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The Use of ICT for Social Development in Underprivileged Communities in Egypt

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Abstract

Emerging information and communication technology (ICT) is setting the pace for a changing, competitive and dynamic global community. The transformation process seems rapid, concrete and smooth in developed nations with less promises and achievements in the developing world. These emerging technologies represent the platform for business and socioeconomic development in the 21st century. Therefore, it is becoming a real-time challenge for developing nations to keep pace with the developments taking place worldwide but also to have equal access to its own community in terms of technology literacy and usage for socioeconomic development purposes. Building the infrastructure will not realize quantum leaps in the development process unless it is coupled with concrete projects and activities that engage the community at large with its different segments and groups irrespective of their locations whether urban or remote, gender or background. This paper describes the experience of community development centers in Egypt and its role in diffusing ICT for societal development and digital inclusion based on a review of a number of community development centers models that were implemented since the mid 1980s.

Keywords

ICT transfer, community development, Internet diffusion, telecenters, community development centers, ICT and social development, technology access centers, ICT in developing nations, Egypt

1. Introduction

Developing nations when addressing future development and growth need to work out a formula that integrates the developments that have been taking place worldwide over the last few decades and workout a formula that addresses its specific needs and at the same time optimally allocate its resources to serve their business and socioeconomic and development needs. It is worth noting that in the 1960s and 1970s the focus was more directed to the role of the state, during the 1980s and 1990s the attention was shifted to the role that should be played by the private sector, later on and in the early years of the 21st century there was another shift to the role of NGOs. There is no doubt that in today's global marketplace and based on the forces and dynamics of competition, developing nations should be focusing on formulas and scenarios that address the needs of the local communities and at the same time benefit from the experiences and resources of the amalgamation of the state, private sector, public sector and NGOs through models of partnership and collaboration.

ICT innovations are increasingly having important implications on social development due to its role in introducing and diffusing the concepts of knowledge sharing, community development and equality. The implications on developing nations could be

remarkably effective if these technology innovations are properly introduced and managed. However, if the implementation process is not well supported and controlled, the result could be an increasing digital divide between the developed and developing worlds. It is important to avoid the fact that ICT could be marginalized in the development process. There is an urgent need to clearly show that it is ICT that generates the wealth of the enterprise which in turn supports social development. Moreover, it is ICT that delivers the productivity gains that enable lives of material comfort for many around the world that would have been unthinkable only two centuries ago (Heeks, 2005).

It is widely diffused in the literature that the developing world's lack of access to ICT is often labeled the digital divide. Nevertheless, such divide exists between nations and within nations both developed and developing; in rural and urban areas as well as between different segments of the same community and is usually due to a number of reasons including expensive personal computers, poor or limited telecommunications infrastructure especially in remote locations, and high illiteracy rates and poor educational systems in developing nations (Kamel and Tooma, 2005).

Since the 1980s the implications of ICT has been massive in different dimensions at the individual, organizational and societal levels. However, in the early 1990s and with the public diffusion of the Internet, it sparked an information evolution around the world with millions of people relying on it for information interchange on a daily basis (Hashem, 1999). Today, the Internet represents the global medium in the new millennium (Cerf, 1999) and is a major driving force of change in the global market place (Kamel, 1995). The Internet changed people’s lives in the way they work, live, study, and get entertained. The Internet growth rates are massive, doubling every year since 1988 (Cerf, 1999) and forecasts show that numbers will continue to rise in the coming years as the world appreciates more the role of information and knowledge dissemination in societal development. Currently, it is reported that there are 1.2 billion Internet users who exchange over 82 billion emails and browse the Internet on almost daily basis (www.emarketer.com).

With the growing use of various ICT, it is becoming a priority how to effectively deploy these technologies to serve the socioeconomic and development objectives of the community. Respectively, massive efforts and resources need to be allocated to minimize the divide between nations and to contribute to global development. It is perceived that by combining new technology, appropriate organization, capital formation techniques, and proper understanding of the needs of the village populations, this might pave the way for innovations that bring the Internet to the 40% who live in the rural areas in developing nations (Perry and Sadowsky, 1996). Therefore, there is an urgent need to close the technology divide by decentralizing the infrastructure presence in developing nations beyond the capitals and the major cities because the Internet connectivity in those areas is extremely poor and represents a compelling need to improve village life (Press, 1999a). This has also been one of the recommendations of the World Summit on the Information Society (WSIS) that was held in Geneva, Switzerland in December 2003 and reiterated once again in Tunisia in November 2005 in the second part of the summit (www.itu.int).

