Bridging the Digital Divide

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Installing computers and connections in underdeveloped communities is only part of what is needed to put information and communications technology to use for socio-ecoomic development. An understanding of grassroots realities, pooling of resources, and a favorable regulatory system are among the many elements necessary in an effective approach to the digital divide.

Information and communications technology (ICT) is a key weapon in the war against world poverty. When used effectively, it offers huge potential to empower people in developing countries and disadvantaged communities to overcome development obstacles, address the most important social problems they face, and strengthen communities, democratic institutions, a free press, and local economies. Yet a digital divide separates those who can access and use ICT to gain these benefits, and those who do not have access to technology or cannot use it for one reason or another. There are a wide range of projects underway aimed at bringing ICT to people in developing countries. But in order for ICT to have a *real impact* on people's lives, it is crucial that development efforts go beyond computers and connections to ensure that people have *real access* to ICT so they can use it effectively to improve their lives.

The digital divide between countries is usually measured in terms of the number of telephones, computers, and Internet users. Between groups of people within countries, it is usually measured in terms of race, gender, age, disability, location, and income. It is difficult to gain an overall understanding of the digital divide, the proposed solutions, and what is having a real impact, when there are multiple definitions of the problem, conflicting views on whether it is getting better or worse, and various opinions on the key factors affecting it.

Bridges.org. is an international non-profit organization based in Cape Town, South Africa. The organization promotes policies and laws that foster widespread ICT use, and works at the grassroots level to help people understand ICT and its practical utility. Bridges.org has seen that the

digital divide is growing around the world, despite the fact that all countries and all groups within countries, even the poorest, are increasing their access to and use of ICT. This is because people in ICT "have" countries and groups are increasing their access and use at an exponential rate. At the same time, ICT "have-nots" are increasingly excluded from jobs, participation in government processes, and public discourse on the issues that affect their lives, leaving them politically and economically powerless. Countries and communities face the threat of being left further behind if they do not address the growing digital divides. However, the infusion of ICT can intensify existing disparities. ICT alone is not enough to solve long-standing imbalances and can make inequalities worse if not applied wisely.

The digital divide is a complex problem, presenting both practical and policy challenges. It is also apparent that solutions that work in developed countries cannot simply be transplanted to developing country environments: solutions must be based on an understanding of local needs and conditions.

What is being done?

Governments, businesses, individuals, and organizations have studied the issues at stake in the digital divide and drafted a range of valuable reports—from statistical analyses to in-depth case studies. Most offer recommendations for tackling the problems, usually suggesting specific ground level initiatives and policy reforms. Many also cover the wider issues that impact on digital divides, such as e-commerce, information society, and international trade. Major international initiatives, such as the G-8's Digital Opportunity Task Force (DOT Force) and the World Summit on Information Society (WSIS), bring together leaders and decision-makers from around the world for a consultation process to determine the key factors and how to address them. Several organizations have undertaken "e-readiness" assessments to determine a country's readiness to integrate technology and e-commerce and establish a benchmark for regional comparison and public and private sector planning. Unfortunately, there is significant duplication of effort in these studies and recommendations, and too few of the suggestions are followed up in practice. There is a lot of talk, but not enough action.

Numerous on-the-ground initiatives are working to provide technology access and help put technology to use in underserved populations. There are an enormous number of efforts, ranging from projects that create public centers where poor people can use telephones and computers, to those that incorporate ICT in healthcare, to programs using innovative technology in small business applications. These efforts are driven by organizations that range from the smallest NGO working in remote areas—such as SchoolNet, Namibia's efforts to put computers in rural schools—to the largest multinational corporations, such as Hewlett Packard's $1 billion "E-Inclusion" initiative to promote hardware innovations suitable for developing country environments. Many initiatives address specific aspects of the range of issues, but too often they neglect related factors that limit their success. For example, too many community access projects providing computers and connections in rural locations do not become self-sustaining because local people do not use their services—often they have failed to address the role of the center in the local economy or the need for locally relevant content. There is a need for a holistic approach to cover the range of issues to create effective and sustainable uses for technology that are integrated into local society.

What more is needed? Real Access

Providing access to technology is critical, but it must be about more than just physical access. Computers and connections are insufficient if the technology is not used effectively because it is not affordable; people do not understand how to put it to use; people are discouraged from using it; or the local economy cannot sustain its use. ICT projects will only be widely successful in developing countries when all of the other components necessary for the effective integration of ICT into society are in place. Bridges.org calls this *real access* to ICT, and its work looks at twelve interrelated factors that determine whether ICT can be effectively used by people:

- **Physical access**: Is technology available and accessible to people and organizations?

• **Appropriate technology**: Is the available technology appropriate to local needs and conditions? What is the appropriate technology according to how people need and want to put technology to use?

• **Affordability**: Is technology affordable for people to use?

