

Spanning the Digital Divide: Understanding and Tackling the Issues

Executive Summary

1. Introduction

There is a great deal of hype and fervour about the digital divide. It is difficult to gain an overall understanding of the problem, the different approaches to solutions, and what is really making a difference when there are multiple definitions of the "digital divide," conflicting reports of whether it is growing or shrinking, and a range of opinions on the key factors affecting it. What is clear is that the disparities between the "haves" and the "have-nots" is growing, and the potential impact on society -- whether good or bad -- will be exacerbated by technology. In fact, the digital divide is a complex problem that manifests itself in different ways in different countries. It presents both practical and policy challenges. Moreover, it is apparent that solutions which work in developed countries cannot simply be transplanted to developing country environments: solutions must be based on an understanding of local needs and conditions.

This report reviews some of the basic facts about ICT access and use, and provides an extensive list of resources for further information. It goes on to examine the major approaches to the problems, describing the various on-the-ground initiatives and considering government policies that play a role. It reflects on what is working best and what is failing -- and why. Finally, it illustrates the key elements necessary for integrating technology into society in an effective, sustainable way so that people can put technology to use to improve their lives: what we call "*real access*" to technology.

2. International and Domestic Digital Divides

Real disparities exist in access to and use of information and communications technology (ICT) between countries (the "international digital divide") and between groups within countries (the "domestic digital divide"). There is a wealth of real and anecdotal evidence to support this statement. The volume of statistics is impressive and persuasive: "In the entire continent of Africa, there are a mere 14 million phone lines -- fewer than in either Manhattan or Tokyo. Wealthy nations comprise some 16 per cent of the world's population, but command 90 per cent of Internet host computers. Of all the Internet users worldwide, 60 per cent reside in North America, where a mere five per cent of the world's population reside"(Nkrumah). "One in two Americans is online, compared with only one in 250 Africans. In Bangladesh a computer costs the equivalent of eight years average pay" (The Economist). Underlying trends are often lost in the heated debate over how to define the problem, but a pattern emerges from within the statistics.

There is an overall trend of growing ICT disparities between and within countries:

- All countries, even the poorest, are increasing their access to and use of ICT. But the "information have" countries are increasing their access and use at such an exponential rate that, *in effect*, the divide between countries is actually growing.
- Within countries, all groups, even the poorest, are also increasing their access to and use of ICT. But within countries the "information haves" are increasing access and use at such an exponential rate that, *in effect*, the division within countries is also actually growing.

In highly developed countries a different process *appears* to be occurring, but upon further examination, it is the same pattern of growing ICT disparities:

- In certain rich countries (such as the US and Finland), saturation points for baseline technologies such as PCs have almost been reached for some groups. Therefore, since the underserved are increasing baseline technology access and use, the gap between the information "haves" and "have-nots" *appears* to be closing.
- A closer look shows that even when the gap for a particular technology appears to shrink, underlying disparities remain. When new technologies are introduced, the actual divide is re-illustrated because only the "information haves" can afford to acquire, and have the skills to use, the technology quickly, and they derive exponential benefits.

Underneath the apparent widening and narrowing of the ICT divides, the underlying trend is that privileged groups acquire and use technology more effectively, and because the technology benefits them in an exponential way, they become even more privileged.

- The infusion of ICT into a country paints the existing landscape of poverty, discrimination, and division onto the new canvas of technology use. Because ICT can reward those who know how to use it with increased income and cultural and political advantages, the resulting digital divide shows up in increasingly stark contrast.
- Therefore, ICT disparities usually exacerbate existing disparities based on location (such as urban-rural), gender, ethnicity, physical disability, age, and, especially, income level, and between "rich" and "poor" countries.

The digital divide is not a single thing, but a complicated patchwork of varying levels of ICT access, basic ICT usage, and ICT applications among countries and peoples.

- Each country and group has a unique profile for how technology is used, or not. While a few countries rate low on many of the metrics for ICT use and readiness, most have a mixture of positive and negative ratings.
- Divisions can only be effectively tackled by looking at these specific deterrents; gross measurements of ICT usage available in most reports on the digital divide do not provide a coherent plan of action to address the inequities

they describe.

