.g. farmers, women, the business community and the local administration.	The partners have conducted various training courses (formal and informal), study tours and orientation sessions to provide exposure and empower the community. They have also encouraged links between community members, institutions integrated in collaborating activities and development partners through the establishment of national and local committees.	In preparation for exit, UNESCO and other development partners have conducted various training workshops such as the development of a business plan and training for the team that will manage the centre.	The pilot phase came to and end and the development partners extended this period. The partners are preparing to the local community before handing over the telecentre to the Local Council (LC3). UNESCO plans to fund the same telecentres under a new project that will transform the centre Nakaseke Community Multimedia Centre for a period of 2 years. This will include rural radio radio which is expected to generate much more revenue through announcements and broadcasting of development programmes that will be put in a fund and be used to run the CMC after the funding period. The rural radio will also overcome the distance barrier and allow for wider dissemination of information to the wider community in the more remote areas. UNESCO's long-term plans do not include direct funding but will use the telecentres as a platform for development in support of education, telemedicine, other health or agricultural applications. UNESCO will work with private/public partnerships. UNESCO plans to procure a new transmission link and provide assistance to the centers in	UNESCO will deal with piloting the telecentre idea, not with rollout and aims at sharing lessons and knowledge development. UNESCO expects countries, governments, private sector, civil society and entrepreneurs to adopt and apply this knowledge and rollout telecentres. UNESCO has also prepared a "cook book" for telecentre establishment and so far, more than 100 entrepreneurs have requested for copies from the Uganda UNESCO offices. UNESCO plans to follow up these entrepreneurs to find out how many have established telecentres. A number of private competing telecentres have emerged and are doing good business.
	Uganda Telkom Ltd	Uganda Telkom Ltd. (UTL) provided the switch with a capacity of 256 for the Nakaseke telecentre. The community members were therefore only expected to pay for the cost for telephone use. The International Telecommunications Union (ITU) provided a budget for equipment.	UTL continues to maintain and service the equipment	UTL owns the telephone exchange and will continue offering maintenance. Should Nakaseke want to buy their own equipment, UTL can provide maintenance on contract basis.	UTL will continue supporting the community based on demand and business sense.	UTL's operations are based on a business focus and its support towards roll out of telecentres will depend on profitability. UCC will step in to support rural areas where usage is low. In the long-term, UTL plans to use new equipment that is locally available and cheaper to maintain.

Appendix 7 Expert Interviews - Government Support

	Government contribution to telecentre sustainability
Uganda	The government of Uganda put in place a "Telecommunications policy in 1996 with the aim of reforming and restructuring the communications sector to increase penetration and level of communication through private sector investment. The Government of Uganda has employed a number of initiatives that aim at promoting development namely – the Poverty Eradication Plan; the Universal Primary Education, Rural Electrification and Transformation; Uganda Information Infrastructure Agenda; Information and Communication Technology Policy development, Plan for Modernization of Agriculture and Health Improvement Delivery.
Kenya	The Government of Kenya is committed to encouraging the growth of ICTs in the country as demonstrated by the recent trend of events in the country. The Ministry of Finance and Planning has been working on a national ICT programme; the National Communications Secretariat (Ministry of Transport and Communications) is gathering data to be used for a regulatory framework for E-commerce; ICTs are included in the Kenya Poverty Reduction Strategy Paper. Other government initiatives promoting ICTs include Decentralized HIV/AIDs and Reproductive Health Projects, Early Childhood Education and Development, Kenya Local Government Reform Programme, National Poverty Eradication Plan, Kenya Rural Development Strategy, National Information Infrastructure to promote and electronic-enabled Kenyan society and National Agriculture and Livestock Extension Programme. The Government has also established District Information Documentation Centres to provide development information to communities.

Appendix 8: Expert interviews – National Steering Committee

	National Steering Committee Advisory support	National Steering Committee involvement	National Steering Committee sustainability challenges
Uganda	The Uganda National Council for Science and Technology (UNCST) has the mandate for all technological developments thus supports the activities of the telecentres and encourages new projects to work with existing telecentres. UNCST coordinates the National Advisory Committee (NAC) and hosts the National Acacia Secretariat, which has provided training (troubleshooting, leadership skills, and business plan) to different categories of stakeholders. NAC provides advisory services and has formed a network of experts sharing a common vision. NAC has developed various devolution options and is transforming into an Information Society Foundation that will in additional to its current activities carry out advocacy, fundraising and spearheading an information society.	There are various institutions involved in the activities of telecentres ranging from the Uganda Communications Commission - developing policies and a Rural Communications Development Fund; development partners supporting the activities of the telecentre (e.g. UNESCO, IDRC, World Bank, ITU). Uganda Telecom Limited - provided telecommunications infrastructure, PLB provided support in stocking and management of the resource center, research organizations such as NARO, CABI, AFRENA worked on specific projects with the telecentres, educational institutions such as schools contributed a fee for use of telecentre activities and the civil society that supported and used the telecentre facilities.	Sustainability challenges included staff retention, revenue generation and rollout of telecentres among others
Kenya	Kenya does not have a national steering committee providing advisory services to all telecentres per se but the Kenya Information Society (KIS) fosters establishment of telecentres and was instrumental in the establishment of the Huruma telecentre. KIS also provides technical support where requested.	Different telecentres had different governing bodies. The Kwale Mtaa Dispensary Knowledge Centre for example was governed by the *AfriAfya* Steering Committee and had an Executive Board overseeing the management and financing of their seven pilot sites. The Steering Committee members were drawn from partner agencies.	Sustainability challenges included financial resources, lack of IT orientation, inadequate policies and infrastructure, the need to measure sustainability at the development level as opposed to financial sustainability and awareness creation amongst community members.