It is important to note that there are four aspects to the digital divide; (a) people, (b) information, (c) knowledge, and (d) technology and these four critical aspects should

be developed together for an effective implementation to take place. ICT, which is a vital element of the knowledge economy, can be both a unifying and a divisive force. Its divisive aspect has come to be known as the digital divide (Arab Human Development Report, 2002). The digital divide, also referred to as haves and have nots, relates to the possession of ICT resources by individuals, schools and libraries to variables such as income level, age, ethnicity, education, gender and rural-urban residence (Kamel, 2005a). Reactions vary concerning the digital divide. In the final analysis, its existence is undeniable, but it is not an entirely technological issue. Technology has always been, and will continue to be, a social product. ICT is an emphatic testimony to this fact. However, it is important to note that as much as the digital divide calls for technological solutions, it calls for societal innovation and the provision of awareness and preparation by the society to face the needs and requirements of ICT at all levels such as individual, groups and corporate. For societies to develop, grow and benefit from the ICT evolution, nationwide introduction, adoption, diffusion and adaptation of technology should take place.

2. ICT Diffusion in Egypt

ICT in developing nations is becoming a necessity for socioeconomic development (Press, 1999b). However, this can only be realized through a two-tier approach where society will contribute in shaping the infrastructure and vice versa. Egypt, as a developing nation, has heavily invested in its information infrastructure since 1985 to become the platform for the economy's development and growth (Kamel, 2005a). During the period 1985-1995, a government-private sector partnership had a remarkable impact on the build-up of Egypt's information infrastructure (Kamel, 1995 and 1997). During that period, hundreds of informatics projects and centers were established in various government, public and private sector organizations targeting socioeconomic development (Kamel, 1998). These projects included human, technology and financial infrastructure development, which had invaluable inputs in building an ICT literate society capable of leading Egypt into the 21st century from an information perspective (www.idsc.gov.eg). Such elements represented the major building blocks necessary to establish a full-fledged information infrastructure capable of keeping pace with the developments taking place globally. In 1999, ICT was identified as a priority at the highest policy level and a new cabinet ministry was established namely the Ministry of Communications and Information Technology (MCIT) leading to more investments and infrastructure build-up (Kamel, 2005b).

In that respect, the investment and build-up of Egypt's ICT infrastructure has taken massive steps during the last decade in different building blocks including human, information, legislation and infrastructure (IDSC Annual Report, 2005). In March 2008, the number of IT companies exceeds 1785 going up from just over 300 companies in 1999 working in the software development, technical support and sales of hardware and software, as well as in the development of IT solutions, systems integration and consultation (Kamel, 2005a). This figure includes the IT multinationals that are coming to Egypt to establish and/or expand their businesses in the IT sector include leading vendors worldwide that are growing in number every year as the potential for a large IT marketplace grows (www.citegypt.com).

During WSIS in 2003, the presence of the President of Egypt heading his country's delegation highlighted the importance the current administration is giving to ICT and its future development with a clear and determined objective to bridge the digital

divide and showing the commitment of all the constituencies of the society of the comprehensive planning set to diffuse ICT in Egypt (www.mcit.gov.eg). Examples that were shown to reflect the commitment of the government included initiatives targeting the transformation of the community to be ready for the information society through model projects such as free-Internet, PC for every home, IT clubs and diffusing broadband in addition to sector-related projects in education, health, banking, and public administration amongst others. These projects have helped improve the digital demographics of the community at large especially when the infrastructure was diffused to reach communities in the remote and unprivileged areas. Table 1 demonstrates the status of electronic readiness in Egypt showing the number of Internet users, PC penetration rates and the total number of IT clubs (Kamel, 2004).

