

**TELECENTERS AND THE GENDER DIMENSION: AN EXAMINATION OF HOW  
ENGENDERED TELECENTERS ARE DIFFUSED IN AFRICA**

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Kelby Johnson

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# **TELECENTERS AND THE GENDER DIMENSION: AN EXAMINATION OF HOW ENGENDERED TELECENTERS ARE DIFFUSED IN AFRICA**

Kelby Johnson, B.S.

Thesis Advisor: D. Linda Garcia, Ph.D

## **Abstract**

Telecenters have become an important component to development programs that seek to narrow the digital and knowledge divides that exist throughout the world. Despite the proliferation of telecenters throughout Africa, women continue to be cut off from essential info-communication resources that could improve their lives. This thesis examines the relationship between gender differences, telecenter design and women's accessibility to information and communication technologies (ICTs). By examining how these elements interact in the context of the diffusion model, this thesis suggests that the incorporation of the gender dimension into telecenter designs can enhance the diffusion of engendered telecenters, thereby increasing women's access to ICTs and improving their ability to contribute to the evolution of Africa's information society.

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## Table of Contents

<a href="#">1.0 Telecenters and the Gender Dimension</a> .....	1
<a href="#">Introduction</a> .....	1
<a href="#">2.0 Conceptualizing the argument: Diffusing Engendered Information and Communication Technologies</a> .....	7
<a href="#">Introduction</a> .....	7
<a href="#">2.1 Why ICTs are Important</a> .....	8
<a href="#">2.2 A Role for Gender in ICT Diffusion</a> .....	10
<a href="#">2.3 Understanding Diffusion</a> .....	12
<a href="#">The Innovation</a> .....	14
<a href="#">Communication Channels</a> .....	16
<a href="#">Time Considerations</a> .....	19
<a href="#">Social System</a> .....	22
<a href="#">Summary</a> .....	24
<a href="#">3.0 ICTs in Africa: Realizing the Potential</a> .....	27
<a href="#">Introduction</a> .....	27
<a href="#">3.1 Realizing the Potential</a> .....	28
<a href="#">Digital Education</a> .....	28
<a href="#">E-Business</a> .....	30
<a href="#">ICTs and Healthcare</a> .....	32
<a href="#">ICTs and Policy</a> .....	33
<a href="#">ICTs and the Environment</a> .....	34
<a href="#">3.3 The Need to Engender Telecenters</a> .....	35
<a href="#">3.4 Barriers Women Face</a> .....	36
<a href="#">Summary</a> .....	37
<a href="#">4.0 The Current State of Play</a> .....	39
<a href="#">Introduction</a> .....	39
<a href="#">4.1 Innovative Telecenter projects: A focus on women</a> .....	40
<a href="#">Timbuktu, Mali</a> .....	41
<a href="#">Nakasake, Uganda</a> .....	42
<a href="#">Wolisso, Ethiopia</a> .....	44
<a href="#">Gaseleka, South Africa</a> .....	45
<a href="#">4.2 To Engender or Not to Engender: Voices from the Field</a> .....	46
<a href="#">Uganda</a> .....	46

<u>South Africa</u> .....	48
<u>Mozambique</u> .....	49
<u>Nigeria</u> .....	50
<u>Ghana</u> .....	51
<u>Mali</u> .....	53
<u>Ethiopia</u> .....	55
<u>Lesotho</u> .....	56
<u>Senegal</u> .....	57
<u>Summary</u> .....	58
<u>5.0 The Way Forward</u> .....	61
<u>Introduction</u> .....	61
<u>5.1 Innovations and Uncertainty</u> .....	62
<u>Relative Advantage</u> .....	63
<u>Compatibility</u> .....	64
<u>Complexity</u> .....	66
<u>Trialability</u> .....	67
<u>Observability</u> .....	68
<u>5.2 Communication Channels</u> .....	69
<u>Africa’s Communication Systems</u> .....	70
<u>What needs to happen?</u> .....	72
<u>5.3 Time Considerations</u> .....	74
<u>Operating in African time</u> .....	75
<u>What needs to happen?</u> .....	76
<u>5.4 Social System</u> .....	77
<u>African Social Systems</u> .....	78
<u>What needs to happen?</u> .....	79
<u>Summary</u> .....	81
<u>Conclusion: Components of Success</u> .....	82
<u>Gender analysis</u> .....	84
<u>Establish a women-friendly environment</u> .....	85
<u>Engaging women</u> .....	86
<u>Ensuring Accessibility</u> .....	87
<u>Summary</u> .....	88
<u>Works Cited</u> .....	91
<u>Appendix: Feedback Responses</u> .....	98

## 1.0 Telecenters and the Gender Dimension

“Across the developing world, ICT is helping women and men improve their lives, take advantage of new opportunities and realize their full potential.”

*Digital Opportunity Initiative (2001)*<sup>1</sup>

### Introduction

As the development paradigm becomes more technology-centric, success in the global economy will depend on access to information and communication technologies (ICTs)<sup>2</sup> (Adeya and Cogburn 2001). Despite the reduction of time and space constraints, unequal access to new technology and knowledge development resources has exacerbated the marginalization of certain segments of the world community. Oppressed by centuries-old institutional norms, excluded from the public sphere because of cultural beliefs, and polarized by unequal power arrangements, these subordinate groups continue to be pushed to the margins as the process of globalization sweeps the world.<sup>3</sup>

Women in developing countries represent the largest subordinated segment of the global digital and knowledge divides, despite the focus on gender parity in development initiatives since the 1970s. Realizing the important role that women play in sustainable development, international organizations and community groups<sup>4</sup> alike are increasingly incorporating new technologies into the design of initiatives that extend the network to

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<sup>1</sup> The Digital Opportunity Initiative, which is driven by a consortium of Accenture, United Nations Development Program, and the Markle Foundation report can be viewed at: <http://www.undp.org.in/images/DOI-Final-Report.pdf>

<sup>2</sup> In the context of this paper, ICTs are defined as information age tools that utilize the power of technology advances such as computers, CD-ROMs, photocopiers, telephones. ICTs are more than simply technologies, however. They are a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information” (Lal, Gaumer and Manhica 2001).

<sup>3</sup> See *Weapons of the Week* by James Scott (1987) for additional details on subordinate classes.

disadvantaged areas. However, in many technology-driven development projects inadequate attention has been paid to the gender dimension<sup>5</sup> during the design and implementation stages, thus creating greater economic, social and political inequalities.

To date, technology-driven development projects have largely been viewed as gender neutral. This simplistic, generalized approach to development has often led to increased disparities relating to access to and usage of ICTs between men and women. While there is a complex array of factors that must be considered when designing and deploying new technologies in historically disadvantaged areas,<sup>6</sup> the lack of focus on gender dynamics has given rise to the emergence of a gender divide in many developing countries seeking to transition into the information age.

To mitigate this emerging divide between the sexes, it is imperative that the gender dimension be more closely incorporated into the design ICT-centric development initiatives. From online portals that allow women to report human rights abuses (e.g. sexual harassment and domestic abuse) directly to government officials in India to broadcasts for wind up radios relating to subsistence farming in Mozambique, ICT deployments in rural contexts throughout

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<sup>4</sup> For instance, the International Development Research Centre in Canada, the United States Development Agency and grassroots groups such as Women'sNet in Africa and Uganda Connect have each contributed to ushering in the information age into the continent.

<sup>5</sup> Broadly defined, the gender dimension is the culturally defined constructs that guide the interactions between men and women. While this paper acknowledges that gender has connotations for both men and women, references to gender are to be taken in a female-centric context. For a more comprehensive discussion on the gender dimension, see Harding and McGregor's essay titled, *The Gender Dimension in Science and Technology*:

<[http://www.unesco.org/science/publication/eng\\_pub/gender.htm](http://www.unesco.org/science/publication/eng_pub/gender.htm)>

<sup>6</sup> For instance, project administrators/managers must take into account the context in which new technologies are deployed. Only by acknowledging the socio-cultural constructs and values can new technologies successfully be diffused

the developing world have proved to be an essential component to women's socio-economic and cultural advancement.<sup>7</sup>

While there is a wide array of innovative, gender-sensitive ICT-centric projects taking place throughout the developing world, women continue to represent an inordinately large portion of disadvantaged groups. Largely because of the absence of gender-sensitive policies and design rules, many women are still unable to harness new technologies to redefine their roles in the increasingly interconnected world community. Access to ICTs is a prerequisite for new knowledge creation, and until the gender dimension is incorporated into their design, women in the developing world will continue to be marginalized, resulting, *inter alia*, in the loss of knowledge about local social systems.<sup>8</sup>

The effect that technology-centric development programs have on women depends on how they are designed and diffused. Given the cultural, institutional and contextual factors that must be incorporated into ICT implementations, the question arises: has a greater focus on the gender dimension in technology-centric development projects increased accessibility to innovations for women? More specifically, have gender specific changes in the design and implementation of telecenters in Africa improved women's ability to use new technologies?

In this thesis I will explore the complex relationship between the diffusion of ICTs, telecenter design and women's access to new technologies in African contexts. The argument formulated herein is based on the contention that sustainability of ICTs in Africa is dependent upon moving away from a gender-neutral approach to telecenter design and towards a more

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<sup>7</sup> For additional information on ICT deployments in less developed regions visit: [http://www.itu.int/osg/spu/wsis-themes/ict\\_stories](http://www.itu.int/osg/spu/wsis-themes/ict_stories).

<sup>8</sup> Women possess a wealth of untapped indigenous knowledge that has been passed down through generations. Additionally, given their role as key socializing agents, new generations will be brought up in a society that subscribes to false consciousness created by the elite; and perhaps most importantly the capacities and contributions of women may never be realized.

engendered one that is tailored to the diverse needs of women (and men) users. In the theoretical context of Everett Rogers' (1995) diffusion model, this thesis outlines how innovative ways of thinking about gender can have positive impacts on the diffusion of new technologies in historically disadvantaged societies.

Additionally, this thesis will draw upon the seminal works conducted by Nancy Hafkin et al. (2001), inter alia, and a variety of research conducted by international organizations, such as the United States Agency for International Development (USAID), the United Nations (UN), and the International Telecommunications Union (ITU), to demonstrate that increased technology diffusion, which is based on demand, depends on incorporating the gender dimension into the design and implementation of telecenters. Increased attention to the dynamics of gender has the potential to significantly impact the way in which new technologies are perceived and inevitably diffused.

To demonstrate the importance of gender in technology-driven development, the thesis is organized as follows. Chapter two offers a theoretical model within which ICTs can be leveraged to achieve development goals in disadvantaged areas. In the context of Rogers' (1995) diffusion model, the chapter outlines how embedded social norms, cultural representations and technology diffusion interact to facilitate change at a grassroots level. The conceptual framework developed in this chapter provides a foundation for better understanding the way in which ICTs can be used as catalysts for ideological and technological innovations.

Chapter three explores the role that a more engendered approach can play in increasing women's accessibility of ICTs. By focusing on the telecenter model, this chapter will highlight the potentially beneficial effects that increased access to ICTs can have on

improving women's lives. In the context of key social segments, such as education and healthcare, it demonstrates the importance of engendered telecenters to help women realize the socio-economic advantages of the information age.

From Mali to Mozambique, chapter four looks at the current state of telecenter deployments throughout the continent. Specifically, the chapter offers insights into country-specific telecenter projects, focusing on the effect they have had on female users specifically, and communities in general. Based on available empirical evidence and first hand interviews, the chapter highlights the relationship between women's accessibility to telecenters and the incorporation of the gender dimension into design and implementation processes.

Chapter five will examine the role that gender plays in diffusing new technologies in a variety of African countries. Specifically, this chapter explores how existing African environments are limiting the diffusion of engendered telecenters. The chapter offers insights into some of the key issues impeding women's access to telecenters, while also offering some potential strategies for improving the situation. Given that gender is a crucial element for diffusing new technologies in underserved areas, this chapter highlights some of the key changes that must be made to ensure that women's needs are incorporated into the design of telecenters.

Finally, chapter six provides an overview of some of the core components for making telecenters more gender aware, thereby improving women's accessibility to telecenters in Africa. The paper concludes by arguing that only by acknowledging, appreciating and incorporating gender differences into the design and implementation of telecenters specifically, and ICTs generally, can Africa join the ever-growing, globally connected information society.

This paper acknowledges that development is a very dynamic process, comprising a multitude of agents and elements. While economic and political considerations are essential to understanding the development process, this paper will focus on the socio-cultural aspects of diffusing new ideas and technologies in Africa. It is worth noting that social institutions, a key component of the theoretical framework developed herein, come in many guises, and are effected by a combination of economic, political and cultural factors. The next chapter outlines the diffusion model and existing theoretical frameworks that I will draw upon to demonstrate the importance of the gender dimension in diffusing new technologies.

## **2.0 Conceptualizing the argument: Diffusing Engendered Information and Communication Technologies**

“Marginalization of half a nation’s talent just does not make good sense.”

*Harding and McGreggor (1996)*

### **Introduction**

The introductory chapter provided a brief outline of the importance of considering the gender dynamics when designing and implementing ICT-centric projects. Moreover, it suggested that gender is a key issue to consider for diffusing new technologies to historically disadvantaged areas. This chapter covers the theoretical rationale for why 1) ICTs are a crucial element in helping Africa transition into the information age, and 2) the growing importance of gender considerations to the widespread and sustainable diffusion of ICTs. The conceptual framework, which is based on the diffusion model (Rogers 1995), highlights the relationship between technology-centric development and women’s accessibility of telecenters in African contexts.

In this age of global ideas, markets, knowledge and cultures, a country’s ability to create and obtain wealth, in whatever form, depends on a population’s capacity to learn (Mansell & Wehn 1998). Knowledge is power, and ICTs offer women a unique opportunity to reshape the outdated power arrangements that keep them at the margins of African societies. The cultivation of women’s knowledge and capacities depend on the diffusion not only of new technologies, but also in the diffusion of a new way of thinking about gender in historically male-dominated contexts. Before providing the conceptual framework of the diffusion model, it is important to first understand why ICTs and gender are essential elements in creating knowledge societies in Africa.

## 2.1 Why ICTs are Important

ICTs can serve as an organizer, equalizer and, perhaps most importantly, an institutional catalyst for social change and economic development (Hornick 1987). Ideally, basic telephone access and connectivity to the global information network should be considered a public good, with contextually relevant content available to all societies throughout the world (Hudson 1982). However, in reality, the lack of access to basic telecom services (e.g. public telephones) leaves the majority of African communities, especially those in rural areas, disconnected from global information networks.<sup>9</sup> The reasons for this are many. In some instances there is simply a lack of available financial and organizational resources to invest in building a universally accessible communications network. Repressive governments that use technology advances to maintain power and control are also major impediments.<sup>10</sup> Additionally, the high cost of infrastructure and services pose major challenges to extending the network to rural areas.

While there are a multitude of variables that determine the success of ICT deployments, some important lessons can be gleaned from existing implementations.<sup>11</sup> For instance, ICTs must be tailored to cultural and social contexts; technology-centric development initiatives must be participatory and engage multiple stakeholders; ICT deployments must be accompanied by sustainable awareness building and training programs;

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<sup>9</sup> This is slowly changing as mobile technologies are becoming more affordable and ubiquitous throughout the developing world. As less developed countries embrace new technologies, especially wireless and satellite solutions, more people at the margins of the world will have access to the international communications and knowledge network.

<sup>10</sup> In Zimbabwe, for instance, president Robert Mugabe, a dictator that has maintained power through violence and repression for more than 20 years, openly censors the media to ensure that his ZANU-PF party remains in power.

<sup>11</sup> See for instance the International Telecommunications Union's ICT Success Stories Home Page, which outlines some of the crucial parameters that influence ICT implementations [http://www.itu.int/osg/spu/wsis-themes/ict\\_stories](http://www.itu.int/osg/spu/wsis-themes/ict_stories).

and content must be localized for deployment and diffusion of ICTs to occur. ICT-centric development initiatives implemented with these fundamental principles in mind have proved to be effective catalysts for change in isolated areas of the world.

Access to information and new technologies is so critical to the evolution of modern societies that the United Nations placed it third on the list of the most important global issues facing women, after poverty and domestic violence (Hafkin and Taggart 2001). By helping to cultivate the skills and knowledge of women, social systems in Africa would benefit in that more people would have access to more ideas, innovative perspectives and an entirely new cadre of skilled individuals to aid the transition into the information age. In order to affect change, women must cooperate, unify, mobilize and synthesize their cultural actions to redefine the parameters of oppressive social structures (Freire 1970). Access to new information and knowledge resources can help women formulate a better way to learn from and contribute to the new global social order.

As empowerment tools, ICTs coupled with the forces of “grassroots globalization,”<sup>12</sup> can give women louder voices, greater opportunities and enhanced ability to design their own futures. Moreover, by leveraging ICTs to mobilize women’s groups, ICTs can help women combat environments of oppression and marginalization throughout Africa. An engendered approach to ICT diffusion gives women greater opportunities to increase their presence in their own communities, while also improving their ability to participate in the global political economy. In short, access to ICTs and new sources of knowledge creation will allow them to

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<sup>12</sup> In his book titled “Grassroots Globalization,” Arjun Appadurai (2000) defined grassroots globalization as “globalization from below.” This form of globalization, he argues, is facilitated by strategies and visions for “globalization on behalf of the poor” or underprivileged segments of society. See page 3-5.

utilize new technologies to transform the social constructs that keep them subordinate to dominant classes.

## **2.2 A Role for Gender in ICT Diffusion**

Prior to the colonial era, women enjoyed a relatively powerful position within most African communities. Based on lineages, elders, both male and female, dictated the way in which power was delegated within a given social system. Although the role that gender played in power systems in pre-colonial Africa depended on the location and community structure, most often senior women had authority over junior men (Robertson 2001). Women were no more powerful than men, but they were equally respected, and played a more prominent role in decision making processes at all levels of society.

During the colonial era, Europeans significantly altered the power relationships within African communities. By imposing their cultural norms, values and beliefs in the lands they inhabited, Europeans overturned centuries of African traditions and culture. Eventually, these transplanted institutions created a society that favored males over females. To this day, baby girls are still killed at birth because social norms favor boys,<sup>13</sup> a fact that has negatively impacted the psyche of innumerable African women. As Robertson (2001) noted, Westernized knowledge and skills became a prerequisite for power and authority in colonial Africa. In the process of reshaping tribal boundaries and cultural identities, colonial rulers created societies that made women subservient to males.

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<sup>13</sup> See Hazwell Kanjaye's article titled "*Rights – Africa: Beijing Promises for Advancing Women Unfulfilled*" (2001).

Even today, women are still pushed to the margins of African societies.<sup>14</sup> Comprising more than half of the population, women represent a very large and untapped source of social capital<sup>15</sup> and indigenous knowledge. Despite best efforts, most technology-centric development programs are shortsighted and fail to consider the gender dimension, often resulting in additional pressures on women.<sup>16</sup> To be effective and sustainable, ICT programs must be contextually, culturally and gender relevant. Improved access to ICTs can increase women's ability to use information and knowledge transfers to recast their roles as knowledge consumers and producers, thus helping them to move away from the periphery of African societies.

In every culture men and women differ in their information needs and views about technology.<sup>17</sup> These views, in turn, have an impact on how men and women access and use new technology resources. Although the differences among the sexes are apparent in most contexts, technology deployments continue to be gender indifferent. While an argument can be made that ICTs are gender-neutral, the fact remains that institutional frameworks and

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<sup>14</sup> In domestic contexts, as Rachel Solange Mienje Momo (2000) pointed out, African women do not live in isolation. They are the heart of the family system, and they play important roles as farmers and traders in virtually every rural community. However, in global contexts African women – and Africa in general – have been relegated to playing a marginal role in the world community.

<sup>15</sup> Social capital is the “aggregate version of human capability...based on norms and social relations embedded in the social structures of society that enable people to co-ordinate action and to achieve desired goals” (Deepa Narayan 1999).

<sup>16</sup> Leslie Steeves (2001) contends that most development projects fail to consider the gendered context of local situations, which typically results in placing more pressures and responsibilities on women. For instance, while ICTs can benefit women by giving them access to information and the global knowledge network, they must still tend to the elderly, farming, children and other domestic chores.