- E-readiness assessments are a valuable tool with which to gain this more informed, region-specific understanding, and to develop an action plan.

Generally, there are three main approaches to the problems of the digital divide: studies and recommendations, on-the-ground efforts, and policy reform.

3. Studies and Recommendations

Governments, businesses, individuals, and organizations have studied the issues at stake in the digital divide and drafted a range of valuable reports -- from statistical analysis 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 G8's Digital Opportunity Task Force (DOT Force) have brought 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[1], and too few of the suggestions are followed up in practice.** There is a lot of talk, but not enough action.

4. On-the-ground Efforts to Bridge the Digital Divide

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 telecentres to telemedicine to training to innovative business applications, and they are driven by the smallest NGO in Myanmar, Burma to the largest multinational corporation, such as Hewlett Packard's US\$1 billion "E-Inclusion" initiative.[2]

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 telecentres 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 centre 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.

Access to technology must mean more than just computers and connections: Bridges.org's *real access* criteria

We looked at a large selection of on-the-ground initiatives and examined what

works best and what fails -- and why. 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, or they are discouraged from using it; or the local economy cannot sustain its use.

We have set out the following issues which we believe are the determining factors in whether or not people have "*real access*" to technology; i.e. access that goes beyond just physical access and makes it possible for people to use technology effectively to improve their lives.

- **Physical access.** Is technology available and physically accessible?
- **Appropriate technology.** What is the appropriate technology according to local conditions, and how people need and want to put technology to use?
- **Affordability.** Is technology access affordable for people to use?
- **Capacity.** Do people understand how to use technology and its potential uses?
- **Relevant content.** Is there locally relevant content, especially in terms of language?
- **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 and understand the implications of the technology they use, for instance in terms of privacy, security, or cybercrime?
- **Legal and regulatory framework.** How do laws and regulations affect technology use and what changes are needed to create an environment that fosters its use?
- **Local economic environment.** Is there a local economy that can and will sustain technology use?
- **Macro-economic environment.** Is national economic policy conducive to widespread technology use, for example, in terms of transparency, deregulation, investment, and labour issues?
- **Political will.** Is there political will in government to do what is needed to enable the integration of technology throughout society?

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 organizations 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 are vital. 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.

Donation and other philanthropic programs are necessary. 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 digital divides, and coordination will benefit both sides.

5. Policy and Digital Divides

National governments can play a fundamental role in creating an environment that will foster technology use and encourage national and international 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.

Real access to ICT is affected by nearly all aspects of policy, ranging from digital signatures to collective bargaining and general macro-economic policies, which places "the digital divide" debate in a wider context. Relevant fields of policy include:

- **ICT Infrastructure and Supporting Systems.** Policies that affect basic ICT infrastructure and its productive use in society, notably: Telecommunications Licensing and Regulation, Telecommunications Privatisation, Spectrum Allocation, Internet Domain Management, Banking and Financial Sector, Standards Setting, Customs Standardization.
- **Trust.** Policies that effect business, government, and consumer trust towards ICT and each other online, including: Electronic Signatures, Data Security, Cybercrime, Privacy, Intellectual Property, Regulation of Content, Consumer Protection.
- **Capacity Building.** Policies that build the necessary capacity to use ICT effectively, including Curriculum and Materials, Technical Education.
- **Taxation and Trade.** Taxation, tariffs and trade barriers, foreign direct investment.
- **Employment and Labour.** Collective Bargaining and Other Labour Policies, Brain Drain Counter-Measures.
- **Technology Diffusion.** Universal Service, E-Government, Private Sector and Civil Society ICT Use.
- **General Government Environment.** Government Structure (e.g. democracy, transparency, independence of judiciary and regulatory authorities),

Discrimination Policy.