Indicators	2004	2005	2006	2007	Growth Rate (2004-2007)
Internet Users	3.6 million Users	4.2 million Users	5.4 million Users	7 million users	48.57%
PC Penetration Rate	1.5 million PCs	1.7 million PCs	2.2 million PCs	3 million PCs	50%
IT Clubs	1000 clubs	1200 clubs	1600 clubs	3000 clubs	66.67%

Table 1 – Electronic Readiness in Egypt

One of the effective platforms that helped diffuse ICT in Egypt during the last decade has been the diffusion of IT clubs. There has been a variety of models that were used but the most successful reflected a public-private sector initiative providing affordable Internet access throughout the nation's 26 provinces. The locations include youth centers, culture centers, NGOs, universities, schools, public libraries and information centers. Today, the total number of IT clubs exceeds 1200 compared to 30 in 1999. All IT clubs are equipped with computers with Internet connectivity. They have the facilities to offer training programs to help promote ICT awareness and utilization. Among the expansion plan for the IT clubs are the provision of an electronic library, dedicated space for trainees with special needs, and the provision of access to eGovernment and eLearning services with an objective to have an IT club in each of Egypt's 4000 village in the near future. The IT club model reflects the typical telecenters model available in many developing nations. In the case of Egypt, the objective of these clubs goes beyond ICT diffusion with more focus on using the clubs as a platform supporting socioeconomic development of the local community especially in remote and unprivileged areas.

3. Emergence of Community Development Centers

The telecenters (community centers) concept has become an integral element of the global use of ICT for development (Colle and Roman, 2003). Telecenters are usually established in developing nations to address a variety of challenges facing nations such as Mexico, Brazil, Egypt, India and Nepal (Colle and Roman, 2005), Telecenters are established to help promote and support ICT through making it affordable to those who could not afford them individually; a concept that was originally introduced in the 1980s in Scandinavian countries (Colle and Roman, 2005).

Telecenters are usually public sector organizations operated by governmental bodies or NGOs serving low-income communities with a developmental mission. Services

offered include computing and Internet access, community newspapers, book lending, training, photocopying, faxing, and telephone services (Colle and Roman, 2005). With the evolution of the Internet, different versions of telecenters emerged such as commercially-oriented cybercafés that are usually established by the private sector and focus on providing customers with computing facilities and Internet connections with a more urban, better educated, and more economically oriented community of users (Davison et al, 2005). Finally, information access points is another model focusing on Internet services with an objective to provide the community with their information needs such as in the case in Canada, Mexico, and India. These information access points usually focus on developmental and priority issues such as health and agriculture (Colle and Roman, 2005).

4. Community Centers as a Vehicle for Development

The IT literature demonstrates that the emergence of ICT is an active contributor to the creation of the information society (European Community, 1995). Moreover, according to a UNESCO report in 1996 it is believed that for developing nations the priority is not to have access to ICT but rather how to use them for development although according to Bikson and Panis (1996) the level of access to ICT influences the volume and degree of opportunities for communities to participate effectively in a range of economic, social and civic activities. Respectively, it is important to have developmental projects and initiatives in rural and unprivileged areas and communities to help provide public access to ICT through models such as telecenters (Bertin, 1995; Campbell, 1995; Qvortrup, 1995).

The concept of community development is central to an integrated approach to development in which the workings of a local economy are inseparable from wider social, political and cultural processes (Gardner and Lewis, 1996). The focus of telecenter operations is in the information services offered to its clientele. These include agricultural extension services, community health projects, village reading rooms and community meetings. However, the advent of the Internet and the emergence of innovative ICT have introduced unprecedented opportunities to enhance the information channels available in a typical local area in the developing world (Balaji et al, 2000).

Telecenters come with a variety of names and functions including IT clubs, Internet Cafés and technology access clubs depending on the environment and their targeted related-activities (Share, 1997; Conway, 1995). Generally, the objectives of the telecenters include access to electronic mail services, web browsing, training either self-based or tutor-led as well as information or knowledge retrieval assistance. It is important to note that some Internet Café models act as vehicles for community development that are outcomes of public-private partnerships and led by an active civil society role for social development purposes rather than profits (Kamel, 2004).

