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Deepening Understanding and Addressing Key Challenges

Essay by Clotilde Fonseca, September 11, 2009 in response to A Dialogue on ICTs, Human Development, Growth, and Poverty Reduction

The analysis of the ways in which digital technologies can further change and stimulate human development is today as critical as ever. Digital technologies have become "infrastructural" technologies (Carr 2003). Like electricity and transportation in the past, digital technologies are a fundamental platform and resource in modern production systems as well as in job generation and human interaction processes. They are, therefore, essential to economic growth and to contemporary forms of human development. They impact quality of life, access to knowledge, work and employment, economic productivity and power relationships. Their real value, however, no longer lies in merely having access to them. The key element lies in the capacity of individuals, groups and organizations to use them productively and creatively, that is, in ways in which they can add value, effectiveness and meaning. Materializing their potential and overcoming the obstacles to obtain it, is not, however, an easy matter. There are important challenges still to be addressed and new possibilities still to be explored. Among them are the following:

1. The Need for More Holistic Policy and Implementation Approaches

The definition and implementation of ICT policies in developing countries has been strongly technocentric. This approach generally reveals certain limitations in the understanding of the nature and potential these technologic. Many of these initiatives keep "looking at the future through the rear view mirror," as McLuhan would say. Nobody would deny that, as the WSIS Plan of Action indicates, "infrastructure is central in achieving the goal of digital inclusion." Today, it is evident, however, that access to infrastructure is simply not enough. This approach has led to limitations in impact effectiveness. As is evident today, infrastructure and access have to be intimately intertwined with technical understanding and knowledge, with capacity building and with the identification of the needs and the applications required by citizens and institutions. The result of UN studies (CEPAL 2007, WSIS e-Lac Monitoring) clearly recommend the structuring of plans that are more focused on the needs of the beneficiaries and the actors of development processes. They stress the need for more "holistic" approaches which can address in unison issues of access, capacity building, applications and policies. They are not ends in themselves, but means to a development end which, clearly, need to be focused in people. Implementation initiatives of this nature need to be better understood and generalized. Further work in this area is key.

2. Analog vs. Digital: The risk of limited national visions and plans

A better understanding of the real power of the digital is still a crucial matter. The "digital visions" need to be appropriated by individuals, communities, change agents, leaders and policy makers. The "digital gap" is no longer only a gap of an individual or a group as is frequently portrayed. National visions, or the lack of them, also strongly impact what citizens can expect and what their future options will be. More highly developed nations have addressed not only e-inclusion models based on clear knowledge economy and knowledge society plans, but also promote e-learning, e-government, e-health, e-procurement, e-industry, e-commerce, e-business, and e-citizenship within the framework of an advanced digital concept and understanding. Widespread citizen access to sophisticated phones and mobile devices as well

as to netbooks, laptops and other digitally enabled types of equipment are making ubiquitous communication and services available in highly complex and innovative contexts.

In most developing nations, on the other hand, the understanding of digital phenomena is still precarious. Many of the previsions and services developed are, deep down, analogue in concept and in nature. ICTs are frequently introduced or inserted as an "add on," not as a powerful resource which allows to re-think or reconsider processes and approaches. Access to the Internet is frequently considered the one and only concern. If the visions with which developing countries make their investments are outdated or conceptually limited, the results of those investments will inevitably also be extremely restricted. Economic growth and human development will, therefore, continue to lag behind. We need to overcome the asymmetries in power, but we will not be able to attain that, unless we overcome the asymmetries in knowledge, understanding and vision. This is still a major challenge. An analysis of post-WSIS national plans makes this evident and reveals the type of work that still needs to be accomplished.

3. Overcoming the cognitive and skills divide & investing in the young

Investing in the young is a fundamental policy in order to bring foster human development and generate economic growth. New generations have a great capacity and desire to develop the skills and competencies for the digital age. In this process, it is critical to create technology-enhanced basic education programs focused on the development of new skills and competencies, not only on so called "computer literacy" approaches oriented to the command of certain software products and applications. In order to bridge the digital divide, it is necessary to address at the same time the cognitive divide. Technology fluency needs to be promoted in a context of learning experiences that stimulate creativity, innovation and intellectual capacities. The knowledge society, as we all know, is an intellectually challenging and skills-intensive society.

