

**The Future's Fix: Using Information and Communications
Technology to Reduce Global Poverty**

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Poverty Capstone
Winter/Spring 2009

Technological inventions such as the Internet, satellites, mobile technology, and wireless access to information have infiltrated nearly every aspect of human life: personal communication has become distant and instant, businesses have used the speed and interconnectivity of new technology to great advance, and “Google” has become a verb. While modern technology has undoubtedly revolutionized life in the developed world, the impact of modern technology on the developing world is perhaps more complex. On one hand, governments in developing nations, private non-governmental organizations (NGOs), and groups such as the United Nations or the World Bank have heralded the so-called “information and communications technologies for development (ICT4D)” movement; these proponents see in this approach the potential for a poverty panacea. Critics of the information and communications technologies (ICT) efforts, however, speculate that such a plan would only further exacerbate impoverished conditions in the developing world by causing these nations to be increasingly marginalized. Such critics believe that the continued use of ICTs to encourage development can actually have the reverse effect of increasing the “digital divide” between the rich and the poor, the urban and the rural, the developed and the significantly less so.

This paper addresses several questions regarding the use of ICTs and the ICT4D movement at large. First, how did the movement come to originate, and who are the major players? Second, what are the theoretical arguments for the ICT4D movement, and how does the theory translate into practice? Third, what are the arguments against the movement, and what evidence of failure in prior case studies exists to support these arguments? Finally, what, if any, benefits can reasonably be expected from continuing the ICT4D movement, and how can individuals and institutions best ensure the most beneficial, or the least harmful, application of ICT4D strategies?

History

Information and communications technology for development (ICT4D) is a broad movement involving the use of innovation in the way human beings learn, share, and interact in application to the reduction of poverty for the encouragement of overall global well-being. Typically, information and communication technology (ICT) refers to the “integrated use of...information and communication tools and infrastructure to assist in the dissemination of knowledge,” or alternately, the “electronic means of capturing, processing, storing and communicating information.”¹ Thus, information and communication technology is a general term that can be defined exactly as it sounds; it includes the methods or means through which people can create, save, and share what they know with other people.

As a logical extension, information and communications technology for development (ICT4D) is the use of ICT for the purposes of improving people’s well-being, particularly in terms of poverty alleviation in poor countries. The movement operates under the rationale that ICTs hold the “potential to induce social and economic development in terms of health care, improved education, employment, agriculture and trade, enrich local culture, provide access to relevant information, reduce the costs of production and transactions, enhance communication, facilitate government and strengthen the voice of the poor.”² Such ambitious goals reflect the hope with which the ICT4D movement began, when its pioneers saw in rapid technological advancements the possibility of poverty reduction.

How, then, did the ICT4D movement begin, and who exactly are these pioneers who created the impetus for the movement’s birth? First of all, it is helpful to think of the ICT4D

¹ Franklin, “Suggested Best Practice for Pursuing Development and Poverty Reduction Through National ICT Strategies,” 85

² Ibid., 86

movement more as a trend rather than as a movement *per se*; this is because the so-called movement arose as a result of circumstances such as the advent of the Internet, instead of contrived or planned efforts by any one particular organization or individual. In fact, the first record of a digital computer installed in the developing world was in 1956; the Indian Institute of Statistics used this computer for scientific calculation in Kolkata.³ This was, of course, decades before the term “ICT” existed.

Even before the Internet’s big boom the 1990s, the use of ICTs had expanded to include a broader range of applications than scientific calculations. Specifically, ICTs were used in the 1990s within governmental operations in developing nations, as well as in multinational companies and other firms. At the onset, government was the winner in the early phases of ICT4D, because various agencies in the public sector could use computers to streamline internal administrative functions.⁴ During the 1980s, multinational corporations and other firms expanded to the developing world; these companies viewed information technology (IT) as a “tool for delivering economic growth in the private sector.”⁵ Thus, it appears that the application of ICTs to improvement in both the public and private sectors occurred during the 1980s and 1990s as a natural result of technology’s increasing power and availability, rather than as a formal effort resulting from any one particular initiative.