There is no doubt that community telecenters represent an effective platform for introducing and diffusing ICT for accelerating development (Conradie, 2005). The services offered, also known as community involvement projects, could include providing computer facilities at schools, after working hours and during weekends for the public for training and information access (Hawkins, 2002). Telecenters in schools and universities usually capitalizes on a technology infrastructure that is already in

place rendering the formula of operations more cost-effective (Caspary and Connor, 2002). Innovative solutions such as telecenters and community development centers that are established worldwide through efforts involving international organizations such as the World Bank and United Nations organizations can play vital roles in leveraging resources and providing wide access to ICT to the general public and help build-up the most vital building block of the information society that is the information infrastructure. A model that has been tested since the late 1990s in Egypt is that of Technology Access Community Centers-TACC (www.tacc.egnet.net). Other initiatives introduced included the IT clubs model as a platform for diffusing awareness on ICT at the local community level. Moreover, the role of IT multinationals played part in collaboration with other local stakeholders in the form of Microsoft Unlimited Potential (UP) program which was introduced to the local market with an objective to demonstrate how ICT can help transform the community at the local level and improve the socioeconomic development process in developing nations (Davison et al, 2005).

5. Community Development Centers in Egypt

Community development centers offer a wide spectrum of opportunities for the local community in developing nations such as Egypt to close both intra and inter digital divides and help local communities leapfrog and compete with the capital and large cities fortunate to have more resources and facilities. Following is a brief demonstration of a number of community development centers models that have been established in Egypt over the last decade demonstrating their roles and contributions in socioeconomic development.

5.1 Technology Access Community Centers

In March 1998 the Technology Access Community Centers (TACC) project was launched in the province of Sharkeya in three different locations marking the first telecentre in Egypt (Hashem, 1999; Ryniak and Sabet, 2002). The center was established by the United Nations Development Programme (UNDP) in partnership with the Cabinet of Egypt Information and Decision Support Center (IDSC), the province of Sharkeya, the Investors Association and the Sharkeya Chamber of Commerce. The objectives of TACC were focused on providing the community with access to IT and the skills needed for the effective use of IT to encourage sustainable development. TACC offered a unique delivery mechanism that empowers local communities in developing countries. Each TACC was usually established in a central location offering a variety of ICT services including seminars, workshops, road shows, specialized training as well as technical expertise for professionals and the general public. The mission of TACC is community empowerment and local capacity building through optimizing the utilization of ICT tools and techniques (Hashem and Kamel, 1998).

5.2 IT Clubs

IT clubs are the flagship of the accessibility objectives of MCIT and are an essential component of the government's intention to give all citizens the opportunity to become computer literate and hence joining the digital economy, regardless of their skill, gender or income level. IT clubs provide training and access to ICT and they have proven effective whereas one young Egyptian trained at an IT club won the distinction of being the youngest person ever to top one of Oracle training courses.

IT clubs are used by SMEs, local organizations, and the public at large. They have been established in universities as a means of bringing up-to-date technologies into reach for all university students.

IT clubs represent model collaboration between different stakeholders whereas MCIT provides all necessary ICT infrastructures, a local NGO or a university provides the space and takes responsibility for management of the IT club and private sector companies as well as ICT multinationals support the training and salaries of the facilitators at the clubs as well as assist in creating employment opportunities for the local community. Today, there are IT clubs in most of the disadvantaged areas and among underprivileged communities charging a nominal fee of 20 cents per hour. Recently, mobile IT units have been introduced to complement the IT clubs by providing traveling facilities that can visit areas where no NGOs have been identified to take on the responsibility of an IT club. During 2007, mobile units made 21 visits to 17 provinces (www.mcit.gov.eg).

5.3 Unlimited Potential

The Microsoft Unlimited Potential (UP) program in Egypt seeks to empower youth and adults so that they could have an effective role in building the nation's knowledge society. UP was initially awarded to MCIT to improve the teaching capacities of IT trainers in the 600 MCIT-sponsored IT clubs across Egypt's 26 provinces. However, Microsoft decided instead to distribute the funds to a few IT training institutions offering instructor training through IT clubs rather than going for a full-fledged nationwide diffusion of the model. The rationale was to perfect the Train-The-Trainer (TOT) program in a few locations and then diffuse it across the nation. The primary partnering training provider was the Regional Information Technology and Software Engineering Center (RITSEC), a quasi-governmental nonprofit organization that specializes in IT training. RITSEC was provided with funds to develop and implement the UP TOT program in a number of IT clubs acting as hubs and serving different surrounding areas. Table 2 provides an overview of the UP program in Egypt.