Major investments need to be made in order to generate more innovative and more powerful learning experiences in both formal and non-formal education. It is therefore essential to pay attention to the new learning ecologies (Brown, 1999) that recent technological developments make possible. We need to overcome the frequent misconception that access to information automatically implies access to knowledge. Knowledge sharing and knowledge appropriation involves complex mental and symbolic processes that need to be stimulated in new generations. Twenty-first century skills need to be better understood, redefined and addressed in order to respond to the realities of the new generations of youth in the developing world. This is a fundamental area for further research and investment.

4. Capturing the potential of low-cost computers and mobile devices

One of the great achievements of the last decade has been the substantial reduction in the cost of laptops and other mobile devices. This is no doubt the result of Negroponte's contribution to the design and distribution of low cost laptops and devices that better respond to the needs of low income countries and groups. Negroponte challenged the industry and started a movement that has made it possible for low income citizens and countries to consider the potential of 1 to 1 computing. This major change has opened great opportunities for new ways of learning and for the creation of new learning networks among children and youth from marginalized communities. A great variety of new technologies and devices is now available. The great challenge is now to create the learning platform, content, and approaches that can allow us to profit from this development in sound, meaningful and innovative ways. There is much scientific knowledge about learning that needs to inform these new approaches. There is much research that needs to be conducted about the real potential of cell phones in formal and non-formal contexts. It is obvious that governments are willing to invest in these technologies for their own education systems. New learning approaches, experiences and resources need to be

developed to bridge the gap between the availability of devices and actual work in schools and community contexts. This is another area in which further research and development needs to be supported.

5. Citizen and Social Networks and the Power of Interactivity

Recent technological developments have also made possible growing levels of interactivity and the rise of social media and networking. Web 2.0 offers a powerful platform for new forms of learning and business. The diffusion of mobiles, netbooks, laptops and other devices has allowed instant communication, social and political participation in many societies. Both positive and negative developments have been observed as a result of this new phenomena associated to the so-called social or civic layer of the Internet. The initial interest that international cooperation agencies had in this topic seems to have somehow waded. The use of these new technological and social resources to build citizenship through pro-social and collective efficacy initiatives is a crucial task. More in-depth research and development in this area is needed.

6. Indicators of Impact and Development of Standards

Special attention needs to be paid to the indicators being used to show achievements in ICT diffusion and impact. Many of them are extremely limited and frequently even misleading. For example, the number of students per computer, commonly accepted as an access indicator within education systems, says nothing about the number of students actually having access, or about the time they are allocated to work with them, or even less about the type of learning or interaction experience provided. Likewise, the number of schools connected to the Internet also frequently used to study the status of connectivity in countries is no doubt an interesting piece of data. It says nothing, however, about the type of use given to that Internet connection or about the impact it has on school administration or on the learning experiences of teachers, students or community.

The same thing can be said about indicators of use generally associated to telecenters or community access points. Information on key qualitative aspects about access, appropriation and use are lacking. More refined and perceptive instruments are needed to identify, analyze and evaluate impact. Better quality indicators as well as the creation of standards for the development of learning programs need to be put in place in order to support the work of policy makers, institutions, observatories, researchers and organizations in the field. This is another area in which thoughtful work and research are necessary.

In summary, the challenges are still great. Digital technologies continue to be considered valuable accelerators of development. They still need to be better understood and more widely applied to development communities and processes. They no doubt have a fundamental role in economic growth and in human development. That role, however, will always be linked to the vision that societies have about them and to their capacity to stimulate their citizen’s intellectual, productive and creative skills as well as the competencies required to profit from the contributions that these technologies have made available.

Clotilde Fonseca is a Founding Director of the Costa Rican Program of Educational Informatics created in 1988 in Costa Rica by the Omar Dengo Foundation and the Ministry of Public Education, a program that has reached over one and half million children and teachers during its more than two decades of work. She has been Executive Director of the Omar Dengo Foundation from its founding in 1987 to 1994 and from 1996 to present.

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