Although these unofficial efforts to use ICTs for the improvement of the developing world were already taking root by the 1980s and the early 1990s, it was not until the introduction and proliferation of the Internet in the 1990s that a more proactive, organized approach to the use of ICTs for development began to emerge. Unlike the previous governmental and business information technology solutions, which focused more on internal measures to improve agencies

³ Heeks, “ICT4D 2.0: The Next Phase of Applying ICT for International Development,” 26

⁴ Ibid., 26

⁵ Ibid., 26

and companies, the Internet turned the focus to communication. This shift in focus from IT to ICT ignited a resurgence of interest in the use of technology in the developing world. The tools for communication, found in the development of the Internet and related technologies such as personal computers, became significantly more available; however, these tools needed a purpose.

That purpose was found in improving the quality of life in developing nations. Around the same time that the Internet came to the forefront, international development reemerged on the global political agenda. In 1996, the United Nations released their International Development Goals, which were later formalized into the Millennium Development Goals (MDGs) by the Millennium Declaration in September 2000. These goals sought, in particular, to reduce poverty, improve health, and foster gender equality.⁶ The link between the MDGs and the Internet is perhaps best described as such:

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The digital technologies of the 1990s, then, supplied a new tool in search of a purpose; development goals were new targets in search of a delivery mechanism. These two domains intersected and gave rise to ICT4D in a flurry of publications, bodies, events, programs, and project funding.⁷

These two significant events of the 1990s, the growth of the Internet and the preliminary introduction of the MDGs, set the stage for the proactive application of ICTs to international development.

In addition to the UN's original International Development Goals of 1996, the preliminary version of the MDGs, the other major global organizations also helped to solidify these already-existing trends in technology and development into the ICT4D movement. In 1998,

⁶ Ibid., 27

⁷ Ibid., 27

the World Bank published their World Development Report, which “highlighted the role of information, knowledge, and ICT in development.”⁸ In fact, the World Bank actually has a global ICT department, subdivided into three organizational groups that offer loans for ICT projects, promote private-sector investment, and disseminate the best practices through an ICT-focused think tank.⁹ In fact, the World Bank spent \$7.3 billion on projects with an ICT component in 2008 alone. Acting independently from the World Bank, the G8 countries created the Digital Opportunities Task Force in 2000, which set an official agenda for action on ICT4D efforts.¹⁰ The World Summits on the Information Society of 2003 and 2005 “acted as key learning and policy-formation points along the ICT4D path.”¹¹ Certain international development organizations and other non-governmental organizations (NGOs) began to prioritize the application of ICTs to the MDGs.¹² As a result of these concerted efforts by such humanitarian groups, the potential of ICTs started to become concrete policies.

In a more practical sense, how did the optimistic hopes of such groups translate into applications in the developing world? Towards the beginning of the ICT4D movement, the “quick, off-the-shelf solution” that “fell into everyone’s lap” was the rural telecottage or telecenter, which is generally understood to mean a room with at least one personal computer (PC) that is connected to the Internet.¹³ The main idea propelling the spread of telecenters in the developing world was the belief that they could “provide public access to information and communications technologies, notably the Internet, for educational, personal, social, and

⁸ Ibid., 27

⁹ Underwood, 15

¹⁰ Heeks, 27

¹¹ Ibid., 27

¹² Ibid., 27

¹³ Ibid., 27

economic development.”¹⁴ In other words, telecenter supporters seemed to follow an old adage: build it, and they will come, learn, and develop.