Project	Grantee	Partner	Location
Train the Trainer Program	RITSEC	MCIT	Kafr El Sheik, Damietta, Sharkeya Assiout, Sohag
	Virgitec (private training provider)	ICA	Aswan
Small and Medium-Sized Enterprise Training	RITSEC and Vitgitec	ICS	Maadi, Ein Shams
Community Development	RITSEC	UNDP	Siwa
IT Club Portal	Link (Internet Service Provider)	MCIT	Nationwide
Women Professional Training	Future Generation Foundation	MCIT	Cairo

Table 2 – List of UP Projects and Partners in Egypt

6. Research Questions

The research intends to assess the role played by different technology access centers in diffusing ICT awareness within the local community and their implications on socioeconomic development. The research questions and issues addressed include

how valuable and effective ICT can be in making a difference at the local level? What are the skills required aside from mastering basic ICT tools? Is the knowledge content required available online? How effective and important are the culture and value elements of the community? What is the extent of the degree of access and scalability to ICT at the local level? What is the degree of importance of the English language proficiency with regard to understanding ICT? How economically sustainable is the model of community development and community access centers?

7. Research Methodology

The paper addresses the research questions mentioned above in light of the compilation of the findings of a number of research studies that were conducted over the last decade in Egypt on the experiences of community development centers. The projects covered include TACC, IT clubs and the UP program. It important to note that all initial research studies conducted used empirical research techniques addressing the role of different models of community development centers in diffusing ICT awareness for developmental objectives. The researches mainly included field studies conducted in different provinces with a focus on those who had established community development centers and experienced the UP program. The research studies covered 10 of Egypt's 26 provinces (38%) including Cairo, Giza, Sharkeya, Aswan, Mansoura, Alexandria, Damietta, Kafr El-Sheikh, Fayoum and Luxor. The field studies used a number of constructed and tested survey instruments on a sample of 51 community development center managers and 310 centers users. The response rates were 42 managers (82%) and 247 users (80%) respectively. Other interviews were conducted with key stakeholders including partners as well as TACC, IT clubs and UP projects staff and facilitators to get different views and insights. The selection of the locations reflected all socioeconomic levels in the society. The instruments used in the initial research studies were available in both English and Arabic to overcome one of the local barriers and deterrents to ICT diffusion which is the English language proficiency.

8. Analysis of Findings

The major research findings of the research studies relate to management and organizational issues as well as operational issues. The overall analysis of the findings indicated that the experience to date is extremely progressive and effective with various implications on the local community. The inputs of the three initiatives studied, TACC, IT clubs and UP, indicated the complementarity these efforts demonstrate in diffusing ICT awareness, usage and their respective implications on the local community, Table 3 demonstrates the major research findings based on the outcome of the three research studies.

8.1 Management and Organizational Issues

The collective findings of the three research studies indicated similar results. For example, based on the experience of UP, it was important to focus on human capacities in the form of trainers and not on community centers which proved to be an effective strategy. This was coupled with continuous monitoring and evaluation of the outcome of the training provided at the local level and its value proposition to the local community. From a strategy point of view, improving the capacity of local trainers was an invaluable factor for the success of the UP model with an emphasis on outcome assessment rather than on the volume of trainers trained.

Management and Organizational Issues	Operational Issues
– Focusing on human capacities in the form of trainers and not on community centers proved to be an effective strategy – Formulating regular monitoring and evaluation mechanisms is important to assess the implications of community development centers – Management responsibility and accountability should be shared by different stakeholders involved with representation at the local level – Monitoring the implementation process is vital in rendering ICT diffusion effective – Integrating IT training and community development partners is a success factor – Vitality to identify partners with expertise in both IT and community development	– Role of community development centers in catering for local needs – Revisiting the expansion strategy of different community development centers models – Lack of integrated management and entrepreneurial capacities when it comes to handling community development centers management – Addressing the needs for specific local segments such as youth, women, members of the communities with disabilities is vital – IT training is important however it needs to be coupled with infrastructure deployment to diffuse IT usage in different local organizations – Language proficiency is a vital issue and IT services should be offered in both English and Arabic

Table 3 – Major Research Studies Findings

From a management point of view, one of the challenges faced was the undertaking of the responsibility of TACC, IT clubs and UP. Options available included either MCIT as the government entity or RITSEC and Microsoft respectively handles the management process with pros and cons for each scenario. However, Microsoft and RITSEC would have then learned little about how people in underserved communities acquired IT skills and applied them to their daily lives, if MCIT took charge of management and only sent periodic reports on project achievements. Therefore, the alternative approach was taking charge of project management which in fact resulted in a variety of benefits for RITSEC and Microsoft knowing what worked, what needed to be adapted and what needed to be done to render ICT diffusion as effective and learning from their experiences for future implementations in similar contexts.