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• **Capacity**: Do people have the training and skills necessary for effective technology use? Do they understand how to use technology and its potential uses?

• **Relevant content**: Is locally relevant content available, especially in terms of language?

• **Integration**: Is technology use a burden to peoples' lives, or is it integrated into daily routines?

• **Socio-cultural factors**: Are people limited in their use of technology based on gender, race, or other socio-cultural factors?

• **Trust**: Do people have confidence in technology and understand the implications of the technology they use, for instance in terms of privacy, security, or cybercrime?

• **Legal and regulatory framework**: Do laws and regulations limit technology use? Are changes needed to create an environment that fosters its use?

• **Local economic environment**: Is there a local economic environment favorable to technology use? Is technology part of local economic development? What is needed to make it a part?

• **Macro-economic environment**: Is technology use limited by the macro-economic environment in the country or region, for example, in terms of deregulation, investment, and labor issues?

• **Political will**: Is there political will in government to do what is needed to enable the integration of technology throughout society, and public support for government decision-making?

Overall, a pooling of resources and experiences is needed. Dealing with the digital divide is beyond the scope of any single initiative. While it is important for organ-izations doing community ICT projects to meet the needs of their clients as comprehensively as possible, the issues at stake in international and domestic digital divides are huge, and organizations should cooperate to tackle problems collaboratively. Private sector programs and philanthropic efforts are vital too, although there is room for improvement.

For-profit programs are successfully expanding access to technology to increasingly larger groups, but often fail to adequately address the needs of the poorest countries, and the poor citizens within countries. In isolation they can exacerbate divisions within countries since privileged groups are more able to afford and use the technology. Donations and philanthropic programs have demonstrated the useful application of technology among underserved populations, but in many cases they have failed to produce sustainable, widely replicable models. The digital divide is not a new problem. We should learn from previous experience in fields such as economic development, technology transfer, and sustainable development. Many of these ongoing programs have an impact on the digital divide, and coordination will benefit everyone.

Getting government policy right is also critical

Governments can play a fundamental role in creating an environment that will foster technology use and encourage investment in ICT infrastructure, development, and a skilled workforce. Government action is also important in spreading the benefits of technology throughout society, and governments have the power and mandate to balance the needs of their citizens for long-term economic growth and social prosperity. However, translating a vision into

practical steps that fit the local context is not a simple matter. Leaders need to have a realistic appreciation for what ICT can—and cannot— do for their countries and communities, and they must lead effectively and bolster public confidence in the path they take.

A range of projects are underway in developing countries to integrate ICT in a number of critical areas, including education, healthcare, government, trade, and small business support. However, these projects frequently encounter obstacles that directly or indirectly relate to the country's policy environment. Examples include projects that rely on technology or infrastructure use that may be limited by current laws or regulations, such as laws that control or ban the use of satellite, wireless, or Voice over Internet Protocol (VoIP) technologies. There are ICT projects that may be hindered by a general law or regulation, such as fiscal or customs policies that limit cross-border trade in computing technologies. A significant problem is projects working in a particular area, such as healthcare, where current laws or regulations impede ICT use, such as privacy and data protection laws governing the handling of electronic health data.

Many national leaders have embraced ICT and are ready to promote a legal and regulatory environment that will enable its widespread use. But often at the working level, government officials do not understand the implications of existing policies that may hinder ICT use, nor the changes they need to make to create a more favorable environment. Although the development aid industry generates a tremendous volume of reports, advice, and analyses aimed at helping developing countries in the policy area, developing country governments frequently say that such recommendations do not show sufficient understanding of local needs and conditions.

Some governments have subscribed to e-strategies promulgated by outsiders, but at a practical level they lack the political will to drive change because they do not enjoy widespread public support for an ICT-focused approach. Often this is because government officials fail to engage stakeholders in framing the e-strategies, so they do not have public buy-in for their long-term plans. In some cases the government has partnered with the country's business and civil society sectors to promote ICT-enabled development at the ground level, but the various stakeholder groups lack the experience and resources to give effective input.

To cross the digital divide and put ICT to effective use to improve people's lives, countries and communities must be "e-ready" in terms of infrastructure, access, training, and a legal and regulatory framework that will foster ICT use. If the digital divide is to be narrowed, these issues must be addressed in a coherent, achievable strategy that is tailored to meet local needs.

The opinions expressed in this article are those of the author and do not necessarily reflect the views or policies of the U.S. government.

Evolving Internet Facts

Continent	Users (k)	Users per10k inhabitants	PCs per 100 inhabitants
Africa	8,941.7	111.25	1.26
Americas	207,579.8	2,441.76	28.98
Asia	211,392.8	584.75	4.43
Europe	167,883.4	2,099.69	21.14
Oceania	10,571.4	3,333.60	42.29
World	606,369.1	994.01	9.87

(K=1,000)

Source: Global Internet Access by Continent, 2002, International Telecommunications Union