<sup>17</sup> In terms of information needs, women, as the centerpiece of African societies, need greater access to educational, healthcare, agriculture, legal, economic, political and environmental informational resources (Momo 2000). Men also need access to these types of information, but given women's historically marginalized position in society, these are specific segments that Momo and her colleagues identified in their study of women's accessibility of ICTs in Africa. Regarding differing views, the World Link organization found in their study on gender and ICTs that men tend to view access to new technologies – telecenters – as more entertainment-driven, while women see ICTs as communication and information gathering tools.

formal and informal social structures have a profound impact on the way in which new technologies are deployed and diffused.

Increased access to and the ability to use ICTs, if accompanied by a more women-friendly enabling environment, can have a dramatic effect on women's lives. For instance, ICTs broaden the world for both women and men. From virtual training and education via CD-ROMS to surfing the Internet for economic opportunities and using email to launch grassroots awareness campaigns about improvements in healthcare, new technologies can significantly alter the lives of users. Of course, in some areas greater access to ICTs can have negative effects (e.g. cultural homogenization and exploitation), but if designed according to contextual and cultural norms technology advances can have a positive impact on the social system as a whole.

### **2.3 Understanding Diffusion**

Having provided a brief overview of the role that ICTs and gender play in the evolution of Africa's information society, this section now turns to how these two variables fit into the diffusion model. In his book titled, "Diffusion of Innovations," Everett Rogers (1995) defined diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system." Using these four key elements – the innovation, communication channels, time considerations and the social system – this section outlines how an engendered approach to diffusing new technologies can positively impact women's accessibility to new technologies.

Diffusion is a complex, iterative process that takes place over time, and depends on a number of interrelated social, economic and political factors in a given social system. Whereas

deployment of new technologies is based on supply, diffusion is demand driven.

Demonstrative of the forces of supply and demand, diffusion of innovative ideas or technologies can generally be measured along an S-shaped curve – a pattern that reflects the way in which users adopt to an innovation.<sup>18</sup> Despite the prominence of technological advances in development initiatives, Africa’s overall technological position along this S-shaped curve remains at the inception stage.

Convincing societies to abandon deeply embedded ideologies about the social structure for some innovative and transformative idea is an arduous task. The innovation must clearly spell out the benefits and consequences in a culturally and contextually relevant way to be sustainable (Rogers 1995). For instance, it is essential that engendered telecenters be designed not only with gender differences in mind, but also in a way that allows social agents to understand the potential outcomes accompanying women-friendly telecenter environments. While many African women have benefited from ICT-centric development projects, women in underdeveloped areas continue to bear the consequences of the growing digital, knowledge, and gender divides.

Rogers (1995) pointed out that an understanding of culture, the local environment, and individual actors is a prerequisite to understanding how new ideas (gender sensitive development) and technologies (engendered telecenters) are diffused. Moreover, historical factors must also be taken into consideration when diffusing a new idea (North 1990). If new ideas and technologies are tailored to the context and culture, widespread adoption of the idea or technology is more likely.

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<sup>18</sup> In her paper titled, “Best Practices for Rural Internet Deployment: The Implications for Universal Service Policy,” Dr. Linda Garcia (2002) outlines in detail the processes of diffusion of new technologies. See, for instance, page 8 where she discusses the technology diffusion process.

Diffusion of innovations also depends on the way in which the idea or technology is implemented in a given social system. For instance, Rogers (1995) offered two basic models of diffusion: centralized and decentralized. Under a centralized model exogenous change agents employ a top-down approach to diffusion. The decentralized model is based on a more participatory, grassroots effort that employs a diverse group of stakeholders (e.g. community leaders and international organizations) in the diffusion process. While the decentralized model is preferable, in underdeveloped contexts it is difficult, at least initially, to avoid some level of centralized control when diffusing innovations.<sup>19</sup>

### *The Innovation*

The diffusion of any new idea or technology is always accompanied by an aura of uncertainty, especially if the idea or object threatens to make significant changes to the status quo. The newness of the innovation, by nature, forces social agents to critically examine its qualities, and how it relates to their situation. Therefore, as Rogers (1995) pointed out innovations, regardless of form, should be accompanied by information transfers that reduce the uncertainty of adopting it. Given the important role that ICTs are playing in contemporary development programs, improving societies' knowledge and understanding of new technologies is essential for widespread diffusion to occur.

There is a sharp distinction between a *gender-neutral* and an *engendered* approach to introducing a new element (e.g. telecenters) into a given society.<sup>20</sup> An engendered approach to

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<sup>19</sup> Because of their more participatory nature, decentralized diffusion models can be more effective in ensuring the success of engendered telecenters in Africa. However, given that many rural communities lack the knowledge and skills to utilize new technologies, some centralized guidance from national governments, for instance, is vital to the process.

<sup>20</sup> In their study, Hafkin and Taggart (2001) compared the dynamics between a gender-neutral and engendered approach to universal access policy processes. Differentiating between the two approaches,

telecenter design is both a technological and ideological innovation. From a technological view, telecenters by themselves are an innovation, in that they provide a new way to access information in underserved communities in Africa. Similarly, the incorporation of gender considerations requires a dramatic ideological shift on the part of society, which is itself an ideological innovation. As this paper argues, successful diffusion of engendered telecenters necessitates that these two innovations be married throughout the design and implementation phases.

In his diffusion model, Everett Rogers (1995) highlighted five key attributes of innovations. First, all innovations must demonstrate some level of *relative advantage*, or the belief that the innovative idea is better than its predecessors. This relative advantage plays an important role in the rate of adoption of the innovation. The second characteristic relates to the *compatibility* of the innovation to the environment in which it is being diffused. If the idea is too radical to fit within the boundaries of existing socio-cultural norms and institutional structures its adoption is less likely.

A third characteristic concerns the *complexity* of the innovation. For instance, because of embedded social norms that favor males over females it might be difficult for some members of a community to grasp the significance of the ideological shift necessary to diffuse engendered telecenters. Simpler innovations are adopted at a faster rate. This complexity can be reduced and addressed if an innovation is *trialable* as a pilot project, which is the fourth characteristic of innovations. *Observability* is the final characteristic of innovations. In regards

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Hafkin and Taggart noted that subtle tweaks to the design and implementation, such as explicitly mentioning women, focusing on female-headed households, and the involvement of grassroots women's social groups, can have important consequences for the effectiveness and sustainability of a policy implementation. It is this differentiation – between gender-neutral and engendered approaches to development – that this thesis seeks to address in the context of telecenter design in African contexts.

to engendered telecenters, the results of gender-aware telecenters are difficult to observe, thus many uncertainties about their effectiveness abound.

While incorporating the gender dimension into development programs is not a new concept, consideration of gender differences in the design and implementation of ICTs in underdeveloped contexts is a creative, new way to narrow the digital, knowledge and gender divides that keep women marginalized. Increased exposure and access to ICTs promotes cross-cultural networking, and improved information flows, while also fostering women's empowerment.<sup>21</sup> Despite the potentially positive impacts that increased access to ICTs can have on women's role in society, the lack of knowledge of and appreciation for the gender dimension continues to impede the diffusion of women-friendly telecenters. The key to bridging this knowledge gap is to open communication channels among all social agents throughout Africa.

### *Communication Channels*

#### Mass Communications vs. Interpersonal Communications

The information age is predicated on the need to be connected to the global communication and information network. Mass communication networks have proved to be the main source of connectivity to this globally interconnected system.<sup>22</sup> From wind up radios in rural Mozambique to palm pilots in Uganda, mass media channels have given rise to a giant

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<sup>21</sup> In their exploration of how ICTs can improve governance structures in Africa, Bhavya Lal, Gary Gaumer and Salamao Manhica (2001) pointed out that "[ICTs]...promote networking transcending borders, languages and culture, and foster empowerment of communities, women, youth and socially disadvantaged groups."

<sup>22</sup> In Ghana, for instance, women's needs and aspirations for communication and information flows were not considered in the design of mass media channels. This has often resulted in more demeaning and marginalized environments for women (Mensah-Kutin 1994).

cluster of information and communication flows throughout the world.<sup>23</sup> However, as Wilbur Schramm (1963) noted, mass communications, which is often utilized by the state to maintain existing power structures, can serve as either a national stimulus or tranquilizer. In the former sense mass communications can stimulate the desire for a society's need to achieve (McClelland 1993), but in the latter case it can result in what Bella Mody (1985) labels "mass audience programming."<sup>24</sup>

Despite the influence wielded by mass media, many researchers have found that the role that mass communications play in development has been overstated. For instance, Elihu Katz (1957) and Mody (1985) contend that the role of mass communications in facilitating development and influencing decision-making is much less important than previously assumed. Rather, they argue, interpersonal relations, specifically with opinion leaders,<sup>25</sup> are more important than mass media.

Both forms of communication are essential to diffusing new ideas in a given social system, with mass communication playing a more influential role in generating awareness of the innovation, while interpersonal interactions have a bigger impact on persuasion to embrace the innovation. Heather Hudson (1982) argued that interpersonal relations together with mass

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<sup>23</sup> In his comprehensive study about links, Albert-Laszlo Barabasi (2002) pointed out that, "Each of us is part of a large cluster, the worldwide social net, from which no one is left out." While his observation is correct, there are varying levels of connectivity to this global "social net." Barabasi also noted that nodes connect the global system, and Africa in general, women specifically, represent a node that operates at the periphery of the global system.

<sup>24</sup> The mass audience programming concept outlined by Mody (1985) can be viewed as a positive or a negative. If the masses are programmed to believe that opportunities exist outside of their realities, and they have the desire to better their socio-economic situation, mass communications play a positive role in development. Alternatively, if mass communications is used to promote ignorance, poverty and general underdevelopment, then it can be a detriment to development.

<sup>25</sup> Opinion leaders can be doctors, politicians, journalists, co-workers or neighbors. Relationships with opinion leaders can be vertical, patient-client or more lateral, employee-employee in nature. Opinion leaders are a core component to the diffusion model, as they work with change agents to facilitate the introduction of innovations in a given social system (Rogers 1995).

communications bring together fragmented societies, thus fostering development at a variety of levels. Ensuring that these two communication channels are interlinked is vital to generating awareness of women's technology needs and persuading African societies to adopt engendered telecenters.

### Women and Communication Channels

As the literature outlined above demonstrates, much research has been undertaken to better understand the role that communication channels play in development. Despite the recognition that access to ICTs is an essential component to sustainable development, women's issues in communications development research continues to be a periphery issue. Rogers (1995) pointed out that communication flows are the essence of the diffusion process, and in order for Africa to successfully transition into the information age women must play a central role in facilitating communication flows at the local level.

As Momo (2000) pointed out, African women do not live in isolation, but rather comprise a strong network of interpersonal interactions centered on domestic responsibilities (i.e. subsistence farming and child rearing). However, the fact remains that women continue to be marginalized throughout Africa. This marginalization of half of Africa's talent is not feasible for the continent's transition into an information society (McGregor and Harding 1996). Access to ICTs, and the information transfers it facilitates, can help women break free of the chains of subordination, while empowering them to become proactive change agents in Africa's ascension into the information age.

As ICTs become more prominent in everyday tasks, it is increasingly important that women help inform other women about the potential benefits that access to new knowledge

and information resources affords. By becoming proactive community leaders women can more effectively overcome the socio-cultural restraints that hold them back. It is important that women not only adapt to existing communication channels, but also create new models of communication that better suit their information and knowledge development needs.

In some capacity, most African women are engaged in a subtle and incremental social movement to redefine the way in which innovations are communicated. For instance, the South African-based Women's Net<sup>26</sup> was designed specifically to foster a more women-friendly environment, and ensure that women's voices and needs are heard. From skills training to social networking, Women's Net has become a valuable portal to new information and communication resources for many African women. As evidenced by the success of Women's Net, increased access to ICTs can help women redefine themselves in the networked world.

### *Time Considerations*

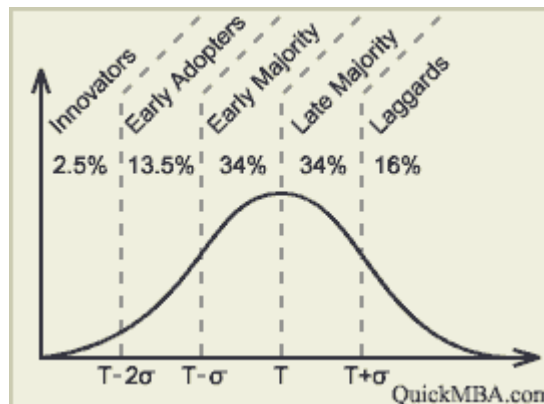
Time is the third key variable in Rogers' diffusion model. This variable comprises both time in relation to the innovation-decision process and the rate of adoption of the innovation. The innovation-decision process is comprised of the interaction between knowledge of the innovation, attitudes toward the innovation, the decision to adopt or reject the innovation, implementation of the innovation, and confirmation or reinforcement about the adopt/reject decision. This innovation-decision process is influenced by the ability of exogenous change agents and domestic opinion leaders to successfully persuade potential adopters of the relative advantages of engendered telecenters.

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<sup>26</sup> For additional information on Women's Net visit [www.womensnet.org.za](http://www.womensnet.org.za).

The second key component of time considerations in diffusing innovations is the rate of adoption of a new idea by a given social system. To illustrate this, Rogers (1995) outlined five ideal adopter categories: 1) innovators, 2) early adopters, 3) early majority, 4) late majority, and 5) laggards. The rate of adoption can be plotted on an S-shaped curve, where the innovators are positioned at the beginning of the S curve and the laggards are located close to the end or saturation point. Figure 1.0 offers a graphic illustration of the adopter categories.

**Figure 1.0**



Source: <http://www.quickmba.com/marketing/product/diffusion/>

While there are a variety of cultural, biological and environmental differences influencing the categories under which each individual falls, there are some commonalities between each category. For instance, Rogers (1995) pointed out that innovators and early adopters have greater exposure to mass media, and stronger interpersonal links than other

adopters.<sup>27</sup> Moreover, the individuals who first adopt an innovation tend to be less risk averse, thus allowing them to better cope with the uncertainties associated with new ideas and technologies. These first movers, as opinion leaders, play a vital role in diffusing the idea throughout society. However, diffusion is not an exact process, and is given to patterns of inequality that are dictated by socio-cultural institutional structures.

Access to global information and communication networks significantly alters the time/space paradigm for societies the world over (Huysen 2001).<sup>28</sup> Although ICTs have a variety of potentially positive benefits for all user groups, specifically women in disadvantaged areas, increased access to ICTs can also negatively impact the role that women play in society. By adding a layer of complexity to their already demanding lifestyles, increased access and exposure to ICTs often results in additional pressures on women. However, if designed with their needs in mind ICTs can give women access to information resources that were previously closed off to them because of time and space constraints.

Leslie Steeves (2001) contends that most development projects fail to consider the gendered context of local situations, which typically results in more pressures and responsibilities being placed on women. For instance, while ICTs can benefit women by giving them access to information and the global knowledge network, they must still tend to the elderly, farming, children and other domestic chores. Despite the potential for negative

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<sup>27</sup> Rogers (1995) also characterized innovators and early adopters as having more education, higher social status, are more aggressive consumers of mass media, greater exposure to change agents and are generally wealthier.

<sup>28</sup> In his article titled "Present Pasts: Media, Politics, Amnesia," Andreas Huysen (2001) noted that the compression of time-space continuum, which structure our daily lives, has given rise to new kinds of pressures. See his article in Arjun Appadurai's book on Globalization (2001) specifically pages 72-76.

outcomes, there can be no doubt that increasing women's accessibility to ICTs both expedites the diffusion process, while also altering the social system in their favor.

### *Social System*

The social system within which innovations are diffused is comprised of individuals, groups, organizations, inter alia. The system dynamics, which are currently slanted in favor of males, dictates how new ideas and technologies are diffused. The social system, as Rogers (1995) pointed out, represents the boundaries for diffusion. Despite the seemingly obvious fact that there is a common goal (e.g. sustainable development) that binds the system together, inequalities between the sexes in terms of access to opportunities are readily apparent in virtually every African country.

As mentioned previously, to understand diffusion it is essential to understand the underlying socio-cultural structures. These structures determine the level to which an innovation is embraced, the communication patterns within a society, and the time it takes for a new idea to be diffused. The social system, in essence, provides the necessary patterns of arrangements that reduce uncertainties, and facilitate the necessary relationship building mechanisms that are critical for diffusing a new idea or technology. Rogers' (1995) notion of *system effects*, whereby the structure and/or composition of the system influences the behavior of individual actors, underpins the entire diffusion process.

By dictating the way in which new ideas are formulated, system norms also have a dramatic effect on the diffusion process. Norms are a form of standard in a given social system, and can be either barriers to or facilitators of the diffusion of innovations. In the case of Africa, a change in the norms of behavior or preferences can lead to the gradual erosion of

existing norms (North 1990). This alteration in the structure could, in turn, help to equalize access to innovations for women (e.g. engendered telecenters).

### African Contexts

Rachel Maclean (1998) argued that African women are not excluded from specific technology-intensive jobs and opportunities, noting that technology is not inherently gendered. It is the socio-cultural framework that determines the parameters of what is male and female. Therefore, technologies generally, and telecenters specifically, must be designed to adapt to gender differences. While Maclean made her observation about the gender-neutrality of innovations in the Iron Age, it holds true in the information age. For instance, the way in which technologies are conceptualized is rooted in a society's history and culture. Adoption of gender-sensitive telecenters, then, is highly dependent on changing the social structures in which they are diffused.

Throughout Africa more attention is being paid to the structural inequalities that perpetuate the marginalization of women (Mensah-Kutin 1994). Social structures are guided by historically embedded institutions, which change incrementally (North 1990). Moreover, these social modifications, or shifts in ideological and technological paradigms, must be participatory and grassroots-based. However, "institutional, legal, socioeconomic and cultural constraints, which women have been unable to escape in any country, have denied them access to opportunities that are available to men" (Momo 2000).

Relegated to the periphery of society, women in disadvantaged areas are rarely in the position to play the role of opinion leaders, let alone interact with change agents in a constructive fashion. However, given equal access to new technologies and the requisite

training on how to use them, women can become productive opinion leaders and change agents. Social inclusion in knowledge societies is predicated on creating an enabling environment for equal access to communication and information resources (Mansell and Wehn 1998). By increasing their access and ability to use ICTs, women can play a more prominent role not only in the diffusion process, but also within African social systems.

The effectiveness of social-cultural impacts of technologies on African societies is historically contingent. For instance, South Africans, because of greater exposure to European values and processes, are more responsive to new technologies than their North African counterparts (Ngwainmbi 1999).<sup>29</sup> Theoretically, then, men, because of greater access to new technologies, are more responsive to innovative ideas than their female counterparts. This unequal arrangement is unsustainable. Greater equality between women and men can send the social system on a more positive trajectory. Women's access to ICTs breeds new ideas; new ideas give rise to new viewpoints about the structure of a given system; and these incremental institutional changes create a new, more equal social system that can benefit society overall.

## **Summary**

Diffusion is a complex and iterative process that requires the participation of a wide variety of domestic and international stakeholders. Guided by change agents, often from exogenous organizations,<sup>30</sup> opinion leaders work with innovators to diffuse a new idea or technology within a given social system. The time it takes to diffuse an innovation and the way it is communicated to a particular society depends on the degree to which the new idea or

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<sup>29</sup> Although their European colonizers left behind transplanted institutions that are incompatible with many African social systems, they also exposed many Africans to Westernized values and processes. This exposure, depending on the country and innovativeness of indigenous peoples, has equipped many

technology is designed around the unique gender and socio-cultural factors in a given social system. In the context of this paper, unless new technologies are designed with gender differences in mind, women's ability to participate in and contribute to Africa's information society will be limited.

While the consequences of diffusion of innovations are varied, Rogers (1995) offered three groups of classifications for outcomes:

- 1) Desirable vs. undesirable outcomes
- 2) Direct vs. indirect outcomes
- 3) Anticipated vs. unanticipated outcomes

Although it is difficult to accurately predict the effects that innovations can have on a given society, the incorporation of the gender dimension in the design and implementation of technology-centric programs has the potential to better serve all of society.