As the ICT4D movement continued, the application of ICTs to development grew in more sophisticated ways. Perhaps the “most high-profile” of these later efforts is the One Laptop per Child (OLPC) project, which focuses on developing a low-cost terminal device that works in a large number of poor communities.¹⁵ This global effort, which seeks to provide children in developing areas around the world with sturdy, easy-to-operate computers, focuses on improving rural education in the developing world. Additionally, the use of ICTs has also been applied to NGOs and other community-based organizations (CBOs). The application of ICTs in NGOs and CBOs is twofold: the ICTs can improve the performance and transparency of the organizations, and certain organizations can serve as an “institutional basis for ICT adoption and use in the rural developing world.”¹⁶ As I discuss later, the projects such as that of the OLPC project and efforts by NGOs to integrate ICTs continue to persist in the ICT4D movement today.

The above examples of the ICT4D movement’s progress helps to create a rudimentary definition of the specific forms of technology that are included in the general term “ICT.” A basic understanding of what technologies can and cannot be included within the umbrella terminology helps to create a better understanding of the movement’s goals. The telecenters, laptop projects, and NGO applications all have to do with using relatively new forms of technology to promote interaction or the spread of knowledge. This can be summed up as the “electronic means of capturing, processing, storing and communicating information.”¹⁷ It appears that the “ICT” in the ICT4D movement refers to electronic technologies that are created

¹⁴ Gomez, Ricardo and Katherine Reilly, “Comparing Approaches: Telecentre Evaluation Experiences in Asia and Latin America,” 57

¹⁵ Heeks, 27

¹⁶ Parikh, Tapan S., “Engineering Rural Development,” 54

¹⁷ Heeks, Richard, “Information and Communications Technologies, Poverty and Development”

and developed for the primary purpose of the exchange of knowledge or the productive interaction between individuals and groups. By this definition, it is reasonable to conclude that the ICT4D movement can include forms of technology such as televisions, personal computers, computer programs, wireless connections, satellites, cellular phones, and so forth.

Although the proactive use of communications technologies in the reduction of poverty is certainly a creative approach, the ICT4D movement should be considered neither particularly novel nor an unprecedented idea. After all, “technology has been developing ever since man became Homo Faber.”¹⁸ That is to say, even though the policies or the forms of technology employed by the ICT4D movement may be new, the fundamental concept of using newer technologies to aid in development is an age-old given. For this reason, those who praise ICT strategies in development simply because they believe those strategies to be different, pioneering, or never before attempted ought to be cautioned against this line of thinking, lest we give credit for innovativeness where credit is not deserved.

Credit is deserved, however, for the fact that the supporters of the ICT4D movement managed to find a place for their efforts on the global international development agenda. Certainly, it was helpful that interest in international development issues began to revive on the political agenda at large while ICT4D was taking root.¹⁹ However, with issues such as healthcare, sanitation, violence, or education also on that agenda, how is it that ICTs came to be recognized as a legitimate method of poverty reduction in developing nations? The answer lies in a separate, but related, trend.

The applied use of ICTs in development began in a period not only of rapid technological advancement, but also of rapid globalization. Globalization, put simply, is the “integration and

¹⁸ Ambirajan, S. “Globalisation, Media and Culture,” 2141

¹⁹ Heeks , 27

intermeshing” of “social groups living in isolation.”²⁰ In more specific, economic terms, globalization is the “liberalization and free movement of goods, services, capital and finance across national boundaries.”²¹ This latter definition is the more quantifiable one and allows researchers to track trends in globalization data over time. Looking at the time period in which the ICT4D movement was born, mostly the 1980s and 1990s, we are able to see a clear expansion of the global marketplace. According to World Bank and United Nations Conference on Trade and Development (UNCTAD) data, for example, the 1980s and 1990s saw a rise of merchandise exports throughout the world from 11 percent to 18 percent, and a corresponding rise in service trade from 15 percent to 22 percent.²² Looking at the big picture, the data show that in these two decades, the growth of international trade outpaced domestic economic growth, the growth of foreign direct investment occurred more rapidly than the growth of international trade, and the pace of increase in foreign portfolio investments overtook everything else.²³ Therefore, the numbers indicate that economic globalization was on a rise in the decades in which ICT4D began.