Appendix 9: Expert Interviews - Local Management Committee

	Management Committee measures to ensure telecentre continuity	Management Committee involvement of community	Management Committee plans for income generation	Management Committee development of staff and community empowerment	Management Committee views about charging for services	Management Committee sustainability challenges
Buwama	Centre was closed					
Nabweru telecentre	The Nabweru local administration is ready to take over the telecentre and houses the telecentre. The local administration will continue housing the telecentre, paying salaries and allowances of key staff (Local Council rates). The local administration also plans to include the telecentre in the Local Council's budget and to add new services to the telecentre to generate additional revenue and a business plan has been developed. Local Management Committee members have been trained in key areas of management of telecentres. The Local Management Committee is also exploring strategies for securing funding such as through proposal development. The committee is advised by the Acacia National secretariat and the National Steering Committee.	The community is involved through sensitization workshops, participation of community members and groups, training and meetings. The Local Management Committee comprises representatives of key community groups.	To generate more income, the centre plans to introduce additional services such as printing, charging all users, injecting entrepreneurial management style, engaging sales persons (on commission) to market telecentre services, hiring out of equipment and writing project proposals. The centre plans to acquire a satellite dish, printing machine, vehicle to support outreach programmes and to decentralize its services (satellites at Nansana, Kawempe, Maganjo) in order to reach more people. The centre further plans construct facilities to house the telecentre at a more neutral location to encourage more users to use the telecentre services. Volunteers are encouraged to recruit people for training and are motivated through payment of a 20% commission. The telecentre is also introducing community multimedia services which include a community radio.	Staff development is achieved through training, workshops, participation in community activities and exposure.	The Management Committee believes that the telecentre must charge a fee for some services and products to ensure sustainability.	Sustainability challenges include financial constraints and revenues being collected fall short of operational expenses, staff retention, inadequate human resources, donor salaries are high and the Local Council rates cannot match these, servicing, maintenance and replacement of equipment.

Nakaseke telecentre	The Nakaseke Local Council has been part of the local management committee and plans to undertake overall responsibility of the telecentre. The telecentre will be owned by the community but the Kasangombe Sub Counties will represent the community. The local council is paying salaries of some of the staff. A business plan and an annual work plan have been developed. Staff have been trained in various aspects of management including financial management and business plan development. The Local Council III has made financial contributions towards the operations of the centre in terms of staff salaries and allowances. The local management committee is advised by the National Steering Committee. The National Commission for UNESCO also plays an advisory and arbitrator role where necessary.	The community is involved through sensitization workshops and meetings, discussions, community mobilization, training, participation of representatives of key community groups (local leaders, youth, women, disabled, educationists and traders) in the Local Management Committee. The telecentre is now operating as a Community Multimedia Centre.	The Local Management Committee plans to introduce new revenue generating activities such as through rural radio adverts, add-on projects, and schools' subscription fee. The local administration has also included the telecentre on its budget.	Staff and community empowerment is attained through training, workshops, participation in community activities.	Sustainability will be achieved through collaboration of all stakeholders so community members should pay for services.	Replacement of depreciating hardware and software, acquisition of development material in the local language.
Kabale telecentre	not interviewed					

Kivuli telecentre	The Kivuli telecentre is managed under the Koinonia Community.	Community members are involved through community mobilization, suggestions, feedback and evaluation of the services of the telecentre.	The Koinonia Community in Nairobi devote time and funds to run the Centre. Donor support is also sought from various developed nations such as the Italian Association Friends of Raoul Follerau. Calls have also been placed on the Koinonia web site for support from well wishers. The telecentre also charges a fee for training and telecommunication services to generate revenue for running the telecentre.	Staff development and empowerment is done through training, workshops, involvement in community activities and meetings of Andrew's School and Kivuli French School located on the same campus. The community is also involved through activities of the Catholic Church.	A fee must be charged to ensure sustainability but pricing should be based on affordability by community members.	High costs of telecommunication, poverty and motivation for volunteers.
Kwale - Mtaa Health Centre	The Kwale Mtaa Dispensary Knowledge System has a local management committee comprising representatives of key community groups. The committee is responsible for the management of the telecentre and decision making.	The community is involved through sensitization workshops, training, mobilization and participation in other health related activities.	Plans for income generation include charging for entertainment videos and TV programmes such as World Cup football, charging a fee for training and telephone services.	Staff development and community empowerment is done through training workshops, sensitization sessions and involvement of community members in the activities of the telecentre.	A subsidized fee should be charged or else the community will not afford the services bt health information should be provided free of charge.	High poverty levels in the district, staff retention after training, sustainability of mobile phone, poor infrastructure in the area) and high illiteracy levels