Although questions relating to these characteristics will be addressed throughout this thesis, it is important to understand that engendered telecenters offer many relative advantages to society; are not compatible with existing socio-cultural environments; can be simple enough to grasp if designed to fit the context and culture; can and are being implemented as a pilot projects throughout the developing world; and the infancy of engendered approaches to ICT-led development makes it difficult to accurately measure the societal outcomes.

As this thesis has argued, by unleashing the creativity of women, it is *desirable* to infuse gender dynamics into the design and implementation of new technologies. The inclusion of gender considerations in telecenters *directly* impacts the ability for women to

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Africans, specifically those in urban areas, with the skills to more easily realize the advantages of Africa's information revolution.

<sup>30</sup> For instance, International Development Research Centre (IDRC), USAID, the UN, IDRC, etc.

advance their socio-cultural, economic and political positions within the social system, while also altering the structure of unequal institutional frameworks. Greater attention to the gender dynamics in technology design could allow project administrators to better understand how the incorporation of the gender dimension into telecenter designs can increase women's accessibility. Rogers (1995) best summed up the benefit of diffusion research, saying, "A means to social revolution it is not. A helpful tool for social change and development, when accompanied by a basic restructuring of a society, it may be" (Rogers 1995).

### 3.0 ICTs in Africa: Realizing the Potential

“If information is power, lack of information is disenfranchisement.”  
*Nancy Hafkin and Nancy Taggart (2000)*

#### Introduction

Information and communication technologies are the key ingredients to helping historically disadvantaged groups improve their standard of living in the emerging global information society. However, women, who are disproportionately represented in these disadvantaged groups,<sup>31</sup> continue to be excluded from many of the key decision-making and implementation processes associated with ICT diffusion. This gender discrepancy has given rise to a gender divide within the ever-growing digital divide.

These divides continue to widen, despite the increasingly participatory nature of technology-centric development initiatives. This can be attributed to the fact that women’s issues are often an afterthought in the development process (Hafkin and Jorge 2002). In telecenters, for example, gender generally is a secondhand consideration for project designers.<sup>32</sup> To understand how telecenters, and ICTs in general, can assist in narrowing these chasms, it is first important to understand the current role that gender plays in the diffusion of innovations in Africa.

Illustrating the importance of having access to telecenters, the first section of this chapter focuses on the potential benefits accompanying the diffusion of ICTs. The second section focuses on the need to engender technologies to ensure that women can realize the

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<sup>31</sup> In her study titled “Women and Telecenters,” Janice Brodman (2002) pointed out that “advantaged segments of the population tend to reap greater benefits from new technologies than do the less advantaged, even if the technology itself is available to all.”

<sup>32</sup> After starting up, many telecenter managers realize that certain groups, most often those in hard to reach, remote areas, are underrepresented in the user community. To correct this discrepancy, they then launch targeted outreach campaigns to attract new users. See Appendix for some examples of how telecenter managers are reaching out to underserved social segments.

benefits of having equal access to telecenters. Finally, the chapter concludes by offering insights into what is currently missing in telecenter design, focusing on some of the key barriers facing African women.

### **3.1 Realizing the Potential**

Adoption and sustainability of telecenters depends on a wide array of factors. Whereas infrastructure, linguistic, and cultural barriers impede the diffusion of telecenters and access to ICTs, awareness raising campaigns and participatory approaches help facilitate widespread adoption. Given national governments' lack of political will relating to ICT-centric development and the private sector's indifference to rural development in many African countries, it is easy to see that the diffusion of telecenters in Africa is a very uncertain enterprise. Although there are a wide variety of areas where the ICTs could enhance society's ability to utilize ICTs to move into the information age, some key segments are especially important. There are five key areas that are vital for diffusion of ICTs and innovative telecenter designs: digital education, e-business, healthcare, governance and environmental protection. The potential for ICTs to help African communities in each of these areas is examined below.

#### *Digital Education*

Access to new knowledge resources is a prerequisite of sustainable development in the information age. Approaches designed to address the information and communication needs of all stakeholders are essential to helping Africa transition into a knowledge-based society. Despite the increasingly important role that ICTs are playing in development

education and training projects throughout the continent,<sup>33</sup> socio-cultural contexts continue to be a barrier for underprivileged social segments.

Given the limited educational resources found throughout the developing world, ICTs present a unique opportunity to cost effectively and efficiently deliver educational training to marginalized societies. Worldwide, there are a variety of innovative ICT-focused development initiatives that seek to modernize a countries' educational system and prepare future generations to become participants in the global information society – particularly at the primary and secondary school levels. From the Sunrin Internet High School in Seoul, Korea to the World Bank's World Links for Development (WorLD) project in Uganda,<sup>34</sup> digital education has the potential to narrow the information gap that exists between the developed and developing worlds.

The adoption of innovative digital education initiatives depends on a combination of factors ranging from human resource development to friendly institutional structures and local demand for and capability to use ICTs in educational settings. In the context of Rogers' (1995) diffusion model, adoption of digital education and training projects also depends, inter alia, on how compatible they are with existing social arrangements and communities' ability to understand how ICTs can improve the learning process.

For students and teachers alike, ICTs in the classroom help to fuel creative capacities, while providing technical skills that are essential for active participation in the global information society. Despite the many hurdles facing developing countries as they strive to

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<sup>33</sup> The African Virtual University (AVU) offers a good example of how ICTs are being used to address Africa's development issues. By expanding science and technology education opportunities to disadvantaged groups, the AVU is helping to reduce the brain drain throughout Africa by cultivating the untapped skills of African peoples (ITU 2002).

<sup>34</sup> See the ITU's ICT Success Factor Digital Education page for further information ([http://www.itu.int/osg/spu/wsis-themes/ict\\_stories/DigitalEducation.html](http://www.itu.int/osg/spu/wsis-themes/ict_stories/DigitalEducation.html)).

modernize their education systems, ICTs are an effective vehicle for bringing a twenty-first century education to all peoples of the world.

**Focus on World Links: Exploring the Gender Impacts of World Links in Education**

Despite increases in girls' and women's participation in the World Links ICT-in-education programs, the elements that lead to this increase remain unknown. The December 2001 study on gender and ICT access and usage in African schools provided comprehensive insights from four countries: Uganda, Senegal, Mauritania and Ghana. The study found that despite their timid and unequal access to ICTs women tend to benefit more from the academic, personal achievement and communication functions of technology diffusion. The study also highlighted many of the socio-cultural institutional barriers that hold women back.

While responses varied by region, gender inequalities were more prominent in Uganda and Ghana than in Senegal and Mauritania. In the former two countries, 95 percent of girls said their access to computers was very limited, and cited socio-cultural hurdles (e.g. gender roles) as the root cause. For instance, in Uganda it is not customary for girls to run, which allows boys to beat them to computer work stations. One female student said, "Boys outnumber us, and once they sit in front of the computers they never get up." Conversely, in Senegal and Mauritania, 70 percent and 60 percent of girls, respectively, indicated that they did not feel discriminated against in accessing ICTs.

In terms of what girls and boys do when they access ICTs, the World Links report found that girls benefit more because they explore more substantive content. One school official noted that the difficulty of accessing new technologies and information resources prompts women to utilize what little time they have on computers to learning about subjects relevant to bettering their lives (e.g. sexual and healthcare topics). Boys in the meantime, the study reported, are more concerned with music downloads and online entertainment. Women also spend more time research academic topics and communicating with friends and family abroad.

One student said, "[the Internet] is for us a way of escaping from our closed society...it gives us liberty." By improving girls and women's education opportunities, their self-esteem, and technology skills, they have become more important and proactive change agents throughout Africa. For further information on the World Links "Exploring the Gender Impacts of World Links" report, visit: [www.worldlinks/gender.org](http://www.worldlinks/gender.org)

*Electronic Business*

Agriculture is one of the key business sectors that the relative advantages of ICTs are most readily apparent, especially since most African countries rely on agriculture for economic sustainability. Just as today's farmer relies on radio, and perhaps satellite feeds, for

information about markets and weather, tomorrow's farmer might instantly access agriculture-related knowledge and information via Internet services provided by a local telecenter.<sup>35</sup>

According to a farmer in Nabweru, Uganda, "The [tele]center will bring information about better agricultural practices. I want higher yields so that I can earn more money to send my children to school" (Opoku-Mensah 2001). The real-time access to information about markets, prices and weather updates facilitated by ICTs could make farming in Africa more efficient and effective.<sup>36</sup>

E-commerce is another important area where the relative advantages of ICTs are evident. While cultural, infrastructure, regulatory, linguistic and economic barriers continue to impede widespread adoption, a number of entrepreneurs in many underdeveloped countries have embraced e-commerce. While not a universal remedy for sustainable development, e-commerce gives marginalized peoples an opportunity to market and sell their indigenous products on the global market, thus aiding the process of human, social and economic development. Moreover, e-commerce also has an empowering function for women, who often represent the least connected segment of society.<sup>37</sup>

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<sup>35</sup> Telecenters could allow women, who comprise the majority of subsistence farming in rural areas, greater access to information about when and where to sow, more easily market their products, and help ensure a fair price for their goods (Hafkin & Taggart 2000).

<sup>36</sup> Despite the potentially beneficial effects that the diffusion of telecenters and information resources can have on women's livelihood, traditional beliefs, social customs and cultural expectations continue to render to second-class citizens – despite their major contribution to the continent's economic sustainability (Munyua 2000).

<sup>37</sup> In 1996, the Grameen Bank used cell phones in Bangladesh to help women expand women's skills, opportunities, and access to information resource to help them learn about healthcare, literacy and family planning. The Grameen Bank is a pillar of success for gender-specific development initiatives in the Third World. For further information visit: <http://www.idsusa.org/MicroCredit/CellPhone.htm>.

## *ICTs and Healthcare*

Similar to the education sector, the lack of access to basic healthcare continues to stifle social and economic advancement in many parts of the world, specifically in Africa. The fact that much of the working population in many developing countries is negatively impacted by HIV/AIDS, malaria and a variety of other deadly diseases makes it extremely difficult for underdeveloped societies to actively participate and contribute to the global economy. By providing disadvantaged peoples with access to information that is crucial for improving their lives, new info-communication networks are giving societies the world over the tools to more effectively prepare for and treat illnesses that threaten their socio-economic development.

From virtual doctors to videoconference consultations and digitized medical records, telemedicine is a relatively inexpensive and hugely beneficial option for the developing world.<sup>38</sup> By bringing together global health care and telecommunications experts, less developed countries are now capable of providing 21<sup>st</sup> century medical care to historically marginalized communities.<sup>39</sup> In Mozambique, for instance, ITU helped the government establish a network between central hospitals in two of the country's biggest cities, Maputo (the national capital) and Beira (ITU 2002). These new communication channels allow doctors in each city to confer with each other and share medical records to ensure that patients in their respective cities get the best possible care. The hospital in Beira now has instant access to radiologists located in the capital city, which has significantly improved patient care.

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<sup>38</sup> Telemedicine can also serve as a complement to traditional and natural medicinal remedies that are found in many African cultures.

<sup>39</sup> ICTs allow healthcare workers to more easily collaborate with domestic and international physicians, thus significantly expanding the information resources at their disposal (Lal, Gaumer & Manhuca 2001). In this capacity, access to ICTs can be a matter of life and death.

### *ICTs and Policy*

Governments around the world have embraced ICTs, specifically the Internet, as a means to streamline public sector processes, while providing citizens with easier access to government services. These increased information flows between the public and private sector has helped to establish an environment of trust and reliability between citizens and elected officials by making the latter more accountable. The adoption of ICTs at the national level can also help ensure that they are compatible with existing socio-cultural environments. Realizing the importance of establishing a national strategy for narrowing the gap between the information “haves” and “have nots,” most government ministries have begun to incorporate ICTs into their development and modernization initiatives.

By improving access to government resources and services, ICTs can also help facilitate networking for political and public interest advocacy campaigns, thus strengthening marginalized peoples’ ability to participate in the political arena. Given that access to information is a catalyst for social, economic and political change, the lack of information and development resources leads to disenfranchisement and dehumanization (Momo 2000). The new communication channels opened by greater access to ICTs have the potential to elevate the voices of disadvantaged groups, thus helping to redefine the role that they play in the global system.<sup>40</sup> Whether they are streamlining the provisioning of government services or empowering populations, ICTs have become a prerequisite for modern governments the world over.

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<sup>40</sup> By diffusing contextually relevant information resources at the local community level, historically disadvantaged groups can more easily use them to access to information that they need to function as “informed citizens,” while also stimulating their involvement in the decision making process (Lal, Gummer, Manhica 2001).

## *ICTs and the Environment*

By making it easier to collect, distribute and analyze data from a variety of resources electronically, scientists and researchers around the world have been able to significantly increase their capacities to learn about the world's ecosystem.<sup>41</sup> While the Internet cannot stop environmental degradation and the pitfalls of underdevelopment, it has become a key source of understanding the boundaries of the natural world. Not only does digitized environmental data benefit scientists, but it also gives global policy-makers greater access to information resources, thus allowing them to better address problems through environmentally friendly collective action.

While most people in industrialized countries take access to weather information for granted, in the developing world such access can make the difference between famine and feast. For instance, in many communities throughout Africa, most of which rely on agriculture for subsistence, access to meteorological and climatological information is essential for sustainable socio-economic development.<sup>42</sup> In the information age, it is essential that all societies in every region of the world have equitable and timely access to information about climate change. However, in a recent survey conducted jointly by the World Meteorological Organization (WMO) and United Nations Development Programme (UNDP), African farmers reported that the quality of climate information and the timeliness of its delivery were the two

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<sup>41</sup> In his paper on ecology, information technology, and environmental policy, Michael Hunt Jones (1999) pointed out that there are direct and indirect linkages between the collection, distribution and analysis of environmental information. For further information visit: [http://www.cisp.org/imp/october\\_99/10\\_99hunt\\_jones.htm](http://www.cisp.org/imp/october_99/10_99hunt_jones.htm)

<sup>42</sup> In a paper for the IDRC, Nick Rivers-Moore and Duncan Hay (1998) noted, "A lack of knowledge on relevant issues can lead to poor environmental health and/or an inability to rectify the problem." To see the whole paper visit: <http://www.idrc.ca/acacia/03981/index.html>.

key factors impeding their ability to effectively use modern information resources (e.g. radio and Internet broadcasts).<sup>43</sup>

### **3.3 The Need to Engender Telecenters**

Despite their appeal as mechanisms to allow disadvantaged communities to leapfrog into the information age, the majority of telecenters throughout Africa continue to be designed and implemented without adequate consideration to the needs of women, their capacities and preferences (Rathgeber 2002). The low levels of women users, in tandem with the slow diffusion of ICTs on the continent, underscore the importance of making telecenters more gender aware.

In an age of globalization, knowledge represents a crucial source of power (Mansell & Wehn 1998). ICTs offer women a unique opportunity to reshape the outdated power arrangements existent in many African communities. However, despite the potentially positive benefits accompanying the diffusion of telecenters, women's needs continue to be the missing element in their design and implementation.

Most African women lack access to the tools that could help them cultivate the knowledge they possess. While they are not a panacea for the challenges facing women in Africa,<sup>44</sup> ICTs can help women to end the perpetual cycle of inequality and polarization found in most African societies. By gaining access to the global information network, women can tap into the knowledge and experience of other women who have historically been marginalized, thereby increasing their ability to participate in the public sphere – the crux of

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<sup>43</sup> For further information visit: [http://www.itu.int/osg/spu/wsis-themes/ict\\_stories/WMOcasestudy.html](http://www.itu.int/osg/spu/wsis-themes/ict_stories/WMOcasestudy.html).

<sup>44</sup> While ICTs can give women access to information to help them better their economic and social positions, they do little for helping to end domestic violence and the myriad of domestic tasks that face them on a daily basis.

African feminism (Mikell 1997). Additionally, by learning about how to improve their socio-economic positions through access to the international knowledge pool, women can reshape (mis)conceptions about their ability to produce and use new technologies.

ICTs, and the knowledge transfers they facilitate, can restore the power women once had in Africa – a respected position as a shaper of future generations in the ever-evolving global information society.

**Women’s Voices Project: An Engendered Example**

“ICTs are not just about technologies, but more about information transfer and communication” (Intermediate Technology Development Group 2003). Women’s Voices presents a prime example of this fact. As an initiative to utilize new technologies to allow women in marginalized areas to promote their culture beyond their borders, Women’s Voices is an exemplar example of how women can use ICTs for empowerment. By capturing and transferring information about women’s empowerment in Kenya, for instance, women in Zaire can both benefit from learning about a new culture and how ICTs can be used as tools for empowerment. Moreover, from a socio-cultural perspective, creative projects like Women’s Voices help to publicize the ubiquitous repression that women in Africa face to the rest of the world.

In Kenya, one of the three countries in which Women’s Voices operates, a group of women made a fifteen-minute film titled “Telling Our Story” that provided a glimpse the hardships that women in disadvantaged areas must endure. The film highlighted the health risks, isolation, and domestic responsibilities that women face on a daily basis. The film received worldwide notoriety, airing on the BBC, ABC World News, and a variety of domestic television networks. This Kenyan initiative represents one example of the new types of communication channels that are opened by information transfers facilitated by ICT diffusion.

Women’s Voices is an international project that works with poor women to support and expand existing communication channels and skills via new technologies. For further information visit: <http://www.itdg.org>.

**3.4 Barriers Women Face**

Mobility, time, literacy and cost are all important factors affecting women’s access to ICTs and telecenters. These constraints are largely shaped by existing socio-cultural arrangements. Set in place during the colonial era, institutional structures are designed by and for men. Women have largely been excluded from adapting outdated institutional

arrangements to community contexts. Couple these institutional constraints with repressive social norms and geographic barriers, and it is easy to see the difficulties that women face in communities throughout Africa.

Given the newness of ICTs in African communities, gender disaggregated information is virtually non-existent.<sup>45</sup> However, by examining the way in which new technologies are introduced and adopted, it is generally accepted that African women with access to ICTs are part of an urban, educated elite.<sup>46</sup> This urban-rural divide combined with male-dominated notions of knowledge creation and technology use relegates most women, specifically those in rural areas, to second-class citizenship in Africa's evolving information society (Karelse 2000).

By building their skills and knowledge, properly designed telecenters can help women overcome these barriers. Just as gender has become an important variable in measuring development, so too must women's issues be viewed as a key element in Africa's ascension into the information age.

## **Summary**

In order for engendered telecenters to take hold in Africa, women's needs and perceptions must become more prominent in the design and implementation of telecenters. Gender cannot continue to be an afterthought in development (Hafkin and Jorge 2002). The

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<sup>45</sup> In his report titled "Gender and ICT statistics," Michael Minges (2003) found that statistics showing a breakdown by gender in terms of ICT usage is limited. He said, "Of those government organizations that compile statistics, most do not provide a breakdown by gender." For further information visit: [http://www.itu.int/ITU-D/ict/wict02/doc/pdf/Doc07\\_E.pdf](http://www.itu.int/ITU-D/ict/wict02/doc/pdf/Doc07_E.pdf)

<sup>46</sup> In any given society, most new technologies are first introduced in urban areas then eventually, providing there is demand, are deployed in rural areas. Even in the U.S. regulators and legislators are still trying to find ways to close the urban-rural digital divide. Although approximately 60 percent of people in the developing world reside in rural areas, over 80 percent of the telephone lines are in urban areas (Jorge 2002). The urban-rural digital chasm is worse in developing countries.

incorporation of the gender dimension into the design of ICTs from the beginning can help drive female usage rates, thus allowing them to play a more productive role in building Africa's information society.

The absence of the gender dimension has impeded the diffusion of women-friendly telecenters in Africa. In Rogers' terms, technological *innovations* have not been effectively *communicated* throughout African *social systems*, thus lengthening the *time* of adoption of ICTs. However, as Michael Jensen (2001) said, "The telecenter approach may be one of the most important means of providing access to advanced services [e.g. digital education] in rural areas and therefore needs the support of all stakeholders as well as further study to determine the most appropriate models."