What exactly is the relationship between globalization, advancements in ICTs, and the ICT4D movement? The dual trends of technological advancement and globalization can be described as “symbiotic”; that is, they “feed on each other, and while growing individually, together have far more impact on human existence than ever before.”²⁴ In other words, globalization fuels technological advancement, and vice versa. Specifically, information technology contributes to globalization by encouraging the growth of electronic commerce and

²⁰ Ibid., 2141

²¹ Ibid., 2142

²² Ibid., 2142

²³ Ibid., 2142

²⁴ Ambirajan, 2141

communication between buyers and sellers, even if they are in different countries.²⁵ Some economists believe that information technology can influence comparative advantage dynamics around the globe, because economies will become less or more competitive depending on how they employ information technology strategies.²⁶ In a corporate sense, information technology has “enhanced the ability of multinational corporations to coordinate their cross-border activities, which increases the ratio of foreign investment to world output.²⁷ Clearly, the use of information technology has the potential for great impact on globalization patterns; likewise, a more globalized economy demands more ICT solutions for communication across borders. It was in this type of globalized market mentality that the ICT4D movement was born.

Why ICTs?

The concept of using ICTs to improve lives in the developing world is fundamentally grounded in a recent redefinition of poverty to include more than the monetary value of human life. Poverty was redefined by development economists in the late 1990s, inspired by the work of Amartya Sen.²⁸ Sen’s definition and subsequent interpretations by the World Bank and the European Commission “went beyond income levels to include powerlessness, voicelessness, vulnerability, and fear,” as well as the “deprivation of basic capabilities and lack of access to education, health, natural resources, employment, land and credit, political participation, services and infrastructure.”²⁹ As we entered the 21st century, the Millennium Development Goals (MDGs) also reflected the belief that poverty included the “inability to achieve basic standards in

²⁵ James, Jeffrey, “Information Technology, Cumulative Causation and Patterns of Globalization in the Third World,” 150

²⁶ Ibid., 150-151

²⁷ Ibid., 151

²⁸ Franklin, 94

²⁹ Ibid., 94

nutrition, health, education, the environment, and a voice in the decisions affecting poor people's lives."³⁰ This redefinition of poverty to include types of deprivation other than income helped to make the ICT4D movement possible. If the definition of poverty were limited to a strictly income-based guideline, then efforts with little direct correlation to increase of incomes, such as the use of ICTs for development, are less likely to take hold. However, because the focus in development shifted away from a restricted numerical standard and towards an expansion in what constitutes poverty, a movement such as ICT4D is more readily accepted and supported.

What potential do ICT supporters see in their movement as a method of reducing global poverty? Primarily, these supporters believe that ICTs may be beneficial in alleviating many of the less income-based aspects of poverty. For example, some scholars who support the use of ICTs in development have stated that ICTs have the potential to:

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...induce social and economic development in terms of health care, improved education, employment, agriculture and trade, enrich local culture, provide access to relevant information, reduce the costs of production and transactions, enhance communication, facilitate e-government and strengthen the voice of the poor.³¹

The World Bank has a similar vision for ICTs and development, stating that "ICT has an impact on nearly every intervention we make to reduce poverty. It enhances employment, pushes up incomes, increases the employment of women, creates efficiency in government services, and reduces corruption."³² Note that, rather than limiting the potential of ICTs in development to a purely income-based or financial approach, the supporters of this method of poverty alleviation

³⁰ Ibid., 95

³¹ Ibid., 86

³² Underwood, 15

include a wide range of potential positive outcomes that could result from the effective application of ICTs in development.

Why did the supporters of ICT consider their movement to be so crucial in poverty alleviation? What is it exactly about ICTs that they believe to be more critical in the reduction of global poverty than focusing specifically on, for example, agricultural development or education? For the success of this movement, timing may be everything. An increased focus on ICTs does not necessarily mean that there is a decreased focus on other aspects of poverty alleviation; rather, the introduction of certain digital technologies in the 21st century has added a new component to poverty issues. As life becomes increasingly digitized, “those without ICTs will be increasingly excluded.”³³ In every aspect of development from sanitation to human rights, from education to healthcare, the introduction and proliferation of new digital communication technologies has brought about the possibility of new approaches and new solutions to these problems in international development.