Another challenge that faced all three initiatives, TACC, IT clubs and UP, was to identify partners with expertise in both IT and community development and not just one of the two elements which was the case for most potential and available partners at the local level. For example, the staff of the Integrated Care Society (ICS) and that of the Institute of Cultural affairs (ICA) in the UP program had great enthusiasm for IT training but professed little knowledge about them and appeared satisfied with leaving it to the IT trainers. Thus, there was a need to find ways to bring together management and staff of these organizations to fully explore how they can better leverage development and IT knowledge and expertise in a truly integrative fashion. This situation was also faced by TACC since the local partners in Sharkeya were mainly acquainted with developmental objectives with limited experience in IT project management and implementations again needing further integration between IT deployment and developmental activities.

Finally, with respect to growing recognition among the community, all three research studies showed positive impact of ICT on individuals and communities in different ways and levels indicating the potentials that could be explored when the level of maturity of ICT deployment takes place. Findings indicated there is still a long way before the role of ICT is well diffused and institutionalized among the local community.

8.2 Operational Issues

The findings of the research studies demonstrated the need to handle a number of operational issues including the role of community centers in catering for local needs; revisiting the expansion strategy of different community development centers models such as TACC and IT clubs; lack of integrated management and entrepreneurial capacities when it comes to handling community development centers; as well as addressing the needs for specific local segments such as youth, women, and members of the communities with disabilities.

With respect UP, there is no doubt that IT training met an important need and that is to increase ICT awareness and learning among the local community. In fact, that became more important for building local certified instructors at the local level. As for TACC, community development centers helped create job opportunities, promoted job rotations based on acquired ICT skills as well as contributed in improving benefits and income levels. These efforts were realized through TACC activities in collaboration with local NGOs and civil society organizations. With respect to the viability of the MCIT expansion strategy with regard to local community development centers, the findings indicated that although MCIT provided initial start-up funding and infrastructure deployment, there is a need for regular upgrades and subsequent funding is usually channeled to new centers indicating the need to develop a sustainable model with different stakeholders playing different though complementing roles.

With respect to integration of managerial and entrepreneurial skills for centers managers; experience indicated that the training, selection and recruitment process needs to be revisited. That kind of blended managers is highly needed to promote and enhance the visibility of community development centers. Moreover, there is a need to fostering outreach mechanisms that can help in generating more innovative and creative approaches to effectively linking IT skills to individual and community needs. With respect to catering for specific local community segments such as youth, women and individuals with disabilities, TACC findings indicated that such segments are well served through the implications of ICT on their socioeconomic status. In that respect, there were a number of cases in the agricultural sector that showed how ICT had changed lives including resources allocation as well as improvements in the productivity and the exposure to different tools and techniques and more importantly to a wealth of knowledge on a variety of issues related to agriculture. TACC has also demonstrated its importance to the business sector with an emphasis on SMEs and the quality and variety of services offered to the local community especially when ICT services were offered in bilingual formats in English and Arabic.

9. Lessons Learnt

Community development centers models in the context of Egypt play an important role in diffusion ICT at the local community level. TACC and IT clubs offer different services from training programs to Internet Cafés. Their continuous diffusion and spread across the local community will have increasing implications in the years to come. The collaboration between the private sector, the public sector and the civil society is increasingly becoming vital in rendering community development projects sustainable and successful. However, the issue of creating a critical mass of users at different levels and across different segments as well as socioeconomic levels in the community remains a challenge that needs to be addressed.

The diffusion of community development centers served different purposes for different groups of people. While the Internet Café was more popular among the youth, IT training programs were more popular among adults and learning new IT tools and techniques were envisioned by mid-career men and women as a vehicle to get promoted or an opportunity that could enable better employment options. However, one of the drawbacks was the fact that all human capacities acquiring new IT skills were mainly opting for job opportunities in one of the major cities limiting the local cities and towns from retaining the much needed IT skills. TACC and IT clubs were hosted in a variety of locations either government entities, NGOs, schools or community centers. These facilities collectively were established as early as the 1950s and as recent as the last quarter in 2007 with regular updates of the infrastructure given the allocated resources whether human, financial and/or technological. Irrespective of the location, the most important factor was the integration between IT roles and capacities with developmental objectives coupled with a vision that reflects entrepreneurial themes and addresses sustainable solutions.