Until more African societies embrace gender as a key component to sustainable development, women's role in Africa's knowledge revolution will be limited. Drawing upon available empirical data and first hand interviews, the next chapter provides an overview of how telecenters are designed and diffused in a variety of African countries.

#### **4.0 The Current State of Play**

“Technology does not work in a societal vacuum; as soon as the technology enters the society, gender relations come into play.”

*Eva Rathgeber (2002)*

#### **Introduction**

Most development practitioners operating in Africa have embraced the importance of gender as a key element for sustainable development. Despite the growing appreciation for gender issues, women’s access to information and knowledge development resources continues to be very limited. Given that telecenters have become one of the most viable and cost effective ways to extend the global info-communication network to underserved areas, it is crucial to ensure that women have equal access to network resources and services offered by community-based telecenters.

Because most ICT projects do not focus on gender, information equality remains an elusive concept, especially in the developing world. This inequality stems, in part, from the low priority development practitioners place on gender analysis. As Hafkin and Jorge (2002) have noted, there is an urgent need for improved gender analysis in technology-driven development. Only by paying closer attention to the gender dimension can telecenters be effectively leveraged to tap into the full potential of African societies.

While there are a wide variety of telecenters in Africa, the examples highlighted below offer a cross sample of some of the innovative initiatives currently underway. Having previously established the need for and potential of engendered telecenters, this chapter provides a glimpse of the important role they play in many underserved African communities. The first section of this chapter draws upon available research on some interesting projects in

Mali, Uganda, Ethiopia and South Africa, focusing on their effects on the communities in which they operate. The second section offers local level perspectives on the different ways women and men access and use the services provided by rural telecenters.

#### **4.1 Innovative Telecenter projects: A focus on women**

Telecenters have become a centerpiece of technology-centric development initiatives and information transfers throughout Africa and the developing world.<sup>47</sup> The knowledge sharing facilitated by telecenters offers marginalized groups, specifically women, unprecedented opportunities to “leapfrog” into the information age.

Although the infancy of telecenters in African contexts prevents researchers from drawing concrete conclusions about their long-term effects, some general conclusions can be made about the impact they have on the communities in which they are deployed (Box 3.1). Given that the focus of this paper is on gender and telecenter design, this section concentrates on the impact telecenters have had on women.

**Box: 3.1: Telecenter trends...so far.**

- Women use the Internet to pursue academic and communication goals
- Women are intimidated by computers
- Lack of cultural content is a disincentive for women
- Women are more comfortable learning from other women
- Women’s usage of telecenters is severely limited due to community expectations
- Institutional environments are not supportive to women’s needs

\*Source: Sonia Jorge (2002)

Telecenter design and access is largely determined by the multitude of features that comprise a community's socio-cultural structure. In her study on women and telecenters, Janice Brodman (2002) noted that the socio-cultural beliefs and embedded gender roles tend to define technologies as tools for men. Additionally, in Nigeria, she found that women associated the word "technology" with males (Brodman 2002). This is not to say that women have not benefited from telecenters, but rather that benefits they provide end users are unequally slanted towards males.<sup>48</sup>

Given the lack of disaggregated data on access and the use of telecenters, it is difficult to discern what socio-cultural factors men and women bring to bear on their design and implementation. However, available research and the examples below show that greater attention needs to be paid to the gender dimension. The examples below illustrate how telecenters are helping to bring the information age to remote parts of Africa. As most of these examples demonstrate, females are an underrepresented user community.

#### *Timbuktu, Mali*

Viewed as a communications link to the interconnected world system, the Timbuktu telecenter is positively regarded by community members. Despite its geographical isolation, communities serviced by the Timbuktu telecenter are relatively sophisticated in their use of communication resources. In her study of this telecenter, Hudson (2001) found that 25 percent of the 212 respondents surveyed had used a telephone. Likewise, about 70 percent listen to the

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<sup>47</sup> As mentioned previously, telecenters take on many forms, and one such form that has been very effective in rural Africa are "phone shops" or "public call offices," of which there were over 9,000 throughout the continent in 1998 (Oestmann and Dymond 2001).

<sup>48</sup> While ICTs have the potential to strengthen women's socio-economic position, they can also serve as tools for increased subordination (Karelse and Sylla 2000).

radio, while approximately 58 percent watch television weekly. From email to entertainment and training services, the telecenter has helped link villagers in Timbuktu to the global information society.

The telecenter has also helped all the users reduce their communication and information gathering costs – an important benefit in areas plagued by poverty. Specifically, users' access to market information (e.g. crop prices) and other cultures has increased. Thus, the telecenter has helped many community members improve their socio-economic well being, while also making them more aware of how telecenters have benefited communities in other parts of Africa.

Like other telecenter projects, accessibility to new information resources is unevenly dispersed throughout the community. Although females comprise approximately 35 percent of the user population, women working in the public sector have reported having less access to telephone and fax services than their male counterparts (Hudson 2001). There is a wide array of factors that stifle women's access to the telecenter, the most important of which are time and cost.<sup>49</sup> However, inequalities aside, women are clearly appreciative of the benefits. As one woman noted in the Timbuktu telecenter logbook, "L'information est la cle de toutes les portes" (Information is the key to all doors) (Hudson 2001).

*Nakasake, Uganda*

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<sup>49</sup> In her presentation on the lessons learned from telecenters, Eva Rathgeber (2002) pointed out the Malian women are unable to afford the fees necessary to access telecenters.

Located about 50 kilometers from Uganda's capital, Kampala, the Nakasake multipurpose community telecenter (MCT)<sup>50</sup> was created in 1999 to connect the more than 31,000 inhabitants in the Nakasake and Kasangombe villages to the global information society (ITU 2002).<sup>51</sup> The MCT initiative was launched both to demonstrate the benefits ICTs can bring to rural areas, and to test the use of ICTs for rural development (Mayanja 2001).

Despite a lack of infrastructure and low literacy rates, the MCT has made progress in empowering the community. The developers of the telecenter adopted a participatory approach to ensure sustainability. Thus, they set up a local management committee to oversee the daily operations, as well as a local management committee, a local steering committee and a core user-group committee.<sup>52</sup> Moreover, to tap into the local capacities and ensure community adoption, the project administrators provided technological and management training to over 20 community members.<sup>53</sup>

Only 45 percent of the total population uses the telecenter. However, more than half of these are located in the most rural areas (ITU 2002). As with most African telecenters, women comprise only small portion (25 percent) of the more than 500 registered users.<sup>54</sup> To

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<sup>50</sup> The Nakasake MCT is equipped with one television, a VCR, five computers, a printer, two telephone lines, a scanner, a fax machine and a photocopier – the latter item being the most popular among users (ITU 2002).

<sup>51</sup> Because of the community's history of civil unrest and the effects it has had on the village's infrastructure, Meddie Mayanja (2001) pointed out that Nakasake was also a good place to pilot the MCT program.

<sup>52</sup> Mike Jensen and Anriette Esterhuysen (2001), in their paper titled "The Community Telecentre Cookbook for Africa," identified the establishment of these key components for successful implementation of telecenters in Africa.

<sup>53</sup> Between March-April 1999 more than 20 members of the community were trained in the use of ICTs. Some of the original trainees have gone on to train more than 80 users. Training has become so popular that such services account for 30 percent of total annual revenue (Mayanja 2001).

<sup>54</sup> Statistics were gathered from Meddie Mayanja's (2001) overview of the Nakasake MCT prepared for the Commonwealth of Learning. For more information on his paper, visit: <http://www.col.org/telecentres/chapter%2010.pdf>.

encourage women's participation, the project administrators have planned targeted outreach campaigns and special times for women's access (Etta 2003).

### *Wolisso, Ethiopia*

Launched in 2000, the Wolisso MCT has made “the world's pool of information accessible to the communities” it serves.<sup>55</sup> In order to benefit from the synergies associated with facilitating information exchange, the founders selected the public library for the center. While the MCT offers a wide variety of technologies and services, the project focuses on providing basic information services required by users in their daily lives.<sup>56</sup>

The administrators of the project use the process of engagement to help ensure that Wolisso residents embrace ICTs for empowerment and development. As demonstrated elsewhere in Africa, this grassroots approach facilitates community ownership, thus securing the telecenter's sustainability.

The MCT user community is very diverse, but the most frequent users are students and researchers. Similar to the telecenters highlighted above, women are a vastly underrepresented user group. For example, according to the Wolisso Web site, only 11.8 percent of the users registered in 1999 were female.<sup>57</sup> Given the low percentage of female

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<sup>55</sup> The Ethiopian British Council in conjunction with the Ethiopian Science and Technology Commission (ESTC) originated the idea for the MCT in 1997, but it wasn't launched until 2000. It was the first in Ethiopia (Chekol 2003). See [www.telecom.net.et/~wolisso](http://www.telecom.net.et/~wolisso) under objectives for quote resource.

<sup>56</sup> Statistics were gathered from the Wolisso MCT Internet site. For further information on the Wolisso MCT visit: <http://www.telecom.net.et/~wolisso/index.html>.

<sup>57</sup> The Wolisso site also noted that the percentage of female users decreased from almost 21 percent in 1998 to less to the 11.8 percent the following year.

users, it is apparent that much more needs to be done to provide incentives for girls and women to visit the telecenter.

### *Gaseleka, South Africa*

The Gaseleka telecenter is located near the Botswana border in one of South Africa's poorest provinces. Established by the South African Universal Service Agency in 1998, this telecenter now serves as an important means for accessing information and generating knowledge for rural South Africans (Jensen and Esterhuysen 2001). With illiteracy rates of 70 percent, access to new technologies is helping to prepare new generations of South Africans for the information age (Benjamin 2001).

The South African National Civic Organization (SANCO) owns the Gaseleka telecenter. To bolster its ties with the community, SANCO established a 15-member sub-committee to manage its operations (Benjamin 2001). In addition, it has established a partnership with the South African Department of Home Affairs, which uses the center to provide government services, such as the issuance of identification cards, to villagers (Jensen and Esterhuysen 2001). The telecenter also serves as a post office and as a key site for community engagement. The strong community has enhanced the telecenter's success.

Perhaps its greatest achievement is in attracting women, who now comprise about 60 percent of the more than 50 people that use the telecenter daily (Benjamin 2001). Drawn by the opportunity to participate in computer training, women have widely embraced the

additional services that the telecenter offers. In fact, two women run the telecenter.<sup>58</sup>

Computer training, provided by faculty from a local technical college, is especially popular.

For example, women constituted 31 of the 46 graduates of a 15-week training program offered in 1999 (Benjamin 2001).

#### **4.2 To Engender or Not to Engender: Voices from the Field**

Engendering telecenters for sustainable development requires an appreciation of local needs and contexts, two key concepts often overlooked by many development organizations. While there are some common features inherent in all telecenters, such as information and knowledge resources, their effectiveness in the development process depends on how closely they are modeled to fit local environments. Successful diffusion of telecenters is also determined by how flexible they are to the changing communication needs of a given community (Hudson 2001).

Even though women are well represented in some telecenters (e.g. Gaseleka, South Africa), they have gained only marginal benefits – compared to men – from having access. Due to the lack of attention to gender differences during the design phases of the development of telecenters, the information needs of female users are often overlooked. As described below, the incorporation of gender differences in African telecenters doesn't always correlate with increased accessibility for female users.

#### *Uganda*

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<sup>58</sup> See <http://www.communitysa.org.za/> for further information on the Gaseleka telecenter.

While a variety of interesting telecenter projects are currently underway throughout Africa, Uganda has emerged as a test-bed for implementing technology-centric development projects. Uganda's relatively high literacy rate (64 percent) makes it an attractive place to deploy and test the effectiveness of ICTs for development. Three key telecenter projects are currently underway in Uganda: Nakasake MCT (highlighted above), and the telecenters in Nabwru and Buwama.

According to Richard Bungmbe,<sup>59</sup> the Nakasake MCT was designed to respond to the information needs of different user groups, including women. Although there are more men than women using the telecenter, it houses some applications that appeal specifically to women (Bungmbe 2003). For instance, women find that CD-ROMs about economic options for rural environments are especially useful. Women are also attracted to services about income generation and healthcare – a finding common among all telecenters throughout Africa. Unfortunately, however, women's busy schedules often do not allow them to visit the telecenters and take advantage of these services (Mayanja 2003).

Patricia Litho, a project officer for the Acacia Secretariat, says that gender has also played an important role in the development of the Nabwru and Buwama telecenters.<sup>60</sup> As she notes, women were one of the initial targeted user groups. Access to these telecenters, she adds, has given women, a greater sense of personal agency and increased power over their own lives. However, women only comprise 35 percent and 40 percent of the Nabwru and Buwama telecenters, respectively. Only by helping women overcome linguistic and socio-

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<sup>59</sup> Feedback was gathered from an email interview with Mr. Bungmbe, the former manager of the Nakasake MCT, in March 2002. See Appendix for full interview responses.

<sup>60</sup> Feedback was gathered from an email interview with Ms. Litho in February 2003.

cultural constraints can they fully realize the benefits of having access to telecenters (Litho 2003).<sup>61</sup>

### *South Africa*

Despite the progress made to overcome the inequalities of the apartheid era, the digital and knowledge divides in South Africa continue to widen, especially along gender lines. Although interviews conducted with telecenter managers and consultants in South Africa show that gender was an important consideration in the design of telecenters, all interviewees ranked domestic expectations, socio-cultural constraints and economic hurdles as the key impediments to women's access. Given that women are responsible for the daily household responsibilities, coupled with the control that men exert over family finances, women's access to telecenters is limited.<sup>62</sup>

Strategies to attract women users have done little to breakdown these barriers. According to Tina James (2003), gender considerations become an issue when setting criteria for training telecenter managers. James noted that the criteria designed by the International Development Research Centre (IDRC) and the South African Universal Service Agency stipulated that at least half of the Pretoria telecenter managers needed to be female. As Sylla (2002) has pointed out, women prefer to be assisted by other women.<sup>63</sup>

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<sup>61</sup> Ms. Litho (2003) also indicated that women's domestic workload also hampers their ability to leverage the information and knowledge development resources offered by the telecenters to their advantage. Accordingly, the telecenter managers are currently engaging in outreach programs to increase accessibility for those who are restrained by time, financial and distance issues.

<sup>62</sup> In her response to my research inquiry, Jennifer Radloff (2003) ranked male dominance and domestic obligations as two of the key factors that impede women's ability to access telecenters.

<sup>63</sup> In an email interview, Chris Morris (2003) of the CISR project in South Africa also noted that his organization often draws upon the network of women's groups in the country to help spread the word about the services offered by telecenters. This is an important strategy given the preference by women to deal with others like themselves.

A critical mass<sup>64</sup> of women users is also an important factor for sustaining the telecenter. By increasing the number of female employees, the likelihood of attracting more female users is greater. As both James and Chris Morris<sup>65</sup> note, an increase in the number of female workers at the telecenter helps to equalize the male-female user ratio. Respondents identified the creation of a safe and friendly learning environment for female users as a prerequisite for attracting women to the telecenter.

### *Mozambique*

Recognizing the need to extend the info-communications network beyond Maputo, Mozambique's capital city, the IDRC funded and helped implement telecenters in the Manhica and Namaacha provinces. According to a recent IDRC evaluation of these two rural and peri-urban telecenters,<sup>66</sup> women constitute only 35 percent of the users (Rathgeber 2002). According to a survey conducted by Rathgeber, only 15 percent of female users, as compared to 21 percent of male users, had ever used a computer. These findings are not unique to Mozambique. It is apparent that more women need to become involved in the diffusion of engendered telecenters. Reinforcing these findings, Polly Gaster (2003), head the Eduardo Mondlane University's Centre of Information, has found that young males are the main users of the two telecenters. This finding is not surprising, given that these telecenters initially targeted younger users.<sup>67</sup>

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<sup>64</sup> Rogers (1995) defined critical mass as "the point at which enough individuals have adopted an innovation so that the innovation's further rate of adoption becomes self-sustaining." See pages 331-330 for further information.

<sup>65</sup> Both interviewees were contacted via email. See the Appendix for their full responses.

<sup>66</sup> Both telecenters are about 70 kilometers outside of the Maputo. Combined the telecenters support over 161,000 people.

<sup>67</sup> As Gaster (2003) pointed out, younger users are more likely to be early adopters of new technologies, thus more able to indirectly bring the benefits of ICTs to their families and communities. Given that more boys have access to educational opportunities, coupled with the fact that family obligations restrict girls' access to telecenters, higher usage rates among boys is not surprising.

To address the discrepancy between male and female accessibility to ICTs, telecenter managers have launched specific strategies targeted at female users. For instance, by cooperating with the Forum Mulher,<sup>68</sup> a consortium of Mozambican institutions focused on facilitating information exchanges among women, training courses have been implemented to promote email communications among female users (Gaster 2003). These types of women-friendly programs are essential for generating a critical mass, and ensuring the sustainability of the telecenters (Benjamin 2001).

### *Nigeria*

Despite the transition from military to civilian rule in 1999, Nigeria continues to face many growing pains. This is especially true for females who have tried to take advantage of the democratic reforms accompanying the new political framework. For instance, in some Muslim-dominated regions women are still not allowed to seek medical and reproductive care without first getting permission from their husbands (EngenderHealth 2003). Deeply embedded cultural norms, coupled with low levels of female literacy, have made it difficult for girls and women to realize the relative advantages of having access to ICTs.

Like in many other parts in Africa, telecenters have become an important mechanism for extending info-communication resources to disadvantaged communities. The Bayanloco Community Learning Center (BCLC), one of the most important telecenter projects in Nigeria, has played a critical role in educating women about basic healthcare-related topics. Kazahka Comfort, the General Secretary of Fantsuam Foundation,<sup>69</sup> pointed out that the BCLC has provided her a forum by which to educate girls and women about healthcare and

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<sup>68</sup> For further information on the Forum Mulher visit:  
[http://www.hivos.nl/nederlands/partners/zoeken/partner/index.php?org\\_nummer=MZ020](http://www.hivos.nl/nederlands/partners/zoeken/partner/index.php?org_nummer=MZ020).

reproductive options available to them.<sup>70</sup> Despite the benefits that BCLC has brought to community members, women are still outnumbered almost four-to-one (Comfort 2003).

Bukky Faseru,<sup>71</sup> manager of staff training and development for the Ibadan-based telecenter operated by Skannet, offered some insights as to why fewer women visit telecenters. Some of the reasons highlighted by Mrs. Faseru (2003) include:

- ❑ The lack of technical training available to women
- ❑ Women's preference for library rather than Internet research
- ❑ The low priority women place on browsing the Internet
- ❑ Domestic, specifically childcare, responsibilities
- ❑ Male dominated environments

Mrs. Yinka Talabi (2002), ICT program manager for the BCLC, reinforced Faseru's feedback, noting that rural women are often too busy to engage in ICT skills development. Therefore, it is important that telecenters not only offer training services that are relevant to women's immediate needs (e.g. healthcare), but must also provide auxiliary services, such as child care.<sup>72</sup> However, according to Faseru, the telecenter in Ibadan neither offers any specific services nor engages in strategies to attract women users. Indeed, she said, "gender is not a consideration at all" (Faseru 2003).

### *Ghana*

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<sup>69</sup> Fantsuam Foundation is an umbrella organization that helps to facilitate communication and information sharing between women clans in rural Nigeria. For further information visit: <http://www.fantsuam.com/>.

<sup>70</sup> For further information visit: [www.fantsuam.com/healthpro.htm](http://www.fantsuam.com/healthpro.htm)

<sup>71</sup> Feedback gathered from Mrs. Faseru was gathered from email interviews.

<sup>72</sup> Kazanka Comfort (2003) also pointed out that domestic duties together with the lack of value-added facilities (e.g. nurseries) are two key disincentives for "extremely busy rural women."

While there are multiple players involved in the telecenter movement in Ghana, NGOs, in tandem with USAID and the Academy for Educational Development, have taken a leading role in extending the global info-communications network to rural communities. One of the key differentiators of telecenter projects in Ghana is the importance that NGOs, which have a fairly good pulse of communities' information needs, place on local level input.