How has the potential of ICTs in development translated into practice, and have these strategies generally worked? Indeed, the application of ICTs in the developing world has seen great success in several nations, through a variety of methods. Examining case studies of ICT applications that have helped to bring about improvements in the developing world can help poverty-focused individuals and groups to identify key characteristics that have made these methods particularly effective. Here, we examine case studies involving the creation of new job opportunities in Asia, the improvement of education in Honduras, the World Health Organization’s efforts to make research more available in developing nations, and the use of ICTs in women’s gender equity NGOs in Latin America.

³³ Heeks, 26

In several developing Asian nations, the use of ICTs has been significant in the reduction of poverty through economic improvement. Specifically, the “tiger economies” of Singapore, Hong Kong, Taiwan, and South Korea have seen a reduction in poverty as a result of ICTs.³⁴ The way in which ICTs have aided these countries is indirect; rather than alleviating poverty through their inherent purpose of sharing information, ICTs in the Asian tiger economies have proven helpful through production. That is, local production in these and similar nations of both hardware and software has allowed for the employment of a “few highly educated and trained engineers supported by a small skilled workforce.”³⁵ This creates a new set of jobs available to citizens within these developing nations.

The reason for the success of the Asian examples with regards to ICT methods is economic. More than “any other group of developing countries,” the Asian case studies have been “so successful in exploiting the advantages of global integration” because they “fully understood the strategic characteristics of information technologies and the cumulative interactions between them.”³⁶ Specifically, they recognized that global competition in an “ongoing technological revolution calls for new concepts and principles beyond those offered by the traditional national comparative advantage.”³⁷ In response to this call for new concepts and principles, the developing countries such as the Asian tiger economies began to produce and export information technologies, contributing to their trade component of the total world output.³⁸ This helped to improve these nations’ relative economic standing in the global economic order.

³⁴ Arocena, Rodrigo and Peter Senker, “Technology, Inequality, and Underdevelopment: The Case of Latin America,” 22

³⁵ Ibid., 22

³⁶ James, 148

³⁷ Ibid., 148

³⁸ Ibid., 151

In addition to the economic improvement as a result of the ICT industry seen in Asia, one project in Honduras also noted an improvement in education due to the use of ICTs. In 1999 and 2000, two “solar villages” were created in San Ramon and San Francisco, respectively, through a program called Solar Village Program. Initially, the government of Honduras conceived this project as a means to provide basic energy services to schools, clinics and other communal centers in “remote, un-electrified communities through solar energy systems, mainly photovoltaic (PV) systems.”³⁹ With the assistance of OnSat Network Communications in Utah, the Solar Village Program shifted its objectives in mid-2000 from an exclusive focus on solar power “towards ‘bridging the digital divide’ through access to telecommunications and the Internet.”⁴⁰ Of the reported results of this project, the most successful were in the field of education.

The village of San Ramon has a primary school that also doubles as a community center. Initially, the Solar Village Program used photovoltaic systems to provide lighting to the school and adjacent clinic. Later, after the project’s collaboration with OnSat, telecommunications services were introduced, including a telephone, Gateway computers, broadband access to the Internet, and satellite reception equipment. Several months later, researchers made observations of the new technology’s impact on the village residents, and they found that “access to computers and the Internet had the most immediate impact on school children.”⁴¹ The school children exhibited a higher interest in learning as they were introduced with a variety of learning software and the Internet. This interest also extended to adults in the community, who expressed a desire to use the new technologies for economic improvement.