Other major stakeholders and actors in the policy-making process include: a wide range of organizations and companies, including, international organizations (e.g. UN, UNCITRAL, ITU, World Bank, WTO, ICANN, W3C), consumer rights organizations (e.g. Consumers International, TransAtlantic Consumer Dialogue), regional Internet registries (RIPE, ARIN, APNIC), private businesses (e.g. Telecom companies, Internet service providers, Financial sector companies, Certification Companies), business forums (e.g. Alliance for Global Business, International Chamber of Commerce), and online rights organizations (e.g. Electronic Frontier Foundation, Privacy International, Global Internet Liberty Campaign).

The G8's DOT Force initiative is by far the largest, most clearly and comprehensively targeted at the digital divide, and most likely to impact on government policy.

Policy directions must be adapted to the local context. Often basic policy principles are agreed at the international level, or policies are transferred from highly industrialized countries to developing and emerging countries. The local context -- in terms of local needs and skills and local political issues -- has a significant impact on whether generally accepted policy reforms are actually adopted and put into practice. Even national governments that have the political will to drive change, often struggle with the process of putting policies into effect. Policies and processes that are grounded in real life experience, in local circumstances, based on real user needs, and addressing the multiple issues of *real access* to ICT have been more effective than those that have not.

6. Conclusions

There are real disparities between countries and socio-economic groups that are benefiting from information technologies, and those that are not. While information technology use is growing around the world, the disparities are also growing. Whether or not one chooses to label these disparities as digital divides is immaterial: the disparities remain.

There is a disconnect between on-the-ground efforts and policy-making processes. Both ground-level initiatives and policy reform are necessary, and information flow between them will make both approaches more effective. Many ground-level programs are limited by the lack of a supportive legal and policy framework in the countries where they work. Most policy-making related to ICT issues would benefit from a clearer understanding of how policy affects the technology end user. Unfortunately, there are few models that effectively bring the two together. Government, business, society and current and future technology users must understand and acknowledge each other's position and responsibilities.

At the macro-level, the digital divide could be described as a failure at three levels.

- **A failure of development initiatives.** Development initiatives^[3] have been essential in providing basic access to underserved populations, but have failed to provide sustainable, replicable models for community ICT use, and often err with top-down approaches that are not grounded on the needs, interests, and participation of local residents. They would benefit from involving the private sector in an effective way so that the results of their efforts are integrated into the local economy to ensure sustainability. They could also leverage their experiences gained on-the-ground to effect change in government policies or laws that hinder the effective implementation of their programs.
- **A failure of market forces.** The private sector has slowly spread technology to middle income groups, but on the whole has failed to see the developing world and underserved populations as valuable markets which require targeted products. ^[4]
- **A failure of the government.** Government policy has often tried to meet the short term demands of their constituencies, but failed to provide a coherent long term plan for prosperity, or hindered the efforts of development initiatives and the private sector to address ICT disparities.

All three failures need to be turned around if we are to bridge the divides with effective, practical applications of technology. Without entrepreneurship, and government policy encouraging and supporting equity, development initiatives face insurmountable tasks and no funding to finance them. Without basic electrical and telecommunications infrastructure programs and universal service initiatives by government, ICT companies will have little incentive to develop new products to meet the needs of people who cannot use or afford their existing services. And, government policies are useless without ground-level programs to take advantage of them.

A holistic approach which aims for *real access to technology* is needed. The 11 determining factors that we outlined above provide a roadmap to a digital divide approach aimed at integrating technology into society in an effective, sustainable way so that people can put it to use to improve their lives.

[1] Notably in the field of "e-readiness assessments." See *Comparison of E-Readiness Assessment Tools*, and *E-Readiness Assessment: Who is Doing What and Where*, bridges.org, March 2001, www.bridges.org.

[2] Annex 4 includes descriptions and references for over 100 initiatives that were analysed for the report.

[3] Whether by "development agencies" such as USAID, national governments, private sector donation or corporate responsibility programs

[4] There are examples of business approaches that have taken low-income markets seriously to develop appropriate products, and they are reaping the benefits and improving the lives of people in a tangible way: e.g. pre-paid wireless telephones, and micro-finance.

Source: <http://www.bridges.org/spanning/summary.htm>

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