By bringing an understanding of and appreciation for grassroots social issues, NGOs help ensure that gender differences are taken into consideration.<sup>73</sup> For instance, in her papers on Ghanaian community telecenters, Mary Fontaine (1999/2000) noted that special times are allocated to provide access to women groups, *inter alia*. Fontaine found that groups taking advantage of these special time allotments would also receive a customized information packet. While it is difficult to directly correlate this level of detail to the involvement of NGOs, it is apparent they help to ensure women's needs are a key priority.

Despite the attention to local level needs, access to technologies is still dominated by males. Elizabeth Amponsah of the Center for the Development of People (CEDEP)<sup>74</sup> reinforced this notion, pointing out that the male-to-female access ratio is five to two in the Kumasi, Ghana-based telecenter. Amponsah (2003) suggested that the Ghanaian culture perpetuates the belief that technology is for men. She went on to point out that "most women in Ghana are not computer literate," thus relegating them to passive observers as men fulfill their electronic communication needs for them. For instance, some women have men send emails on their behalf while they observe (Amponsah 2003).

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<sup>73</sup> For further information on the NGO/international organization consortium spearheading the telecenter movement in Ghana visit: <http://ict.aed.org/infocenter/pdfs/ghana.pdf>.

<sup>74</sup> CEDEP is a gender-focused NGO with approximately 20 years of experience in social development in Ghana.

Even in Ghana's capital city, Accra, access to telecenters tends to be dominated by men. For instance, a survey conducted in April 2002 revealed that out of 100 users, 80 percent were men (BusyInternet 2002). Estelle Akofio-Sowah (2003), managing director of the Accra telecenter, cited the lack of time and family obligations as two key impediments facing women – a theme common throughout Africa. Although gender differences were not a major consideration in the design of the telecenter, Akofio-Sowah indicated that there are an equal number of men and women on the management team, she being one of the highest-ranking females.

While strategies, such as discounting telecenter services and hosting women's only weeks, gender parity in access to ICTs remains elusive. One strategy that has had mixed results depending on geographic location is training programs specifically for women. For instance, training for women in the Kumasi was very successful, while Internet training workshops in Accra were not well received by female users (Amponsah 2003, Akofio-Sowah 2003).<sup>75</sup> Although the participatory approach used by NGOs has helped increase access to ICTs for women, "it would really take a national campaign to educate women on the benefits of the Internet" (Akofio-Sowah 2003).

### *Mali*

Embedded gender roles have led to stereotypes in the way in which communities perceive technologies. Peter Benjamin (2003) of the Association for Progressive Communications (APC) pointed out that urban women and men perceive access to ICTs much

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<sup>75</sup> Amponsah (2003) mentioned that over 250 women attended a week-long ICT training seminar in Kumasi. Alternatively, Akofio-Sowah (2003) pointed out that women did not respond positively to Internet training workshops designed for female users offered at the Accra-based training center. She noted that an equal number of men and women attend the telecenter's regular Internet training programs.

differently than their rural counterparts. He observed that the majority of urban telecenters users are young men, while young women are more frequent visitors to those in rural areas. Moreover, he noted that urban users tend to be more technical, and their rural counterparts' association to ICTs is more clerical in scope (Benjamin 2003). Reinforcing Benjamin's observation is the fact that of the nine employees at the Timbuktu telecenter, the two women employees perform mostly administrative functions.

In a five-day study, Birama Diallo, the Timbuktu telecenter coordinator, uncovered some interesting findings about women's accessibility. The study, which pooled 52 people, of which only five were female, found that women represented a mere two percent of the monthly users between April 1999 to February 2001 (Diallo 2003). By breaking the user community into groups (e.g. artisans), the study found that women represented 29 percent of the 'anonymous user' group.<sup>76</sup>

Women continue to be one of the largest marginalized groups, despite the fact that the Coordination des Associations Feminine (CAFO) is one of the largest organizational users. Although women's usage of the telecenter remains low, Diallo's study suggests that the Timbuktu telecenter has helped to demystify technologies and improve awareness among women users. For instance, one strategy employed by the telecenter is to include photos of women on the front page of outreach and marketing materials (Diallo 2003). Additionally, through continuous engagement of NGOs and local opinion leaders, the key channels through which women learn about telecenter services, female access rates are likely to improve.

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<sup>76</sup> Anonymous users are classified as those who are not formally associated with a specific organization or industry segment. An interesting finding uncovered by Diallo is the fact that of the five women respondents to the study, four of them were anonymous users. Not only is the low number of female users disheartening, but this finding underscores the dire need to get more women involved in empowering organizations (e.g. CAFO) and create more sustainable economic opportunities for females.

## *Ethiopia*

As mentioned above, the first telecenter was launched in Ethiopia in 2000. In 2002, the British Council together with domestic organizations helped establish two more telecenters in Debre Berhan and Aksum. The British Council is currently planning the creation of another telecenter in Gondar, a remote village about 630 kilometers from the capital city Addis Ababa.

Despite the diffusion of telecenters in the country, in most cases more men than women access them. Low female literacy levels and repressive socio-cultural contexts hinder women's access, and the fact that gender was not a major concern during the design phase partially explains the female-male discrepancy in access. Of the targeted user groups,<sup>77</sup> which include civil servants and local government officials, the distribution of women in these groups is much less than men (Chekol 2003). According to Abebe Chekol (2003), a telecenter project manager for the Ethiopian British Council, women are a key target group, and the Council intends to incorporate the gender dimension in future projects.

Realizing that women are an important user community and vital to the long-term sustainability of telecenters, telecenter managers in Ethiopia have launched strategies to attract female users. For instance, some telecenters offer CD-ROM resources and services specifically designed for female users.<sup>78</sup> By increasing the availability of specific training opportunities targeted at female users and working more closely with women's groups, more women are likely to visit the telecenters (Chekol 2003).

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<sup>77</sup> For further information on targeted user groups visit:  
<http://www.telecom.net.et/~wolisso/users1.html>.

<sup>78</sup> Chekol (2003) mentioned that telecenters offers access CD-ROM services on issues relevant to women, including some relating irrigation and agriculture.

## *Lesotho*

An enclave in Southern Africa, Lesotho offers a unique environment in which to diffuse engendered telecenters. Lesotho is unique in that the majority of its population is female, of which 93 percent are literate (CIA 2002). Given that they comprise a literate majority, women, in theory, should also make up a majority of users at telecenters. Indeed, responses from Lesotho indicate that more women use telecenters than men. For instance, in the remote village of Kgautswane women comprise 65 percent of the user community each week (Masinga 2003).

Available research indicates that women in rural areas are particularly knowledgeable about how telecenters can improve their lives. Clara Masinga (2003), the manager of the Kgautswane telecenter, said, “in rural areas women understand things better than men.” She also pointed out that women in remote communities are active in a variety of business development initiatives. Given that telecenter managers are frequently women,<sup>79</sup> their exposure and access to information resources allows them to expand their knowledge of business processes, *inter alia*.

While Lesotho’s female dominated population helps explain why more women than men access telecenters, resource and service offerings designed to meet the information needs of women also play a key role. From community building to home-based care services and gardening, the Kgautswane telecenter works with Technikon South Africa offer training courses to help improve the lives of the villagers it serves. To attract more women users,

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<sup>79</sup> In an email interview, Paul West (2003) indicated that women managers are commonplace in Lesotho. See the Appendix for further information on his responses.

Masinga employs strategies designed to expand women's skill sets, while also helping them preserve their unique cultural heritage.<sup>80</sup>

Although just a small landlocked country with a population of a little over two million, Lesotho's burgeoning knowledge-based culture lends credence to the argument that women are not only capable of driving Africa's ascension into the information age, but are also a vital component to that process.

### *Senegal*

Numbering approximately 9,000, Senegal has the most telecenters of any African country (Benjamin 2000). The success of telecenters in Senegal can be attributed to the commitment made by Sonatel, the national telecommunications operator, which views telecenters as an alternative to public pay phones. Although 62 percent of the country's telecenters are located in Dakar, the capital city, over a third have been established in rural areas. Surprisingly, 20 percent of existing telecenters are owned and operated by women.<sup>81</sup> Unlike most African countries, available evidence suggests that more women use telecenters in the cities, while males have higher usage rates in rural areas.

Like in Lesotho, women comprise more than half of Senegal's population. However, unlike its southern African counterpart, the female literacy rate is significantly lower than males. In 2001, the female literacy rate was around 29 percent, while the literacy rate for males was above 50 percent (CIA 2002). Despite low literacy levels, the fact that women run

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<sup>80</sup> Masinga (2003) noted that she offers courses to teach women how to cook traditional food, learn dances passed down from past generations and how to make traditional clothes. See the Appendix for the full responses.

approximately 20 percent of Senegalese telecenters suggests that women have come to realize the relative advantages of having access to telecenters.

Although it is apparent that many women have embraced the telecenter concept, they still face many socio-cultural hurdles. For instance, feedback from Metissacana, the first cybercafe/telecenter in Dakar, indicates that cultural expectations of “women’s work” impede some women’s access the site as often as men. Michel Mavros (2003), the director of Metissacana, said, “because the telecenter is a public space, cultural norms sometimes impede women’s ability to use the Internet services offered by the center.”

When women visit Metissacana, their ability to utilize the info-communication services is on par with their male counterparts. He said, “when a woman is using the telecenter she is just as active and clever with the technology tools as men” (Mavros 2003). Although gender differences have not been a major barrier to women’s accessibility, Mavros suggested that additional online teleservices would make it possible for organizations and civic associations to more easily and affordably train women to use the Internet to improve their lives.<sup>82</sup>

## **Summary**

What do these examples tell us about the diffusion of telecenters in Africa? One key finding from the examples highlighted above is that women’s accessibility to telecenters is significantly lower than men’s. When asked whether there is gender parity in terms of access and use of telecenters, all 12 respondents who provided feedback indicated that men

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<sup>81</sup> See <http://www.communitysa.org.za/africaict/asenegal.htm> for further information on telecenters in Senegal.

outnumber women. Despite the fact that 11 of the 16 total respondents indicated that gender was a consideration in designing their telecenters,<sup>83</sup> it is apparent that many women's access continues to be stifled.

While cost and time constraints are two key impediments to increasing women's access to new technologies, feedback gathered for this study suggests that domestic obligations, literacy and socio-cultural factors are the biggest hurdles. Ten of the 16 respondents cited domestic obligations as the reason for low access levels among women, while literacy and socio-cultural factors each received seven responses.

The examples above also offer some insight into the types of services and strategies in which telecenters are engaging to attract more women users. For instance, the feedback indicates that services relating to content, education and training resources, and complementary services (e.g. child care and banking) help attract female users. From providing special times and rates to promoting telecenter services through women's groups to setting quotas for women in training programs, responses from the field demonstrate that gender has become an important priority for most African telecenters.

It is clear from the examples highlighted above that women must be included in the design and operation of African telecenters. Despite pre and post design efforts, women's information needs have not been met. Chris Bragg (2003) of the Infrastructure for All Project

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<sup>82</sup> Because gender-related issues have not posed a problem in terms of access to the services offered at Metissacana, Mavros (2003) pointed out that the gender dimension was not a major consideration when designing the site.

<sup>83</sup> Note: some of the respondents were involved in the same telecenter projects. For instance, four different individuals offered feedback about telecenters in Uganda – all of which indicated that the telecenters incorporated gender differences into the design. For further information see the full responses in the Appendix.

(IAP)<sup>84</sup> best summed up the most promising strategic vision for the future of telecenters in Africa: “Women are going to be key contributors to the success of our projects. Any unintended policy that prevents us from reaching 50 percent of our intended market (women) does not make much sense whichever way you look at it!”

The next chapter provides an analysis of the importance of diffusing engendered telecenters throughout Africa, and how greater diffusion of engendered telecenters can improve women’s lives. In the context of Roger’s (1995) diffusion model, it provides an outline of the key elements that can enhance women’s ability to become more proactive players in the innovation decision process. It also offers some strategic recommendations for facilitating the diffusion of engendered telecenters in Africa.

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<sup>84</sup> The Infrastructure for All Project, is a pan-African organization that is in the process of launching telecenters throughout Africa, including in Ethiopia, Angola, and the Democratic Republic of Congo.

## 5.0 The Way Forward

“Gender analysis is increasingly reduced to technical and sectoral matters and is not being used as a political tool for women’s emancipation and empowerment.”  
*Zo Randriamaro, Gender and Economic Reforms in Africa*

### Introduction

As mentioned in chapter two, diffusion is a complex, iterative process that is time intensive, involving a variety of socio-cultural, economic and political components. Although this thesis has provided a theoretical framework for understanding how engendered telecenters might best be diffused in African societies, the newness of telecenters – especially those catering to women’s needs – makes it difficult to accurately measure the effect that increased access can have on female users.

The diffusion of engendered telecenters involves multiple stakeholders. Thus, the diffusion process must simultaneously focus on both the societal and individual impacts that telecenters have within a given community. A gender perspective – that is to say, the potential impact of telecenters on women – has been largely neglected. Unless greater attention is given to the gender dimension, telecenters and information-based technologies will continue to be underutilized by women. The prospects for development will be impaired as a result.

Adopting an engendered design for telecenters has the potential to enhance the diffusion of information and knowledge in marginalized areas. However, the potential role for women in this process is somewhat uncertain, because there are still too many untested assumptions about how males and females use these new technologies (Rathgeber 2000).<sup>85</sup>

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<sup>85</sup> Rathgeber (2002) found that research has demonstrated that girls/boys do not approach or have the same expectations when it comes to technologies.

While acknowledging that men and women have different information needs, no one has yet found an effective way to incorporate women's needs into telecenter designs (Rathgeber 2002).<sup>86</sup> Although an increasing number of African women use telecenters, much more must be done to enhance gender awareness in designing ICT-centric programs.

By looking at Rogers' four elements of diffusion – the innovation, communication channels, time considerations, and the social system – and comparing it to the present situation in Africa, we can identify what still needs to be done to encourage greater female access and use of telecenters. Based on this analysis, the chapter highlights some key problems impeding women's access to telecenters, and some potential strategies for improving the situation.

### **5.1 Innovations and Uncertainty**

As Rogers pointed out, innovations entail considerable uncertainties, especially when they are incompatible with existing social structures. Moreover, new ideas and technologies force people to question how an innovation might impact their lives. For instance, engendered telecenters may prompt both men and women to question how the two sexes interact in public spaces. Whether innovations are perceived favorably in a given social system will help to determine their rates of adoption.

To promote adoption, therefore, requires that information about the innovation be diffused along with the innovation itself. Moreover, if a special user group is targeted – such as women – this information must be specifically tailored to that group's needs and level of understanding. In this way, not only will the uncertainty associated with the innovation be reduced, at the same time, the relative advantages of adoption will be much more apparent.

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<sup>86</sup> Rathgeber (2002) found that women represent 29, 35 and 23 percent, of Internet users in Uganda,

Better informing women about the potential benefits of ICTs is important for successfully diffusing engendered telecenters. However, such information sharing strategies in Africa will be very difficult. As we have seen, men are usually the first not only to hear about technology, but also to use it. From the lack of female computer literacy in Ghana to time constraints in Uganda, evidence shows that women face many more restraints in terms of accessing telecenters than men throughout the continent. Thus, promoting the diffusion of engendered telecenters in Africa must be viewed first and foremost, as a broad communication campaign that targets women specifically.

Keeping in mind Rogers prerequisites for successful diffusion, we can see that such a communication campaign must be designed to cover a number of bases. First, it must emphasize the relative advantage of telecenters for women. Second, it needs to show how telecenters might be made compatible with existing social structures. Third, a communication campaign should provide an opportunity for women to test out telecenters. Fourth, it should work to simplify the technology, and make the understanding and use of it less complex. Finally, it should seek to make the results and benefits of increased access to ICTs more visible to potential female users. Moreover to be effective the campaign must be designed to employ the most appropriate communication channels, given the situation and task at hand. In the following discussion, each of these aspects is considered in turn.

### *Relative Advantage*

It is not enough for potential adopters to know about a technology; they must clearly understand its relative advantage. Rogers defines relative advantage as the “degree to which

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Mozambique and Mali, respectively.

an innovation is perceived as better than the idea it supersedes.” The relative advantage of an innovation can be measured in a variety of ways. However, in the case of telecenters, the relative advantages that needs to be clearly articulated and communicated is greater access to information and knowledge development resources.

Because most technology-centric development projects in Africa cater to male uses and users, it is hard for women to discover how telecenters might benefit them. One way of increasing women’s understanding of the relative advantages of having access to ICTs is to provide information that women need to carry out their day-to-day tasks. To offer a ‘relative’ advantage, this information must be reformatted in a way that appeals to women. Moreover, the innovation must be affordable for female users. African women might see a greater relative advantage to the extent that the technology is bundled with other benefits and activities. For example, ICTs might be provided in public places where women typically congregate, or it might be integrated with other daily activities, such as shopping or accessing health care. One strategy might be to promote women’s telecenter use at local markets and churches.

### *Compatibility*

Compatibility with existing socio-cultural environments is another important element in the diffusion process. For an innovation to be compatible in any given community, people must believe that it fits within their existing value structures; is consistent with past experiences; and is designed to meet the needs of potential adopters. Incompatibility will retard, and perhaps even derail, the diffusion of an innovation (Rogers 1995).

Incompatibility is a major obstacle to telecenters in Africa. Diffusion in rural areas, where tribal traditions and traditional social processes are deeply rooted, is especially problematic. In traditional African value systems, gender equality is hardly a priority. To the contrary, established gender roles tend to restrict women to certain positions such as domestic servants and caregivers. As Michel Mavros (2003) pointed out, women work in the home while men engage in activities outside. Moreover, women are considered to be subordinate to men. Describing women's position in Malian societies, Amadou Mahtar Ba (2002), President of All Africa Global Media, notes: "because of traditional values and Muslim beliefs, women are meant to stay at home." Moreover, in some cases, women are discouraged from frequenting areas where sexes are mixed. So long as women are constrained by these kinds of social mores, they are much less likely to take advantage of telecenters.

Promoting the diffusion of engendered telecenters in Africa will require some innovative approaches. One possibility is to develop two kinds of telecenters – one for women and one for men. If such telecenters were built in close proximity to one another, it might still be possible to share the costs of facilities and services. Moreover, if such an approach were successful in attracting female users, the greater overall use would reduce the telecenters' per unit costs.

Having two centers, or two separate areas within one center, would serve not only to reduce apprehension about sex roles; it would also make it much easier to customize each center for different roles and tasks. For example, childcare services could be offered in the women's area of a telecenter. Similarly, women-focused business services could also be provided. Alternatively, mobile telecenters that take computers and the Internet to women in marginalized areas have proved to be an effective strategy for overcoming problems of social

incompatibility.<sup>87</sup> Over the long run, the greater use of these centers, and the benefits derived there from, might serve to change the social structure in such a way that access and usage for women is reinforced.

Even when programs are designed specifically for women, many potential female users are reticent to seize the opportunity to learn how to use new technologies. In Ghana's capital city, for instance, women have not been receptive of basic Internet training workshops designed specifically for them (Akofio-Sowah 2003). Similarly, in Kumasi, a rural village in Ghana, women are often passive observers as men send emails for them (Amponsah 2003).

### *Complexity*

The complexity of an innovation also influences the rate at which it is diffused. Complexity refers to the degree to which an innovation is difficult to understand, or conversely, ease of use (Rogers 1995). In addition, complexity depends on what types of complementary inputs (e.g. education) from the user are required (Brodman 2002). Simple ideas and technologies are more rapidly diffused than their complex counterparts (Rogers 1995). Whereas simpler innovations – such as a change in farming techniques – may be easily diffused, others such as surfing the Internet and sending emails may be harder for some people. To diffuse complex innovations, potential users must develop a wide array of new skills.

Telecenters are complex innovations, so their diffusion in developing countries can be somewhat problematic. Because community residents have had little experience with

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<sup>87</sup> For example, Uganda Connect has used this strategy to extend the global info-communications network to disadvantaged areas. Such efforts allow women to access telecenter services closer to the home.

information-based technologies, telecenters and most of the info-communication resources housed in them (e.g. the Internet), are “foreign” to many African communities. Moreover, these technologies require complex skills that many local residents lack. For instance, the low levels of science and technology training among women make it difficult for them to use ICTs. While making calls over a wireless phone is relatively straightforward, the difficulty of sending emails and surfing the Internet may be a major barrier. These barriers are likely to be particularly problematic for African women who – as already noted – have lower literacy rates than men.