³⁹ Lallement, Dominique M. et al, “Empowering Information and Communication Technologies in Isolated Areas,” 48

⁴⁰ Ibid., 48

⁴¹ Ibid., 49

On a more far-reaching scale, the use of ICTs has also aided researchers in the developing world to gain access to the latest medical and scientific research. Several of the UN Millennium Development Goals called for developments in the scientific realm such as the reduction of child mortality, combating disease, and ensuring environmental sustainability.⁴² In order to make significant progress on these issues, it is imperative that researchers in developing and developed nations are not operation “in isolation from one another.”⁴³ This is because solutions to problems that afflict the developing world depend on cooperation and intellectual exchange with the developed world. The availability of the Internet and other communications tools makes such an exchange of ideas much more feasible.

One effort in particular, the World Health Organization’s HINARI initiative, is particularly notable. In 2000, the WHO launched a partnership with research publishers to provide free or low-cost medical journals for researchers in the poorest countries. These journals were made available via the Internet. The HINARI initiative focuses on providing content at the institutional rather than the individual level, and the effort has significantly improved access to research in developing countries. In fact, the HINARI initiative has spurred similar projects in agricultural research (AGORA) and environmental research (OARE).⁴⁴ Efforts such as HINARI benefit the developing world by employing the original intent of ICTs as a vehicle for sharing knowledge and information.

Finally, the use of ICTs has also met success when employed by certain NGOs. The potential for ICT application methods in NGOs is promising; NGOs and similar organizations can use ICT tools such as computers or the Internet for internal operations or external outreach. In regions such as Latin America, where NGOs have taken on “ever-expanding political roles

⁴² Cockerill, Matthew J. and Bart G. J. Knols, “Open Access to Research for the Developing World,” 66

⁴³ Ibid., 66

⁴⁴ Ibid., 66

that range from policy-making to ensuring a voice to marginalized populations,” ICTs have demonstrated their potential for success.⁴⁵ By making new technological tools more available to NGOs with a focus on the alleviation of poverty, ICTs have an indirect effect on improving the lives of the impoverished within those nations.

Some Latin American examples that have shown particular promise are women’s organizations, which have benefited significantly from the use of ICTs. The United Nations World Conference on Women, held in 1995, sparked the Mexican women’s organization’s use of ICTs. This conference, along with the Women’s Programme of the Association for Progressive Communications, was said to have “marked the point where women’s use of ICTs really took off,” because the women’s NGOs could more efficiently download documents, follow debates, distribute information to their networks, all through the use of e-mail or other forms of mass media.⁴⁶ Perhaps most importantly, the availability of Internet service providers allowed for a more cohesive NGO community; in a sense, the Internet “brought the NGO world together.”⁴⁷ Thus, the introduction of newer forms of communication technologies allowed for NGOs to change their internal methods of operation as well as the opportunities for collaboration with one another.

Why Not?

The use of ICTs in hopes of reducing poverty has not met wholehearted support. After ICT efforts began to appear throughout the developing world and were “heralded as catalysts for

⁴⁵ Friedman, Elisabeth Jay, “The Politics of Information and Communication Technology Use Among Latin American Gender Equality Organizations,” 30

⁴⁶ Ibid., 30

⁴⁷ Ibid., 34

‘leapfrog development,’” a backlash against rural deployments of ICTs also began to spring up.⁴⁸ Critics of ICT efforts mainly oppose the practicality of the movement; in other words, they do not believe that the real world application of ICTs truly meets its intended goal of alleviating poverty.

Mostly, this is because the critics believe that the most important goals in poverty reduction cannot be solved through the use of ICTs. Their hesitation is certainly justified when considering the curious image of “fancy computers and Internet links” set vis-à-vis “medieval living conditions.”⁴⁹ Instead, would resources not be better invested in disease reduction, sanitation, food security, or other more immediately life-threatening issues plaguing many developing nations? Many might agree that, “Information is only one of many needs. E-mail is no substitute for vaccines and satellites cannot provide clean water.”⁵⁰ Bill Gates, perhaps the most well-known proponent of technology, once asked at a 2000 conference on the digital divide, “Do people have a clear view of what it means to live on one dollar a day? About 99% of the benefits of having a PC come when you’ve provided reasonable health and literacy to the person who’s going to sit down and use it.”⁵¹ Critics such as Gates are not unfounded in their concern that ICTs do not address the most critical problems of impoverished people and nations.