Huruma telecentre	The Huruma telecentre is managed and by the NCCK, which also provides the physical infrastructure, the telecentre manager, electricity, security and telephone. NCCK has engaged a manager - who also manages the health centre, and one technical staff. The management has prepared a financial forecast, a training plan and secured a loan to repair computers, the hub and to purchase a new modem.	Community members are involved through sensitization workshops, needs assessment, community mobilization, feedback and evaluation of services offered by the telecentre and participation in other activities at the health centre housing the telecentre.	The telecentre plans to introduce new services including binding, printing, photocopying, secretarial services, telephone, E-mail and training in the evenings. The centre also encourage professionals and institutions with skills in managing telecentres, and development agencies and the community to support on-going initiatives. The project sponsors include the British Council, NCCK, Software Technologies Limited, AfricaOnline, Kenya Information Society, NCCK Huruma clinic and Huruma communities	Staff need to be trained in telecentre management and more sensitization of community members to create awareness of the services of the telecentre.	The telecentre will have to charge for services to ensure sustainability. This way people will attach more value to the services they receive.	Lack of a project document to guide implementation, maintenance and upgrading of equipment, inadequate human resources, poverty levels, inadequate sensitization of community members.

Appendix 10 Expert Interviews - Regulators

Regulator	Regulator contribution to telecentre sustainability	Regulator pricing policies and subsidies encouraging investment in rural/urban poor	Regulator fund for ensuring universal access to communications	Regulator long term plans for telecentres	Regulator key sustainability challenges for telecentres
Uganda Communications Commission	The UCC enhances national coverage of telecommunications services and products, works towards the development and improvement of rural communication services, and encourages participation of private investors. UCC has facilitated rural communications development through a reform process that provides for rollout service obligations that improve quality and geographical penetration, introduction of effective competition through licensing and statutory provision for the establishment and administration of the RCDF.	The UCC has waived license fees for telecentres as an incentive to entrepreneurs to invest in establishing more telecentres. Those using VSAT must however pay a registration and license fee of about US$2,500. UCC will also subsidize investors investing in remote and sparsely populated areas based on a subsidy forecast of 10 years. The minimum subsidy concession will be determined by the financial cash flow and will aim at bringing the investor to zero. The Commission aimed at subsidizing about 25 investors in 2002.	UCC has a rural communications development Fund. The RCDF ensures universal access and acts as a "means of intervention" to ensure basic communication services and that ICTs are accessible to all Ugandans at reasonable distances and at affordable prices. The fund is used to assist areas where private entrepreneurs are not attracted to because it is not feasible to operate commercially, where there is no provision of basic access or to leverage investment. Disbursement of funds is based on providing basic communications and Internet services in rural areas and is on a competitive basis.	UCC is currently discussing the support they will render to existing telecentres in the country.	Underutilization of the facility provided (few subscribers); the amount spent on maintaining and running the generators, and security is much higher that the revenue generated e.g. by UTL from the low traffic at the Nakaseke exchange; the running of the equipment is therefore not sustainable; vandalism of equipment parts, solar panels and cables; rapid trends in technology and newer technologies such as VSAT are now available to serve community needs; lack of technical experts within the community to service the equipment; content that is relevant to the rural community; projects that are donor driven and not business driven.

Communications Commission Kenya	Addresses regulatory issues - telecommunication, postal and radio communication; enhances liberalization, which leads to improved services and reduced costs. The CCK recognizes telecentres as important community projects, hence makes it easy to start telecentres. Registration requirements are simple, and include a one off affordable registration fee of US$ thirteen (US$ 13). A certificate is then issued enabling the operator to sell telephony to the public. Other incentives include gaining priority when demanding for service (i.e. the license gives the operator first priority compared to other firms or individuals that may have requested for services earlier).	The CCK does not have pricing policies. This will be addressed in the on-going study. The Commission is currently working with a Canadian consultant (with support from IDRC) to develop a telecommunications policy, strategies and plan. The study will also address issues related to the establishment of a rural communications development fund that will ensure universal access. This should encourage investment and rollout of telecentres.	Kenya does not yet have a rural communications development fund to ensure universal access but a proposal exists to establish a universal fund to support telecommunications development projects. The modus operandi of the fund will be determined by the on-going study.	The CCK recognizes rural communications is part and parcel of life and as necessary for development. It encourages the licensing of operators wishing to invest in disadvantaged areas that have good strategies of encouraging universal access such as investing in fixed telephones or community telecentres. The on-going study will also chart out the commissions long-term strategy for supporting telecentres.	The key sustainability challenges for telecentres include a deliberate effort by the government to rollout telecentres through reduced taxation on information technology equipment; subsidizing services to operators; Government support to community telecentres; incentives to investors and public to use facilities of telecentre; ensure telecentres are community based; develop partnerships of the private sector, public sector and civil society; the country's GDP indicates that Kenya has the necessary resources, which must be utilized to support telecentres as a matter of high priority.