Fortunately, today’s information technologies are highly flexible, so they can be easily customized to match the task at hand (e.g. female education). Moreover, because intelligence is located at the network’s outer edges, ICT components and applications are very portable, thus they can be easily unbundled from stationary facilities. Taking advantage of the flexible and mobile properties of ICTs, telecenters can be designed to extend the network with interfaces and applications that fit local contexts. Given today’s technology, much more can be done to make telecenters more “user friendly” and simpler, especially for women. Educational efforts to heighten women’s technical skills would be a core requirement.

### *Trialability*

The ability to experiment with an innovation is the fourth factor determining the diffusion of an innovation. As Rogers (1995) noted, innovations that can be piloted on a limited basis generally have faster adoption rates. Because the ability to learn by doing reduces many uncertainties and enhances the skill level of many potential user groups, trialability of new ideas and technologies is very important.

As we have seen, many Africans have had considerable experience with telecenters. However, the opportunity for women to try ICTs in telecenters is significantly lower than males. Notwithstanding special efforts to attract women (i.e. providing childcare services) women's ability to access and use telecenters continues to be restricted.

To increase women's chances to experiment with ICTs, telecenters might either be brought to women, or be located in places where women congregate. As noted before, telecenters might be made available on a mobile basis, or located in schools or other familiar places. Uganda Connect, for example, uses wireless connections and computer-equipped trucks to reach out to disadvantaged communities. Such outreach strategies help to sensitize and educate female users to ICTs, thus increasing their ability to experiment.

### *Observability*

The easier it is for people to see the positive results of an innovation, the faster the innovation will likely be adopted. As Rogers (1995) points out, "visibility stimulates peer discussion of a new idea," thus strengthening the sustainability of the innovation. Because some innovations are more observable than others, they are likely to be adopted more quickly. For instance, publicly visible innovations such as cell phones have a faster adoption rate than personal home computers.

As we have seen in the cases of Ghana, South Africa, Lesotho and Uganda, many women are keen to learn how ICTs can improve their lives. For instance, in Kumasi, Ghana over 250 women attended a weeklong workshop focused on Internet access and computer usage (Amponsah 2003), and in Kgautswane, Lesotho women represent 65 percent of weekly

users (Masinga 2003).<sup>88</sup> Likewise, women have already shared their positive experiences with other African women, through programs such the Women's Voices Project in Kenya. Such efforts have not gone far enough, however, in providing localized opportunities for women to observe how others are using ICTs to enhance their lives.

One way of making these benefits more observable is to use the mass media. For example, radio and television broadcasters might develop programming that demonstrates how ICTs have empowered women. Such programming would be most effective if women were to assume the primary roles. At the interpersonal level, women's groups and community organizations might link their discussions, as well as demonstrate, to how day-to-day problems might be solved using the resources in telecenters.

## **5.2 Communication Channels**

Communication and information flows are the essence of the diffusion process. Indeed, as Rogers (1995) characterizes it, "The essence of the diffusion process is the information exchange through which one individual communicates a new idea to one or several others." Facilitated by change agents and opinion leaders,<sup>89</sup> information exchange helps mold perceptions about new ideas and technologies.

Communication channels can take many forms. The forms they take will depend, in part, on the nature of the social system and the actors involved. Relationships among individuals set the conditions for information and knowledge transfers (Rogers 1995). For

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<sup>88</sup> Additionally, feedback from Uganda suggests that women are "very enthusiastic" about using telecenters (Nakkazi 2003).

<sup>89</sup> Rogers (1995) indicated that the change agent-opinion leader relationship is complex. Change agents, who are often out of touch with local contexts, often overuse community opinion leaders. This overuse

example, if change agents have good relationships with local opinion leaders, the prospects for diffusion are greater.

As described in chapter two, information about innovations is disseminated by means of two channels – interpersonal relationships and mass communication. Mass media is the most effective channel for raising awareness of an innovation, but interpersonal channels are best for persuading individuals to adopt or reject it (Rogers 1995). Moreover, because diffusion is a social process, it mirrors the social structure. Thus, people's attitudes about innovations often reflect the opinions of those with whom they most frequently interact.

Social relationships may exhibit homophily or heterophily. Relationships are homophilous if those communicating exhibit similar socio-economic characteristics, such as education, religion, or status. In contrast, communications are heterophilous when they take place among actors with very different characteristics. While heterophilous communications is necessary for the introduction of new innovations, homophilous communications are required to promote their adoption (Rogers 1995). In this process, change agents, who are usually heterophilous actors, serve to introduce the innovation, while local opinion leaders, who have a more homophilous relationship with community members, are essential to promoting it. Throughout Africa, the heterophilous relationship that both change agents and opinion leaders have with women continues to stifle their access to telecenters.

### *Africa's Communication Systems*

From tribal drums to Sunday conversations at the market, Africa is replete with an array of communication channels. However, most of Africa lacks access to the most important

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leads to a depletion of the opinion leaders' ability to influence attitudes and behavior within their communities. For further information see Rogers' discussion on pages 26-28.

channel in the information age: the Internet. As previous examples show, those who have access to the Internet and its associated applications are mostly male. Couple this discrepancy with the male-dominated view of technology, and it is easy to see how women's access to new communication channels (e.g. email and instant messaging) offered by telecenters is limited.

While radio and television broadcasts are the main source of domestic and international information for most Africans, telecenters are increasingly becoming an important form of mass and interpersonal communications. For instance, as the Ghanaian-based Forum Mulher example demonstrates telecenters are helping women understand and use the new communication channels (i.e. email) provided by telecenters. In Uganda, telecenters have allowed women to create many community-related programs (e.g. crafts), thus serving as an important venue to increase the communication links between female users (Nakkazi 2003).<sup>90</sup>

The closeness of rural African communities suggests that interpersonal communication based on homophilous relationships play a critical role in the innovation decision process. The homophilous nature of most rural African communities can impede learning about innovations such as engendered telecenters. While some degree of sameness is critical to the diffusion process, a certain level of heterophily among actors must exist for diffusion to occur.<sup>91</sup> For engendered telecenters to take root in Africa, it is important that the homophilous-heterophilous gap between men and women be narrowed.

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<sup>90</sup> Secretary General of Uganda's National Commission for UNESCO, Anastasia Nakkazi (2003) pointed out that many women participate in telecenter programs, noting that the telecenter often serves as a catalyst for new women-friendly civic initiatives.

<sup>91</sup> Rogers (1995) outlined a four elements of the communication process: 1) an innovation, 2) an individual familiar with the innovation, 3) another individual unfamiliar with the innovation, 4) a communication link between the two individuals. See page 18 for further information.

Because men are most often the early adopters, they can help close this gap by promoting women's access to telecenters. Moreover, men are often the opinion leaders. As such, they can play a critical role in ensuring that women's needs are adequately communicated to external change agents involved in the diffusion process. To play such a role, of course, men will need to be convinced of the merits of telecenter usage by women. For diffusion to take place under these circumstances, communication should flow first from the change agent to the male opinion leader (a heterophilous channel); from the male opinion leader to a closely related women (a semi-homophilous channel), and from there to other homophilous channels where women communicate among themselves.

*What needs to happen?*

The identification of local opinion leaders who understand and appreciate the information needs of female users, in tandem with guidance from external change agents, is crucial to increasing women's access to the info-communication resources that are necessary for participating in Africa's knowledge revolution. Fatimata Seye Sylla (2002) said, "who ever produces the information and disseminates it holds the power." One way to increase women's influence over the production and dissemination of information is to more aggressively engage women's groups and local civic organizations in telecenter awareness raising campaigns. For instance, special rates and times for women's groups should be implemented to attract more female users. This, in turn, might lead to greater interest and knowledge of new communication channels available at local telecenters.<sup>92</sup>

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<sup>92</sup> Feedback from both Ethiopia and Uganda indicates that working more closely with women's groups is a key strategy (Chekol 2003, Mayanja 2003).

While mass communications has an important role to play in the diffusion of innovations, it often perpetuates gender stereotypes that contribute to the women's isolation and marginalization.<sup>93</sup> However, women can learn about the relative advantages of having access to telecenters through targeted marketing via radio and television broadcasts and newspaper advertisements that promote telecenter-sponsored education and training programs. Moreover, telecenters could co-sponsor ongoing broadcasts to increase their visibility among potential female users. The key, as Janice Brodman (2002) suggests, is to make the information about telecenters and their services easily accessible and relevant to the daily lives of women.

Telecenters must also identify ways to tap into the interpersonal linkages among rural African women. Given that women feel more comfortable working and conversing with other women, telecenters must provide an environment that strengthens the interpersonal communication channels among female users. Hiring more women as managers and trainers has proved an effective strategy for achieving this goal. Because information exchanges among women occur mostly at an interpersonal level (e.g. peer discussions), another strategy is to enlist local opinion leaders close to the women they seek to influence as promoters of how improved access to ICTs have benefited women in the community.

As noted above, men must play a greater role in promoting the diffusion of engendered telecenters. Having greater access to telecenters, men can serve as an important channel through which women can learn about the benefits of ICTs. However, enlisting men as evangelists requires an ideological shift in how they view women's roles in African communities. One way to facilitate this shift is to assure that improved women's access

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<sup>93</sup> See [http://www.wacc.org.uk/our\\_work/womens\\_programme/cape\\_town\\_conference.html](http://www.wacc.org.uk/our_work/womens_programme/cape_town_conference.html) for further

promotes system-level benefits. For example, advertisements can showcase how improving women's knowledge about farming or family planning techniques will benefit the overall community.

### **5.3 Time Considerations**

The third key variable in the diffusion process is the time dimension. This variable is comprised of three interrelated elements: the decision process to adopt or reject the innovation, the innovativeness of change agents, and the rate of adoption (Rogers 1995).

Rogers (1995) identified five key steps in the innovation decision process: knowledge, persuasion, decision, implementation, and confirmation of decision to adopt or reject.

Throughout this information-gathering process, decisions are made about innovations at both an individual and system level, the latter being more complicated because of the number of individuals involved.<sup>94</sup> Decisions made at both levels dictate the rate of adoption.

Likewise, Rogers identifies five "ideal" types of users according to their innovativeness. In order of innovativeness, these are: 1) the innovators, 2) the early adopters, 3) the early majority, 4) the late majority, and 5) the laggards. According to Rogers, another factor affecting the rate of adoption is the level of innovativeness of the agents involved (Rogers 1995). The decisions that these actors make about new innovations are to some extent socially constructed: they reflect the complex interaction among perceptions, beliefs, values and embedded norms. Thus, we might expect to find that the rate of adoption will be greater where societies place special value on innovation and innovativeness.

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information.

<sup>94</sup> See Rogers (1995) page 22.

### *Operating in African time*

In Africa, like most of the developing world, socio-cultural norms, traditional beliefs and male-dominated perceptions of technologies have made it difficult for women to assume innovative roles. In addition to the problems associated with social norms and customs, women are limited in their ability to access telecenters. Their domestic roles, and the structural dynamics that exist between men and women's time, greatly constrain the time available to them to undertake new and untried activities (Mayanja 2003, Gaster 2003). Couple these impediments with low female literacy levels, and it is easy to see why women in Africa are among the telecenter "laggards." Even those women who do have the luxury of occasionally visiting the telecenter cannot sustain daily or lengthy visits (Mayanja 2003).

Being a technology laggard is not a problem limited to women; all of Africa falls into the laggard category.<sup>95</sup> This problem stems not only from inadequate telecommunications infrastructure,<sup>96</sup> but also from the fact that most Africans – especially those in rural areas – lack access to the requisite knowledge development resources to become innovators. As this thesis has argued, enhancing women's knowledge of and ability to use ICTs is a core component of diffusing engendered telecenters. As more women gain access to ICTs, they will be better equipped to mitigate the repressive time constraints placed on them, thus allowing them to exert greater control over the diffusion process.

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<sup>95</sup> This is not to say that all Africans are laggards, as there have been many individuals and countries that have been very innovative in their efforts to use new technologies to propel Africa into the information age. The Kenyan-based start up, Africa Online, is a prime example of the innovativeness of Africans. For further information visit <http://www.africaonline.com>.

<sup>96</sup> Even today, just 7.3 percent of rural South African homes have a phone compared to 85.6 percent of white minority urban households (Bridges.org 2001). This statistic underscores the importance of building out the network to disadvantaged areas.

*What needs to happen?*

To increase women's accessibility to telecenters and ensure that their needs are considered, women must play a more prominent role in the innovation diffusion process. As we have seen, women's needs and viewpoints are inadequately represented throughout the process. To address this discrepancy, project coordinators must conduct gender analyses prior to establishing up telecenters in African communities. For instance, if change agents took into account women's childcare responsibilities, they would realize childcare services are an important component to attracting female users. Such visibility would increase the likelihood that services important to women are provided by telecenters. By incorporating the gender dimension in the design stage, telecenters could provide more appropriate incentives to attract female users, thereby increasing their adoption rates in underserved areas.

In Africa, women are essentially an untapped resource in the area of ICT diffusion. Despite their marginalization, women's knowledge of indigenous systems holds tremendous promise for helping Africa transition into an information society. If Africa is to take advantage of these assets, steps must be taken to overcome time constraints, and other barriers that limit women's access to telecenters. One strategy mentioned previously is to provide mobile services in places where women congregate.

Women's groups and community organizations can also serve as effective opinion leaders to help publicize the benefits telecenters afford women.<sup>97</sup> Moreover, local opinion leaders (e.g. participants in Kenya's Women's Voices Project) and change agents – such as telecenter managers – should work together to improve access for women. To this end, for example, telecenter managers might work with women's groups to determine what additional

services they could offer – such as identifying volunteer domestic help – that would directly appeal to potential female users.

Until telecenters make gender differences a priority, women are unlikely to be innovators or early adopters. Because individual beliefs and norms dictate the diffusion process, changes in the social system will be essential for increasing women's accessibility.

#### **5.4 Social System**

Rogers (1995) defined the social system as “a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal.” As is the case in the innovation decision process, the social system sets the parameters of the diffusion process. A system's structure determines the essential channels of communication, and the way in which information is spread (Rogers 1995).<sup>98</sup> Depending on its structure, the social system can reduce or exacerbate uncertainties associated with technology diffusion. For example, informal and formal constraints<sup>99</sup> (e.g. gender roles and time) determine how and with whom people interact, and hence the pattern of diffusion. Understanding diffusion is predicated on understanding the social system.<sup>100</sup>

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<sup>97</sup> Aida Opoku-Mensah (2001) found that the strength of NGOs, specifically women organizations, has become a major force for change in Africa.

<sup>98</sup> For instance, the bureaucratic structure of government agencies creates a hierarchical framework that allows some level of predictability (Rogers 1995, 24).

<sup>99</sup> In *Institutions, Institutional Change and Performance* (1990), Douglass North defined formal constraints as those codified political and economic rules and contracts. In terms of informal constraints, North said, “they come from socially transmitted information and are a part of the heritage that we call culture.”

<sup>100</sup> See Rogers' (1995) discussion of social structures and diffusion on pages 24-25.

Rogers (1995) pointed out that *system effects*,<sup>101</sup> which are determined by the relationships inherent in a social system, predict the behavior of individual actors. System effects are manifest in the power that change agents and opinion leaders wield in the innovation decision process. Guided by social norms, exogenous and endogenous innovation influencers act in tandem to communicate information about new ideas and technologies within the system. Depending on the organization of social norms, the system effects can either facilitate or stifle the diffusion process (Rogers 1995).

### *African Social Systems*

In Africa, the structure of social systems, like perceptions of ICTs, are slanted in favor of males. Burdened by centuries-old cultural norms, African women, despite their empowered pre-colonial social status, operate in a system that values them less than men. Given that socio-cultural norms dictate the way in which new ideas and technologies are developed and diffused, it is no surprise that women's views have been a secondary consideration in the design and diffusion of telecenters.

Feedback presented in the last chapter reinforces the notion that African social systems are partial to the needs and advancement of males. For instance, socio-cultural barriers and domestic obligations, both of which are determined by system structures, were cited as two of key obstacles impeding women's access to telecenters. Despite efforts to attract female users (e.g. women's only times), the formal or informal structures of many African communities makes it difficult for women to realize the relative advantages of having access to ICTs.

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<sup>101</sup> Rogers (1995) defined system effects as "the influences of the structure and/or composition of a

Given the male dominated perceptions of technologies, coupled with the fact that gender is not a major consideration in most ICT-centric designs, women accessibility to telecenters is severely constricted. However, as the gender dimension is more tightly interwoven into telecenter designs, women's access to the ICTs will improve, thus increasing their ability to change the structure of African social systems in their favor.

While telecenter managers have launched a variety of women-centric outreach strategies (e.g. quotas for women in telecenter-sponsored training programs), changing the nature of African social systems requires an ideological shift that values gender equality. Such an ideological shift would not only improve women's opportunity to use ICTs as empowerment tools, but might also improve women's position in African societies by allowing them to be more productive social agents. As the managing director of the Accra telecenter, Estelle Akofio-Sowah (2003), pointed out, such a shift would necessitate a national, perhaps even a pan-African, campaign focused on how improved access could benefit all Africans.<sup>102</sup>

#### *What needs to happen?*

From technology design to policy development and community decision-making, a social system's structure determines the roles for men and women (UN 2002). Although incorporating the gender dimension into telecenter designs has increased women's accessibility rates, the male-dominated nature of African social systems continues to retard the diffusion of engendered telecenters. At the same time, however, engendering telecenters can

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system on the behavior of the members of the system.”

<sup>102</sup> See Akofio-Sowah (2003) response in Appendix A for further information.

also foster the diffusion of ICTs in Africa. As Eva Rathgeber (2002) pointed out, nobody has figured out how best to address this “catch 22” quandary.

As we have seen, socio-cultural norms often relegate women to domestic work, while activities outside the home are reserved for men. Only by easing the domestic responsibilities placed on women can they engage in activities outside the home, and thus take advantage of the services offered by telecenters. As mentioned previously, telecenters that mobilize their resources make it more convenient for potential female users. By bringing the global network closer to women, mobile telecenters can be used to help overcome many of the barriers that hold women back.

However, mobilizing telecenters cannot sufficiently address the deeply embedded values, beliefs and cultural norms that impede women’s access to ICTs. One potential way of altering repressive environments is to increase the number of women opinion leaders. Beginning at the grassroots level, women’s groups and civic organizations could recruit female telecenter managers to serve as role models for other African women. These female role models could also lead an awareness raising campaign educate Africans about the role that women can play in building an information society. By more proactively engaging women, all stakeholders are more likely to become vested in the success of the telecenter, thus leading to innumerable community benefits (UN 2002).

Telecenters can also do more to publicize the potential societal benefits to be gained when women’s access to ICTs is increased. As Rogers theorizes, increased visibility of the results gives rise to faster adoption rates. A greater appreciation of the gender dimension can help change the socially constructed and repressive constraints placed on women, thereby accelerating adoption. Through social marketing, advertising, and grassroots outreach,

telecenters can change the system effects in a way that is more conducive to female users. The more females that become opinion leaders within African communities, the faster social systems will change, thus allowing more women to take advantage of having access to telecenters.

### **Summary**

The diffusion of engendered telecenters presents many potential benefits and consequences for African communities. Some potential benefits accompanying engendered telecenters include increased access to ICTs for women, the unleashing a new cadre of innovators, and significant changes in the male-female social dynamic. Lack of increased access for women could have detrimental effects not only on the diffusion process, but also on the ability of Africa to enter the information age.

By placing the diffusion of engendered telecenters in the context of Rogers' diffusion model, we can see that much more needs to be done. Above all, it is necessary to: 1) help women realize the relative advantages of having access to telecenters, 2) open new channels of communication and information sharing among potential female users, 3) reduce time constraints placed on women by domestic obligations, and 4) make African social systems more gender-aware.

## **Conclusion: Components of Success**

“We have no choice but to recognize that the future of the planet, to a great extent, depends on women.”