In addition to the risk that ICTs methods fail to attack the most pressing aspects of poverty, the critics of ICTs for international development also fear that this approach does not reach the poorest of the poor. Rather, they believe that the application of ICTs was “likely to reach everyone but the poor.”⁵² In fact, it is possible that those particularly marginalized persons or nations who do not have the capabilities to access or use ICTs “will be further marginalized,

⁴⁸ *The Economist*, “Behind the Digital Divide,” 1

⁴⁹ *Ibid.*, 1

⁵⁰ Arocena, 22

⁵¹ *The Economist*, 1

⁵² Franklin, 86

given the prevailing digital divide.”⁵³ In other words, even if ICT efforts reach some nations or individuals, the most impoverished people in the least developed countries will be even more left behind.

Primarily, the danger of ICTs marginalizing the very poor lies in the fact that most forms of technology, typically, are not created or intended for the poor. Most ICT professionals who develop the technology “spend their lives serving the needs of the world’s wealthier corporations and individuals.”⁵⁴ This is because it is the multinational corporations that play a “major role in the generation and international diffusion of technology, accounting for around 80 per cent of world trade in technology and the majority of private research and development.”⁵⁵ The technology, although able to be applied to poverty reduction efforts, was not initially created with the poor in mind at all.

Perhaps as a result of the responsiveness of technological developments to market pressures and the influence of wealthier individuals, ICTs are sometimes incompatible with the needs of the very poor. Often, this incompatibility is linked with the education gap in the developing world. Both education and technology are “very unevenly distributed through the world.”⁵⁶ Unfortunately for the poor, the “principal trends in techno-economic change favor, in general, highly educated people.”⁵⁷ Without the education, training, or literacy to effectively use ICTs to their benefit, the poor do not benefit from the mere increased availability of ICTs.

One approach that has consistently met with failure and unfavorable results is the telecenter method of ICT for poverty reduction. Telecenters are “physical spaces that provide public access to information and communication technologies, notably the Internet, for

⁵³ Ibid., 87

⁵⁴ Heeks, 26

⁵⁵ Arocena, 17

⁵⁶ Arocena, 18

⁵⁷ Ibid., 25

educational, personal, social, and economic development.”⁵⁸ Practically speaking, the telecenter concept translated into a “room or building with one or more Internet-connected PCs,” typically in rural areas.⁵⁹ The telecenter solution was an idea that was easy to install and had the potential of delivering information to poor individuals in isolated areas.⁶⁰ Initially, the telecenter effort caught on quickly; projects such as InforCauca in Colombia, CLICs in Mali, and Gyandoot in India began to spring up.⁶¹ For each of these projects, the idea was to make the tools for information more accessible, and the people would communicate, learn, share, and develop.

Unfortunately, many telecenter projects, regardless of location, failed for similar reasons. Often, telecenters projects had “limited reach,” making them ineffective in meeting their intended goals.⁶² The availability of a telecenter in a village does not mean that the telecenter is reachable or accessible to all individuals living in the village, and the people’s access can be limited by factors such as location, time constraints, or literacy. Furthermore, it is important to note that “individual telecenters have specialized needs and will require training and support to carry out local, specialized evaluations.”⁶³ Due to the specialized needs of different villages, telecenters that are generic in design will have difficulty reaching all indigent individuals within the village population.