Among the lessons learnt was the fact that spreading awareness and promotional campaigns represented an important platform for training and diffusion. Awareness among the community was an integral element so that critical masses are built and that community segments would be speaking the same language in terms of IT deployment and utilization. Management and business skills should be integral to IT training to relate it to what people do in their lives and to measure the implications of IT usage on their business and socioeconomic progress. The role of IT should also be integrate at the local level with SMEs to assess the implications it can have on the small enterprise as well as on the local household. IT, in that respect, could be viewed as a platform to help start and manage ones business with the development of skills such as business plan development, budgeting, marketing, promotion, and feasibility studies.

The experience of community development centers in Egypt draws a number of lessons to be learnt that could be useful in future implementations for similar projects that capitalize on IT for socioeconomic development in the context of developing nations and with similar environments. Following is a summary of the lessons learnt:

- Importance of participatory needs assessment to help identify human capacity requirements for the local communities
- Community development centers should have a local champion with a vision to help make a difference
- Local collaboration between different stakeholders is vital to pool resources, coordinate activities and exchange experiences
- Identifying opportunities for socioeconomic development using ICT is a critical success factor
- Human capacities development is a continuous lifelong learning process
- Monitoring and evaluation should focus on outcome assessment rather than on volumes served
- Community development should lead the way and not IT deployment

10. Challenges Faced

There are a number of challenges that need to be addressed when it comes to community development centers and the role of IT in socioeconomic development and that includes:

- Preserving the culture and traditions of local communities, while empowering them to interact effectively with IT
- Increasing IT awareness and diffusion at affordable prices
- Securing sufficient financial resources to maintain sustainability and continuity
- Arabization and the provision of local electronic content is vital for learning, doing business and realizing a social impact
- Spreading IT usage and deployment among different segments and sectors in the community to realize concrete impacts on the community

11. Conclusion

The development gains from investing in ICT production are greater than for investment in ICT consumption. Hence, building the ICT infrastructure is not enough as a prerequisite for development, but rather there needs to be a more involved and engaged role in the development process at large and in the diversity of projects and activities in specific that should be reflected in availing concrete benefits and opportunities to the local communities including job creation, income generation and improvement, skills and capacities development, community empowerment and gender equality. Today, there are various opportunities to promote global participation through the digital economy. Emerging ICT is transforming the way people live, learn and work irrespective of time or distance barriers. Nations that succeed in harnessing these potentials can look forward to greatly expand their economic growth and improve their social welfare whereas developing nations have a unique opportunity to address their development goals such as poverty reduction, healthcare, and education far more effectively than before.

The experience covered addressing the issue of using ICT for socioeconomic development of underprivileged communities in Egypt demonstrated the potentials untapped for these communities and the role that ICT can play in digital inclusion. The experiences of TACC, IT clubs and UP, although still limited in scale, showed the potentials ICT can play especially in remote locations as well as with respect to segments in the society such as youth, women and individuals with disabilities. The different projects demonstrated the need to formulate long-term planning and the vision to utilize IT trained human capacities to help improve business and socioeconomic development at the local level representing some of the major challenges not only for Egypt but also for different developing nations. Moreover, the projects demonstrated the need for further research studies to provide valuable directions and suggestions for improved planning, implementation and institutionalization of ICT at the community level.

ICT is no silver bullet for the problems and challenges of the developing world. However, if developing nations fail to ensure that all nations have the opportunity to participate fully in the network economy, there is the risk that the divide between nations will grow. The challenge is to transform the digital divide into a digital opportunity through a concrete and coordinated effort with the participation of all stakeholders in the society. It is believed that such transformation can only be

achieved through the realization of a set of activities that includes; adopting coherent strategies to build the national information infrastructure, expanded human capacity, community initiatives and indigenous entrepreneurship, and enable a pro-competitive policy and regulatory environment. These activities could be achieved through the aggressive diffusion and macro-level penetration of concepts such TACC, IT clubs and UP in different unprivileged segments of the society.

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