*-Rachel Solange Mienje Momo, IDRC 2000*

The appeal of telecenters for development stems from their ability to house an array of technologies and public services in one location. These synergies offer development agents, both endogenous and exogenous, a convenient way to diffuse information and knowledge resources to high cost, underserved areas. By extending the network to rural and peri-urban areas, telecenters also make it easier for historically disadvantaged groups to participate in and contribute to the evolution of Africa’s information society.

As this thesis has argued, women’s ability to participate and contribute to building an information society in Africa has been limited to date. Despite the fact that greater attention is being given to the gender dimension, women’s accessibility to telecenters continues to be restricted by a variety of socio-cultural factors. However, as highlighted in chapter four, a variety of strategies are now being employed to attract female users and help them overcome these barriers. From putting photos of women on the front of marketing materials in Mali to setting quotas for women in training programs in Uganda, efforts are being made to make telecenters more appealing to African women.

This thesis asked whether increased attention to the gender dimension has improved women’s access to innovations? In the case of telecenters in Africa, the short answer is yes. Regardless of the telecenter’s core purpose (i.e. commercial or development focused),<sup>103</sup> the

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<sup>103</sup> For further information on the differences between the commercial and development roles of telecenters in Africa, see Pieter Conradie’s (2001) article titled “Using Information and Communication technologies for development at centers in rural communities: lessons learned.” Specifically see pages 244-245.

creation of women-friendly environments *can* dramatically improve women's access to ICTs. However, increased attention to the gender dimension has not necessarily improved women's accessibility to telecenters. Given the dearth of research available on the role of gender in telecenter design, coupled with the infancy of telecenters in Africa, it is difficult to show that the incorporation of women's needs into telecenter designs positively correlates to improved accessibility for female users. The effect that engendered telecenters have had on female accessibility rates in Africa requires further exploration.

By exploring the relationship between gender, telecenters and women's accessibility in the context of the diffusion model, this thesis has highlighted some of the key variables that can help foster the diffusion of engendered telecenters in Africa. The theoretical framework developed by Rogers (1995) has proved a useful tool for identifying some of the core components for incorporating the gender dimension into the design and implementation of telecenters.

Placing the research question in each of Rogers's variables to the diffusion model offers a clearer understanding of the important role that gender plays in the innovation process; how mass and interpersonal communication channels influence the overall diffusion process through opinion leaders and change agents; how women's ability to drive the rate of adoption of telecenters has been stifled by repressive environments; and how the system effects, which are based on established relationship structures, can propel or retard the diffusion of engendered telecenters.

As we have seen, the way in which telecenters are designed and implemented determines women's accessibility. Based on what we know, we need to expand the concept of telecenters to include arrangements that are customized to meet women's needs. Left

unchanged, male dominated perceptions of telecenters, social environments that favor men over women, and entrenched gender stereotypes will continue to stifle the diffusion of engendered telecenters throughout the continent.

Although it is still too early to determine the long-term effects that the diffusion of telecenters will have on women specifically, and African communities more generally, the evidence presented here suggests that the diffusion and sustainability of telecenters is related to engenderment. The strategies described below suggest some key components that must be taken into account.

### *Gender analysis*

The movement toward engendered telecenters begins with an assessment of how men and women perceive and experience new technologies. Understanding these differences requires that project administrators undertake gender analyses prior to establishing telecenters in rural African communities. A gender analysis helps identify factors that explain the different ways that men and women view, access and use ICTs (Holmes 2000). As we have seen, inadequate attention to the gender dimension can lead to major systemic failures.

A gender analysis helps to identify the specific information and technology needs of women users,<sup>104</sup> which need to be incorporated into the core telecenter design. Moreover, an assessment of the reasons why women are not active users can help the designers of telecenters identify what gender factors must be taken into account. Addressing such factors at the outset will lead to greater usage, and thus greater sustainability. .

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<sup>104</sup> The World Resource Institute's "Lessons from the Field: ICTs and Women's Empowerment" report pointed out that more development practitioners are recognizing the important role that women must play in the diffusion of ICTs, thus are beginning to conduct gender analyses to address the barriers

### *Establish a women-friendly environment*

It is virtually impossible to find a development project without gender issues (Hafkin and Jorge 2002). To identify and address these issues in African contexts requires an understanding of the African socio-cultural systems. Only by matching project objectives to existing environments can the gender dimension be successfully incorporated into telecenters. This will require dramatic changes in how telecenters are constructed and perceived by potential users. In order to help women overcome restrictive gender expectations and domestic obligations, an understanding of and appreciation for how men and women interact in a given environment is critical.<sup>105</sup>

Creating an enabling environment where women can use ICTs to improve their lives should be the vision of all development-focused telecenter projects.<sup>106</sup> The social reconstruction of gender stereotypes, coupled with a move away from gender-neutral or male-centric views of technologies, are critical for increasing women's access to telecenters. Two key strategies to help facilitate this transition are reorganizing telecenters in ways that appeal to women (e.g. women only telecenters), and mobilizing info-communication resources (e.g. mobile telecenters) and distributing them places where women congregate. Making telecenter more convenient for female users should be a key priority for telecenter designers.<sup>107</sup>

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impeding women's access and use of new technologies. For further information visit:

[http://www.digitaldividend.org/knowledge\\_bank/knowledge\\_bank\\_05\\_women.htm](http://www.digitaldividend.org/knowledge_bank/knowledge_bank_05_women.htm)

<sup>105</sup> Janice Brodman (2002) pointed out that domestic and community responsibilities severely limits women's "disposable time." Specifically, she noted that these responsibilities make it extremely difficult for women to visit the telecenter, build skills, and use those skills for productive means.

<sup>106</sup> Rathgeber (2002) found that available evidence about telecenters in developing countries indicate that they are ineffective to helping women improve socio-economic and educational opportunities.

<sup>107</sup> Creating an enabling environment for women to use ICTs also requires getting gender issues on the national agenda, ensuring that public access points can be visited by females without the threat of violence or ridicule. For instance, rearranging the way that telecenters are organized and mobilizing resources are two simple strategies that can help increase women's access.

### *Engaging women*

Once designers have created an enabling environment, the next step is to create incentives to attract women to the telecenter. By recognizing women as important stakeholders in the design and implementation processes, they are more likely to become vested in the effort, thereby helping to ensure its success. Greater women involvement – either as consumers or managers – <sup>108</sup> will also increase their prospect to realize the advantages of having access to ICTs. A participatory approach allows women to develop complementary skills,<sup>109</sup> while simultaneously enhancing their knowledge about the processes of management and administration. Both types of skills are necessary for sustainability of telecenters in Africa.

Providing education and training can also make telecenters more attractive to women.<sup>110</sup> Science and technology are the foundations of the information society, so it is important to encourage girls and women to become involved in these fields.<sup>111</sup> However, as Harding and McGregor (2003) have pointed out, gender issues in science and technology are still a low priority on most national governments' agendas. In addition to providing women-focused educational opportunities, telecenters should also train women in skills relevant to their daily needs in rural African communities. For instance, the interactive CD-ROM training

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<sup>108</sup> As Anastasia Nakkasi (2003) pointed out that from the beginning women were engaged in the planning and implementation processes of telecenters. By giving them positions on the steering and core users' committee, Ugandan women have remained involved in the projects post-pilot phase.

<sup>109</sup> Complementary inputs, such as distant learning and training programs, increases women's ability to contribute to and participate in Africa's evolving knowledge society (Brodman 2002).

<sup>110</sup> For instance, in Ghana the Kumasi telecenter, in tandem with CEDEP, organized a women's week workshop for 30 women's groups to teach women how to use computers and the Internet. Over 250 women attended the week-long training workshop (Amponsah 2003).

programs in Uganda are an effective way to help women learn about new farming techniques. (Bugembe 2003).

As we have seen, women's groups and community organizations must also get more involved in promoting the system-level benefits associated with increasing women's access to ICTs. By helping to raise awareness, feminist groups and local organizations can help redefine the concept of telecenters to better suit women's needs. For instance, working closely with telecenters, these opinion leaders can help publicize the benefits that other women have derived from telecenters, while helping to reduce the male-dominated perceptions of ICTs. Such efforts would spur greater interest in telecenters among the female population.

#### *Ensuring Accessibility*

Another important step in diffusing engendered telecenters is to ensure that they are accessible to all user groups. Although cost and literacy issues are important, spatial and temporal factors must also be taken into account. In her research on women and telecenters, Janice Brodman (2002) found that physical accessibility is critical for improving women's access.<sup>112</sup>

While there are many ways of ensuring equal access for women, three strategies have proven more effective than others. First, insofar as women are severely constrained by socio-cultural norms to fully participate in the public sphere, some telecenters offer "women's only" timeslots. Utilizing existing infrastructure (e.g. schools and hospitals) is another popular strategy. Such an approach reduces the cost of access – an important consideration in

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<sup>112</sup> In her presentation on telecenters, Eva Rathgeber (2002) also noted that the physical site of the telecenter could serve as an impediment to women, who often find that socio-cultural constructs impede their ability to interact in a male-dominated system.

marginalized communities where poverty abounds. Using familiar infrastructures also serves to reduce the uncertainties associated with new technologies.

The use of mobile telecenters is also becoming a popular strategy for connecting Africa's disconnected communities to the global info-communication network. Combining the mobility of wireless communications (e.g. satellite phones) with the more traditional infrastructures provides easier access to telecenters.<sup>113</sup> Using these technologies in a familiar setting also helps to sensitize women to ICTs, while also providing for greater convenience.

### **Summary**

While these four factors do not exhaust the possibilities, they suggest the types of strategies necessary for greater diffusion to take place.<sup>114</sup> As we have seen, African telecenters have been designed and implemented without adequate consideration given to the needs of women. Specifically, these centers fail to take into account the socio-cultural hurdles that women face in becoming more technologically savvy (e.g. time constraints stemming from domestic obligations).

How might the widespread diffusion of engendered telecenters be achieved? Although there are no universal solutions, this thesis suggests that greater attention must be given to local level input. By working with NGOs, women's groups and indigenous civic organizations, project coordinators will become more in tune with the needs of the people they

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<sup>113</sup> Uganda Connect, a domestic NGO, uses vehicles donated by the Swiss Military, and computers and communication technologies provided by a variety of international stakeholders to introduce marginalized groups to the information age. For further information on Uganda Connect visit: [www.uconnect.org](http://www.uconnect.org).

<sup>114</sup> The phases outlined by Rogers (1995) include: 1) recognizing the need/problem, 2) research on how to address the need/problem, 3) development of initiatives to meet the need of targeted audience, 4) commercialization of an innovation, 5) diffusion and adoption, and 6) the consequences associated with the decision to adopt or reject an innovation. See page 133.

are designed to benefit. Grand generalizations and universal models for diffusing innovations are no longer applicable to today's interconnected global society (Mody 1985, Escobar 1995).

Telecenters must also become more flexible. Currently most telecenters are designed in a centralized fashion, which as we have seen is not conducive to improving women's access. A more decentralized and flexible telecenter model can help ensure that women's needs are taken into consideration. Moreover, by unbundling the elements that comprise telecenters, project administrators can move ICTs closer to underserved user groups. Such flexibility can help to redefine local level perceptions of new technologies, thus helping to make them more gender aware.

Although the findings are based on antidotal evidence, some important lessons can be gleaned from available information about telecenters in Africa. For example, it is apparent that even those telecenters that incorporate gender dimension into its design and operation have not yet realized an equal number of men and women users. There are many variables to account for this discrepancy. However, as we have seen, the socio-cultural environments in Africa, coupled with the deeply embedded gender expectations, are significant contributors. It is difficult to weigh the importance of any one variable, but taken together the lack of political, economic and social power significantly limits women's ability to utilize new technologies for advancement.

A more engendered approach to designing and diffusing telecenters is critical for increasing women's accessibility. From assessing the information needs of female users to reorganizing the way that telecenters are set up and providing services that appeal to women, project administrators must employ a variety of gender-specific strategies. Although efforts are already underway to make telecenters more women-friendly, much remains to be done to

overcome socio-cultural, economic and political barriers that restrict women's access. Until gender differences are more tightly woven into the design and operation of telecenters, their diffusion will continue to be limited, and the consequences for not including women in Africa's information revolution will be felt by future generations.

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## **Appendix: Feedback Responses**

As noted in chapter four, “The Current State of Play,” information about ongoing telecenter projects was gathered from a variety of empirical and first-hand resources. While the empirical research can be retrieved from the reference sections of each chapter, the feedback gathered from telecenter managers and development practitioners operating in Africa is included below. Please note that two separate methods for gathering research were used for this thesis: 1) survey format, and 2) email interviews. For the former, some surveys were completed in full, while others only partially. The email interviews appear as I received them, save for formatting changes.

### *Voices From the Field*

**Respondent: Bukky Faseru, Skannet**

**Country: Nigeria**

**Date: 19 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: No, there are more men than women.

Q: If fewer women than men use the center, why do you think that this is so?

A: a) Most women are not so technically inclined so most of them don't work on the computer. Some would prefer going to the Library to search for information than browse the Internet.

b) They are found more in the market and shopping malls than in telecentres. Browsing the Internet is not always on top of their priority list

c) Commuting can be a problem for women. they would prefer to stay at home or in their offices than go to a telecentre. Some woman have to go around with their kids and going to telecentres with children and sometimes groceries might not be convenient. They might see this a distraction to others in the telecentres.

d) The population of men in business and professional environment is more than the women population.

Q: What changes in the services you offer do you think might attract more women users?

A: a] if women are assured that they will be trained on how to use the computer when they get to the centres, they might be attracted the more.

b] Price discrimination: Lower the prices for women and you would find more of them in the centres.

c] Availability of a small nursery where they can drop their kids to play while they surf.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: No.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: No.

**Respondent: Kazanka Comfort, Fantsuam Foundation**

**Country: Nigeria**

**Date: 28 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: Attendance is male-dominated, almost 4:1

Q: If fewer women than men use the center, why do you think that this is so?

A: Domestic duties have priorities, opening hours not convenient, ICT seen as an elite and male-preserve, technophobia, not enough value-added facilities to attract and retain attention of extremely busy rural women, invariably less literate than men and therefore problem of language access

Q: What changes in the services offer by telecenters do you think might attract more women users?

A: More emphasis on audio-visuals (videos, audios) and relevant information packaged in local languages

Q: Do telecenters with which you are familiar offer any specific services designed to attract underrepresented segments of society?

A: Profit orientation (sustainability) makes this an unattractive option

Q: Are there any specific strategies that telecenters undertake or should undertake to encourage women's use of the telecenter?

A: We are the only rural-based NGO that promotes use of ICT in a largely semi-literate female population in our region. Increase in local content, provided in accessible format will add value to information and make it worth their while to use the centres. Urban telecentres have higher proportion of female users

Q: In terms of access to and use of the resources offered by the telecenter, did gender differences play a role in the telecenter's design?

A: Initially designed for women only but over-ran by men. We are back to the drawing boards to ensure we remain true to our mission

**Respondent: Elizabeth Amponsah, CEDEP, a non-governmental organization with 19 years of experience in working in Ghana**

**Country: Ghana**

**Date: 27 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: NO THE RATIO IS 5:2

Q: If fewer women than men use the center, why do you think that this is so?

A: MOST WOMEN IN GHANA ARE NOT COMPUTER LITERATE. I ALSO THINK OUR CULTURE MAKES WOMEN THINK TECHNOLOGY IS FOR MEN. THEY WOULD SIT BY THE MEN WHILE THEY SEND THEIR MAILS FOR THEM.

Q: What changes in the services you offer do you think might attract more women users?

A: GIVE AWAYS AT CERTAIN TIME OF THE YEAR BECAUSE MOST WOMEN CANNOT AFFORD TO PAY THE LITTLE MONEY WE CHARGE AND THIS IS A GREAT WORRY TO US. IF WE COULD GET SOME FUNDING TO TRAIN WOMEN IN COMPUTERS WE WOULD BE VERY GRATEFUL.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: YES WE HAVE A SPECIAL PARKAGE FOR SCHOOL CHILDREN AND TEACHERS (50% DISCOUNT) WE ALSO HAVE A SPECIAL CENTER FOR THE DISABLED.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: WE ORGANISED A WOMEN'S WEEK FOR 30 WOMEN GROUPS IN KUMASI TO LET OUR WOMEN HAVE FIRSHTHAND INFORMATION ABOUT COMPUTERS AND THE INTERNET AND HOW IT CAN IMPROVE THIER WAY OF LIFE. (OVER 250 women ATTENDED).

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: YES ,OUR OGRANISATION IS AN ADVOCATE FOR GENDER IUSSES IN GHANA. WE ENSURE THAT IN ANY TRAINING SESSION THERE IS A WOMAN.

**Respondent: Estelle Akofio-Sowah, Managing Director, BusyInternet Telecenter Accra, Ghana (capital city)**

**Country: Accra, Ghana**

**Date: 2 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: I have asked our customer service manager to email you some research we did on the customers that come to busy and what they use the internet for.

Q: If fewer women than men use the center, why do you think that this is so?

A: Women all across the world and definitely in Africa are busy looking after the family and working. as business people they also tend to be small scale businesses and therefore still have not integrated technology into their businesses

Q: What changes in the services you offer do you think might attract more women users?

A: Having programs for kids always bring in mummies too:-) it would really take a national campaign to educate women on the benefits of the internet. we do support a number of women's programs, providing them with meeting room space and internet access.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: Not specifically but seem to attract a large number of deaf people which makes me think we must be offering something that makes them feel really at ease. We have also trained our staff to be sensitive to peoples specific needs. elderly people who have never even touched a computer come here and get help from our assistants.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: Last year we did try running internet for beginners workshops specifically for women but found that they did not respond positively. Whereas our regular internet for beginners has an equal number of men and women coming.

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: I am not aware of any specific incorporation of gender differences into the design of busyinternet. However, in terms of employing staff we do not discriminate between men and women. We have an equal amount of men and women in the management team and as you may have realized I, the managing director, am a young lady:-)

**Respondent: Ms. Clara Masinga, Kgautswane Telecenter Manager**

**Country: Lesotho**

**Date: 3 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: Women and men are not equal in daily or weekly to use our telecentre. Weekly basis 65% women 35% men.

Q: If fewer women than men use the center, why do you think that this is so?

A: Fewer men use the telecentre, because at the rural areas women understand things better than men, and they are also active in any development of business.

Q: What changes in the services you offer do you think might attract more women users?

A: Services we offer make changes like the ICT Services, Village Bank, Retail Postal Agency, Library, Fancy, Candle and Juice making. They attract more women.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: The telecentre offers services attract underrepresented segments like the course or trainings from Technicon SA- florida, ie. Integrated Community Building Programme, Ecco Circle cultivation, Home Based Care Services, Poultry and gardens, etc.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: Strategies that I undertake to attract women, are as follows: Traditional food- to teach them how to cook. Tradition dances- many of the women are Christians, we teach the gospel choruses, Bible verses. To encourage women to sew and wear traditional clothes.

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design? N/A

**Respondent: Paul West, Commonwealth of Learning**

**Country: Lesotho**

**Date: 2 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter(s)?

A: Enquire locally.

Q: If fewer women than men use the center, why do you think that this is so?

A: If anything, especially in the case of Kgautswane, it's women using the centre; mostly teachers.

Q: What changes in the services offered by the telecenter do you think might attract more women users?

A: Resources that make sense to them – how to look after sick people (frequently terminal), teach literacy, how to apply for funding/loans, etc.

Q: Do the telecenters offer any specific services designed to attract underrepresented segments of society?

A: Their location and price of services does this.

Q: Are there any specific strategies that telecenters undertake or should undertake to encourage women's use of telecenters?

A: Run basic computer courses (e.g. how to use MS Word and print documents – typical uses are question papers for schools, minutes of meetings, letters)

Q: In terms of access to and use of the resources offered by the telecenter, were gender issues incorporated into the telecenter's design?

A: The managers are frequently women – this seems to be the best!