Telecenters also failed to generate significant interest among many of the individuals who were supposed to benefit most from the telecenters. For example, in the Indian village of Thillan, a telecenter known as the Knowledge Center was set up by the M.S. Swaminathan Research Foundation, a local non-profit organization.⁶⁴ The center is equipped with five computers, solar

⁵⁸ Gomez, 57

⁵⁹ Heeks, 27

⁶⁰ Ibid., 27

⁶¹ Ibid., 27

⁶² Ibid., 27

⁶³ Gomez, 78

⁶⁴ *The Economist*, 1

cells, and a wireless Internet connection. When villagers visit the center, they are exposed to a wide range of information, including prices of crops, classified advertisements for jobs, government welfare information, and health advice.⁶⁵ Theoretically, this type of telecenter has all that an impoverished village might need to help their residents succeed through providing more information. However, the Thillan Knowledge Center has met little success. According to one villager, “It has no connection to my life. We’re just sitting here in our house trying to survive.”⁶⁶ Another villager says, “I’m illiterate. I don’t know how to use a computer, and I have to fish all day.”⁶⁷ True to many critics’ fears, it seems that the Thillan Knowledge Center is one example of ICTs failing to help those most in need.

Looking Ahead

In examining the ICT movement and its relation to the reduction of poverty, both arguments for and against the efforts can be fairly made. Proponents of ICTs believe that they provide the solution to many problems in the developing world, by providing access to information, easing the flow of knowledge, streamlining the work of NGOs and other public interest groups, or creating a new industry of jobs. Critics, on the other hand, fear that ICTs do not benefit the poor as they intend, but instead may have the unwanted side effect of further marginalizing particularly vulnerable groups.

Looking to the anecdotal evidence available in the field, it is evident that both the proponents and the critics are correct. Clearly, some ICT efforts have been successful. For example, the World Health Organization’s HINARI initiative has been helpful in providing scientific literature to researchers in the developing world, the ICT industry has created many new jobs in several Asian economies, Latin American women’s NGOS have used ICTs to

⁶⁵ Ibid., 1

⁶⁶ Ibid., 1

⁶⁷ Ibid., 1

improve their internal operations and collaborative abilities with other organizations, and ICT efforts in Honduras have led to a greater interest in education among school children. However, other ICT efforts have been much less effective than these examples. Most notably, many telecenter efforts such as the Thillan Knowledge Center in India have failed to meet their intended goals of providing information and knowledge to village residents; instead, they have not reached the poorest individuals in the most impoverished communities.

What exactly differentiates the success stories from the ICT failures? What characteristics set the successes apart, allowing them to make a positive impact, and what factors caused the ICT failures to fail? Analyzing the anecdotal evidence available, it appears that the ICT success stories all have one characteristic in common: they employ ICTs in a manner that is indirect, rather than placing the ICTs directly in the hands of the impoverished. Whether through the use of schools, NGOs, research institutions, or corporations, the successful examples enlist the assistance of a medium or conduit through which the ICTs are distributed. Usually, that medium is a group with poverty reduction on their own agenda. Compare this to the highly direct nature of the telecenter approach, which attempted to place the ICTs right into the hands of the impoverished, who often responded negatively or indifferently to the efforts.

The greater potential for success of indirect ICT applications should be a factor for consideration in any future ICT efforts. Rather than choosing methods similar to the telecenter approach, which has consistently seen less-than-ideal results, future ICT efforts should involve the use of a middleman to employ or disseminate the technology. The ICTs can aid the organizations, who can in turn better aid impoverished individuals in their nations. Specifically, “NGOs and CBOs can serve as an institutional basis for ICT adoption and use in the rural

world.”⁶⁸ Such groups can use the technology to improve internal infrastructure of their organizations, as well as identifying the most effective methods of ICT application for their specific locale and region.

The potential for ICTs in the reduction of poverty does exist. In order to realize that potential, it is imperative to evaluate past ICT efforts before setting a future agenda for the use of ICTs. Looking ahead, the indirect use of ICTs by organizations focused on poverty issues seems to be the most beneficial application of the newest and latest technologies. With such efforts, one can sincerely hope that ICTs can help to create a world that is more interconnected, more unified, and more harmonious.

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⁶⁸ Parikh, 54

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