**Respondent: Abebe Chekol, British Council**

**Country: Ethiopia (Telecenters in Wolisso, Debre Berhan, Aksum. Planning one in Condar)**

**Date: 3 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: No exactly. In most cases more men than women use the services of the telecentre. However, our target audiences clearly indicate and encourage women. The target audiences include the following:

- \* Local government officials at the zonal level
- \* Experts involved in research and development activities in the area
- \* Civil servants in the town
- \* Secondary school students and teachers
- \* Post secondary school students and teachers
- \* Educated members of the community in the private sector
- \* Women and youth

Q: If fewer women than men use the center, why do you think that this is so?

A: The reason may include the level of literacy of women; the distribution of women in the target groups indicated above is far less than men; and the gender factors as it relates to cultural and other factors could also contribute to these.

Q: What changes in the services you offer do you think might attract more women users?

A: More training opportunities with special treatment of women and providing increased access to women group might attract more women users.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: Currently it is designed to offer general public access with a specific encouragement to women and the youth.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: The telecentre also combines access to CD-ROM resources and services. Although the resources currently are not that large, we also have a selection of CD-ROMs on Women issues including women and water resources, etc..

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: The original design didn't incorporate gender differences. However, this is one of the issues that we would like to incorporate in our strategies for development of telecentres.

**Respondent: Polly Gaster, Mozambique**

**Country: Mozambique**

**Date: 20 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: Fewer women.

Q: If fewer women than men use the center, why do you think that this is so?

A: The main users are young males - there are more young males than females in school and/or with some education. Plus women are busy supporting their families - in the field during the day, or whatever.

Q: What changes in the services offered by the telecenter do you think might attract more women users?

Provide services that are explicitly useful for income-generation/ employment.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: Yes - sponsored access e.g. subsidised or paid for courses, periods of Internet access, etc. Also wall newspapers, TV, library for free.

Q: Are there any specific strategies that the telecenter undertakes to encourage women's use of the telecenter?

A: Encourage basic training courses for women, eg project on cooperation with Forum Mulher. Provide info about relevant websites and sponsored Internet access. Promote communications via e-mail (eg Forum Mulher now has a mailing list for its bulletin and a website).

Q: In terms of access to and use of the resources offered by the telecenter, were gender differences incorporated into the telecenter's design?

A: Our primary concern was how to provide access for the poor, but obviously consciously aware that women constitute a large group among the poorest and marginalised. However, in the first instance we decided to target the young, on the grounds that they would be quicker adopters and indirectly they would be able to bring benefits of ICTs into their families.

**Respondent: Richard Bugembe, former manager of the Nakasake Telecenter**

**Country: Uganda**

**Date: 20 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: It is not an equal number. Depending on which application or service is sought e.g. computer applications training or the telephone, any number of women and men come to the MCT. The MCT has a user data base for library and other service users which is ore accurate. I suggest you pay a visit (that is if you are in Uganda) otherwise you will have to wait a while.

Q: If fewer women than men use the center, why do you think that this is so?

A: Of course this has not been established that fewer women use the MCT than men. For instance women have special programs such as the CD ROM on economic options for rural women in Africa which is very popular and highly used by women rather than men. Also, almost an equal number of women as men use the telephone and access information on modern farming methods. The difference in numbers could be on computer applications training and the trainees are mostly school children.

On the other hand, if there is a difference in usage between men and women, it could be explained by the busy daily schedules of rural women (who are household care givers, income earners, etc)

Q: What changes in the services you offer do you think might attract more women users?

A: Service targeted at the improvement of the livelihoods of household through income generation and health information may appeal to women more than men thereby increasing on their usage of the telecentre.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: Yes the telecentre provides information targeted at specific categories of the communities including marginalised/underrepresented. These may include youth out of school, women, elderly, etc. An example is the CD ROM on economic options for rural women that I mentioned earlier and indeginous knowledge management for the elderly and distance education for youth out of school.

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: The development of applications that are specific for women encourages their use of the telecentre (see info above). Also, mobilisation is done in such a manner as to induce usage by emphasising the benefit to particular users such as women.

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: The telecentre was designed in such a way as to respond to the different information and communication needs of different user groups. As such it incorporated gender differences. (See

the project design document from IDRC)

**Respondent: Florence Etta, Senior Program Officer, IDRC/ACACIA**

**Country: Uganda**

**Date: 1 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter(s) with which you were involved?

A: NO

Q: If fewer women than men use the center, why do you think that this is so?

A: So far,

Women do not have the time to come,

They do not find the services as useful as the men

They are not allowed to go

They have no money to use the services

Q: What changes in the services telecenters offer do you think might attract more women users?

A: Special rates and times for women,

Special spaces/TCs for women

Content that they have indicated they want

Content that they have generated

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: Free videos for children and any others who wish to view them it is like a free cinema service.

Q: Are there any specific strategies that telecenters undertake or should undertake to encourage women's use of the telecenter?

A: Yes Content creation which is women centred and allocation of time for women

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: Not from the very beginning. But later a CD-ROM was directly created with women by women for women and it has been very successful.

**Respondent: Meddie Mayanja, ICT Community Development Specialist, World Links for Development program World Bank Institute/SchoolNet Uganda**

**Country: Uganda**

**Date: 26 March 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: NO

Q: If fewer women than men use the center, why do you think that this is so?

A: Especially in Africa, Men and Women have different social roles as you may know. Most important, women are expected to be working in gardens or generally activities related to the same. This has changed a little bit in some communities but not in rural areas where most of the telecenters are located where the balance is still highly tilted towards men. Most times the services within the telecenters are not related to the home productive services interesting for women. Even then, those who can consume other services of general interest have a busy schedule and cannot sustain a daily/several hours visit. Nevertheless, this does not mean telecenters are less useful to women, but it has more to do with the structure of men's time Vs women schedules.

Q: What changes in the services you offer do you think might attract more women users?

A: Certainly women as well as men need services targetted to their interest - time when the services are available and content are key factor. Women targetted services may not be offered all the time through the day. Radio formats for presentation of information would be useful so that they do not have to get off their work to participate. thats taking the telecenter closer to the people. Women participation in the information creation and dissemination would be useful too.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: YES

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: Yes, working with women groups within the communities. Also declaring a quota for women when it comes to training programs.

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: YES.

**Respondent: Ms. Patricia Litho, Project Officer, Acacia Secretariat, Uganda national Council for Science and Technology (UNCST)**

**City/Country: Kampala, Uganda**

**Date: 20 February 2003**

Question 1: To what extent were gender differences in terms of male/female accessibility of resources a consideration when designing and implementing the telecenter? (Please circle the appropriate answer).

**VERY GREAT      IMPORTANT      NEUTRAL      SOMEWHAT      NONE**

Please provide a brief explanation as to why or why not:

At the time of setting up the above-mentioned telecentres women and youth were considered as the main targets. Women were targeted as a group that has minimal access to ICTs and yet more involved in productive activities like agriculture. The youth were considered to ensure continuity.

Question 2: If gender was a consideration in the design of the telecenter, which of the following factors encouraged your decision to pay attention to the differences between male and female accessibility? (Please check all that apply)

<b>Factors</b>	<b>Response</b>
Indigenous women's organizations	
Nongovernmental organizations	
Domestic businesses	
National development priorities	✓
Commitments to regional modernization initiatives (e.g. AISI or NEPAD)	
International agents (e.g. USAID, UNESCO)	
Demand for access from women	
Other	

Question 3: To what extent does targeted marketing play in encouraging women to visit the telecenter?

**VERY GREAT      IMPORTANT      NEUTRAL      SOMEWHAT      NONE**

Question 4: What are some of the strategies (e.g. special days/hours for women, reorganizing the layout of the telecenter to be more conducive to women's access) that you currently employ or plan to employ to attract girls and women to the telecenter?

Actually, that has been one of our set backs we have found out that women need special times and considerations because of their domestic workload and schedule. We however have used other programmes to specifically target women (women entrepreneurs). At the moment we are using outreach programmes to increase accessibility to those who cannot easily reach the telecentre because of distance, time or financial reasons.

Question 5: What are the major criteria by which you measure accessibility of the telecenter? Please rank from 1(highest) to 5 (lowest).

<b>Criteria</b>	<b>Response</b>
Increased in women visiting the telecenter	1
Growth in the number of women workers at the telecenter	5
Greater presence of women in and around the telecenter (e.g. social network building, social inclusion)	4
Improved acceptance of women participants by men	3
Equality among women and men in regards to computer, fax, phone, etc. usage	2
Other	

Question 6: Which of the following presents the biggest restraints to women's access to new technologies and information resources? Please rank from 1 (highest) to 5 (lowest).

<b>Impediment</b>	<b>Response</b>
Socio-cultural Restraints	2
Economic Hurdles (e.g. affordability)	4
Infrastructure (lack of ICT deployments/access)	3
Linguistic Restraints (lack of relevant content)	1
Marginalization/isolation	6
Domestic Expectations (e.g. child/elderly care, farming)	5
Male Dominance (access)	7

Other	
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Question 7: Complete the following sentence with one or more of the following endings:  
Access to and the ability to use the telecenter gives women: (Please check all that apply).

Sentence Completion	Response
A sense of personal and/or collective agency	Ability to
A sense of self-confidence	Ability to
Greater self-esteem	Ability to
The power outside the home	
Group identity (e.g. via social networks)	Ability to
Increased power over their own lives	Access to
The ability to influence the decision making process	Access to
Other	

Question 8: Do you keep a log of visitors to the telecenter? If yes, what is an estimated percentage of women that visit the telecenter on a daily/weekly basis?

**The telecentres do keep a log of visitors to the telecentre. This practice is however inconsistent. Sometimes they forget to do this. However the estimated percentage of women that visit the telecentre on a daily /weekly basis is**

**35% for Naberu telecentre  
40% for Buwama telecentre.**

**Respondent: Chris Morris**  
**City/Country: South Africa**  
**Date: 8 March 2003**

Question 1: To what extent were the difference between men and women a consideration when designing and implementing the telecenter? (Please circle the appropriate answer).

VERY GREAT **IMPORTANT** NEUTRAL SOMEWHAT NONE

Please provide a brief explanation as to why or why not gender was not an issue:

We are targeting women and youth, specifically women as they are the “doers”

Question 2: If gender was a consideration in the design of the telecenter, which of the following factors encouraged your decision to include the differences between male and female accessibility? (Please check all that apply)

<b>Factors</b>	<b>Response</b>
Indigenous women’s organizations	
Nongovernmental organizations	
Domestic businesses	x
National development priorities	x
Commitments to regional modernization initiatives (e.g. AISI or NEPAD)	
International agents (e.g. USAID, UNESCO)	
Demand for access from women	x
Other	

Question 3: To what extent does the telecenter specifically outreach to attract women to the telecenter?

VERY GREAT **IMPORTANT** NEUTRAL SOMEWHAT NONE

Question 4: What are some of the strategies (e.g. special days/hours for women, reorganizing the layout of the telecenter to be more conducive to women’s access) that you currently use or plan to use to attract girls and women to the telecenter?

We used word of mouth amongst the women’s groups

Question 5: What are the major ways that you measure women's access to the telecenter?  
Please rank from 1(highest) to 5 (lowest).

<b>Criteria</b>	<b>Response</b>
Increased in women visiting the telecenter	1
Growth in the number of women workers at the telecenter	3
Greater presence of women in and around the telecenter (e.g. social network building, meeting other women)	2
Improved acceptance of women participants by men	4
Equality among women and men in regards to computer, fax, phone, etc. usage	5
Other	

Question 6: Which of the following presents the biggest barriers to women's access to new technologies and information resources, such as fax machines, phones and the Internet? Please rank from 1 (highest) to 5 (lowest).

<b>Impediment</b>	<b>Response</b>
Socio-cultural Restraints	
Economic Hurdles (e.g. affordability)	2
Infrastructure (lack of ICT deployments/access)	1
Linguistic Restraints (lack of relevant content)	
Inability for women to access the telecenter (e.g. no transportation)	3
Domestic Expectations (e.g. child/elderly care, farming)	4
Male Dominance in terms of access	5
Other	

Question 7: Complete the following sentence with one or more of the following endings:  
Access to and the ability to use the telecenter gives women: (Please check all that apply).

<b>Sentence Completion</b>	<b>Response</b>
A sense of personal and/or collective social being	x
A sense of self-confidence	x
Greater self-esteem	x
Power outside the home	x
Group identity (e.g. via social networks)	x
Increased power over their own lives	x
The ability to influence the decision making process	x
Other	Ability to generate income

Question 8: Do you keep a log of visitors to the telecenter? If yes, what is an estimated percentage of women that visit the telecenter on a daily/weekly basis? No

**Respondent: Tina James, Consultant**  
**City/Country: Pretoria, South Africa**  
**Date: 23 February 2003**

Question 1: To what extent were gender differences in terms of male/female accessibility of resources a consideration when designing and implementing the telecenter? (Please circle the appropriate answer).

IMPORTANT

Please provide a brief explanation as to why or why not:  
Gender considerations came into play in terms of the criteria set for training telecentre managers. The initial telecentre sites that were chosen for funding by the IDRC in South Africa (through the Universal Service Agency), stipulated that at least half of the trainees needed to be women.

To my knowledge, there were no special gender considerations for the users of the telecentre.

Question 2: If gender was a consideration in the design of the telecenter, which of the following factors encouraged your decision to pay attention to the differences between male and female accessibility? (Please check all that apply)

<b>Factors</b>	<b>Response</b>
Indigenous women's organizations	
Nongovernmental organizations	
Domestic businesses	
National development priorities	x
Commitments to regional modernization initiatives (e.g. AISI or NEPAD)	
International agents (e.g. USAID, UNESCO)	x
Demand for access from women	X
Other	

Question 3: To what extent does targeted marketing play in encouraging women to visit the telecenter?

VERY GREAT

Question 4: What are some of the strategies (e.g. special days/hours for women, reorganizing the layout of the telecenter to be more conducive to women's access) that you currently employ or plan to employ to attract girls and women to the telecenter?

I can only answer this question generally – the most important features are generally security (is it a safe place for women to be?). In rural areas, it is generally the women who get left behind so they do have access to the telecentres during the day. To my knowledge there are no telecentres that a specific women's focus.

Question 5: What are the major criteria by which you measure accessibility of the telecenter? Please rank from 1(highest) to 5 (lowest).

<b>Criteria</b>	<b>Response</b>
Increased in women visiting the telecenter	2
Growth in the number of women workers at the telecenter	1
Greater presence of women in and around the telecenter (e.g. social network building, social inclusion)	4
Improved acceptance of women participants by men	5
Equality among women and men in regards to computer, fax, phone, etc. usage	3
Other	

Question 6: Which of the following presents the biggest restraints to women's access to new technologies and information resources? Please rank from 1 (highest) to 5 (lowest).

<b>Impediment</b>	<b>Response</b>
Socio-cultural Restraints	3
Economic Hurdles (e.g. affordability)	2
Infrastructure (lack of ICT deployments/access)	
Linguistic Restraints (lack of relevant content)	4
Marginalization/isolation	
Domestic Expectations (e.g. child/elderly care, farming)	1

Male Dominance (access)	5
Other	

Question 7: Complete the following sentence with one or more of the following endings:  
Access to and the ability to use the telecenter gives women: (Please check all that apply).

<b>Sentence Completion</b>	<b>Response</b>
A sense of personal and/or collective agency	
A sense of self-confidence	
Greater self-esteem	
The power outside the home	
Group identity (e.g. via social networks)	X
Increased power over their own lives	
The ability to influence the decision making process	
Other: greater communication ability with family, friends	X

Question 8: Do you keep a log of visitors to the telecenter? If yes, what is an estimated percentage of women that visit the telecenter on a daily/weekly basis?

Varies from location to location, so cannot answer this question.

In South Africa, there was great sensitivity towards keeping logs (apartheid, recent history of being monitored by state security, etc)

The accuracy of records depended very much on the enthusiasm and value the telecentre manager placed on getting good data. In my experience, many of the logs were not used or well-kept.

**Respondent: Ms. Jennifer Radloff**  
**City/Country: Cape Town, South Africa**  
**Date: 10 March 2003**

Question 1: To what extent were the difference between men and women a consideration when designing and implementing the telecenter? (Please circle the appropriate answer).

VERY GREAT IMPORTANT      NEUTRAL      SOMEWHAT      NONE

Please provide a brief explanation as to why or why not gender was not an issue:

Question 2: If gender was a consideration in the design of the telecenter, which of the following factors encouraged your decision to include the differences between male and female accessibility? (Please check all that apply)

<b>Factors</b>	<b>Response</b>
Indigenous women's organizations	
Nongovernmental organizations	
Domestic businesses	
National development priorities	
Commitments to regional modernization initiatives (e.g. AISI or NEPAD)	
International agents (e.g. USAID, UNESCO)	
Demand for access from women	
Other	

Question 3: To what extent does the telecenter specifically outreach to attract women to the telecenter?

VERY GREAT      IMPORTANT      NEUTRAL      SOMEWHAT      NONE

Question 4: What are some of the strategies (e.g. special days/hours for women, reorganizing the layout of the telecenter to be more conducive to women's access) that you currently use or plan to use to attract girls and women to the telecenter?

Ensure that days/hours accommodate women's labour and household responsibilities and times when women feel safe visiting the telecentre. Would be good to have hours for women only and women telecentre staff to assist women.

Question 5: What are the major ways that you measure women's access to the telecenter?  
Please rank from 1(highest) to 5 (lowest).

<b>Criteria</b>	<b>Response</b>
Increased in women visiting the telecenter	
Growth in the number of women workers at the telecenter	
Greater presence of women in and around the telecenter (e.g. social network building, meeting other women)	
Improved acceptance of women participants by men	
Equality among women and men in regards to computer, fax, phone, etc. usage	
Other	

Question 6: Which of the following presents the biggest barriers to women's access to new technologies and information resources, such as fax machines, phones and the Internet? Please rank from 1 (highest) to 5 (lowest).

<b>Impediment</b>	<b>Response</b>
Socio-cultural Restraints	2
Economic Hurdles (e.g. affordability)	2
Infrastructure (lack of ICT deployments/access)	2
Linguistic Restraints (lack of relevant content)	1
Inability for women to access the telecenter (e.g. no transportation)	2
Domestic Expectations (e.g. child/elderly care, farming)	1
Male Dominance in terms of access	1
Other	

Question 7: Complete the following sentence with one or more of the following endings:  
Access to and the ability to use the telecenter gives women: (Please check all that apply).

<b>Sentence Completion</b>	<b>Response</b>
A sense of personal and/or collective social being	
A sense of self-confidence	
Greater self-esteem	
Power outside the home	
Group identity (e.g. via social networks)	
Increased power over their own lives	
The ability to influence the decision making process	
Other	

Question 8: Do you keep a log of visitors to the telecenter? If yes, what is an estimated percentage of women that visit the telecenter on a daily/weekly basis?

**Respondent: Michel Mavros, Director of Metissacana Cybercafe**

**Country: Senegal**

**Date: 14 April 2003**

Q: On a daily/weekly basis, do an equal number of women and men use the services of the telecenter?

A: No, there is more men than women using telecenters, but when a woman is using telecenters she is just as active and clever with the [technology] tools as men.

Q: If fewer women than men use the center, why do you think that this is so?

A: First, there is the cultural question of women's work. Women work in the home and men engage in work and activities outside the home. Second, because the telecenter is a public space, cultural norms often impede women's ability to use the services.

Q: What changes in the services you offer do you think might attract more women users?

A: There is not a problem of women being attracted to telecenters. If more online teleservices are provided, it will be more and more useful for daily lives of women.

Q: Does the telecenter offer any specific services designed to attract underrepresented segments of society?

A: N/A

Q: Are there any specific strategies that you undertake to encourage women's use of the telecenter?

A: If more online teleservices are provided it will possible for associations, and organizations, etc. to spend more time/energy/money to train people in general, and women specifically, to use Internet.

If there is a real and true integration of new technology at school, young girls will become women with a familiar and ordinary use of Internet.

Q: In terms of access to and use of the resources offered by the telecenter, did you incorporate gender differences into the telecenter's design?

A: No because Metissacana never considered a problem of gender in new technology use. Workers of Metissacana were boys and girls. The problem of gender is outside or in the culture.

Since the birth of Internet in Africa and Metissacana, women have as many reasons as men to use Internet and new technologies, even if these reasons could be different.