Does the Internet Empower?
A Look at the Internet and
International Development

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There is no way to compare the Arab world before or after the net, of course it has made a huge difference, especially for the younger generations. The internet is a door to the outside world. If we cannot have the chance to travel and live abroad, at least through the net people have access to get in touch with the world through chat discussions. These discussions are making people in the Arab world more open minded. (Interview with Internet café manager in Zamalek, Cairo, May 2004)

Over 1 billion people subsist on less than a dollar a day, and nearly half the world's population on less than $2 a day. Twenty-seven percent of children under age five in the developing world are malnourished, and 20 million people have died of AIDS since 1986. If the Internet has a role to play in meeting those challenges, it needs to be elaborated. At the same time, if there are limits to that role, they need to be clarified as well. (Charles Kenny, 2006, p. viii.)

This new [communications] technology greatly facilitates the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formation and execution, and widen the range of opportunities for business and the poor. One of the greatest hardships endured by the poor, and by many others, who live in the poorest countries, is their sense of isolation. The new communication technologies promise to reduce that sense of isolation, and to open access to knowledge in ways unimaginable not long ago. (World Development Report, 1998/9, p. 9)

Left unchecked, the digital divide will increasingly add to the knowledge divide, the skill divide, the opportunity divide, the income divide, and the power divide. (Yunus, 2007, p. 193)

The quotes above provide a nutshell view of the challenges of international development and the place of the Internet within it. The Cairo Internet café manager and the World Development Report echo the optimism of the information

age. Scholars and policymakers who argue that the Internet provides a path towards hope have imagined an Internet-enabled world without poverty; a world where networked communications erase social status issues like race, gender, class; a world where change makes it possible for the marginal to have a voice. These images of equality, empowerment, and mobility are all facets of the perceived positive impacts of the Internet. On the more pessimistic side of the scholarly and policy spectrum, skeptics, as represented by Kenny's and Yunus' observations above, illuminate the contextual challenges in which Internet users, and potential Internet users, are mired. The un-level playing field into which the Internet is introduced creates the possibilities of a world where the gap between rich and poor ever widens; a world where cosmopolitan elites network, sharing business, education, and cultural opportunities, while the majority of the world's citizens can't even make a phone call; a world where the global economy offers new opportunities for already developed economies, while placing further at risk those countries at the bottom of the global economic pyramid. The pessimistic narratives of the Internet and its potential contribution to international development challenge the technology's cheerleaders with realities from the global community, as explored more completely below.

Aspects of the promises and the perils of the information age are present throughout the interdisciplinary literature on the Internet and development. Moreover, practitioners from heads of state to aid workers, corporate executives to community organizers, are interpreting and shaping the global information revolution and its meanings for international development. This chapter gives an overview of the major theories and agents of Internet-led development. Several key questions are at the core of this analysis: (1) Does the Internet empower? If so, whom, what, when, where, and how? (2) What is the digital divide, and what practices seem to be the best at narrowing it? (3) Is the Internet contributing to development – e.g. "making the lives of ordinary people better" (Collier, 2007, p. 12) and "closing the hope gap" (Queen Rania, speech at Intel Computer Clubhouse Opening, Hashem al-Shemali neighborhood, Amman Jordan, November 2004).

This chapter adopts an interdisciplinary, multi-regional case-study approach to the Internet and development. In the process it draws upon theories constructed by academics and practitioners who are working to make the future one less fractured by poverty and lack of opportunity. After providing an overview of theories of Internet-led development, this chapter analyzes several projects which illustrate facets of a complex development dance, including the Leland Initiative, a multi-million dollar effort by the United States Agency for International Development (USAID) to bridge the digital divide in Africa; Kiva, a global micro-financing scheme to channel individually contributed development dollars to people at the grassroots; and the Cisco Least Developed Countries Initiative, which aims to use global training through the Cisco Networking Academies to empower youth for the global economy. These projects were selected in order to illustrate global partnerships for development. The Leland Initiative illustrates a project constructed and

implemented by one of the world's largest international aid organizations. Kiva represents the role of non-governmental organizations (NGOs), both global and local, in using micro-finance to alleviate poverty. This organization especially demonstrates the phenomenal power of the Internet to foster people-to-people networks leveraged to promote the global good. The Cisco Least Developed Countries Initiative represents the private sector and public–private partnerships at work trying to leverage the knowledge economy into creating economic growth.

The ultimate conclusion of this analysis is that the Internet can be a tool for "creating an enabling environment for [some] people to enjoy long, healthy and creative lives." (UNDP, 1999, p. 1). The process through which this happens and for whom (and how many) is not automatic, nor transparent. Without the right context, agency, access, imagination, and bit of luck, poverty and lack of opportunity persist. One should also not be misled into thinking that empowerment means closing the gap between rich and poor, which, as indicators illustrate, continues to widen. As the United Nations Development Program (UNDP) observes, "the new rules of globalization – and the players writing them – focus on integrating global markets, neglecting the needs of people that markets cannot meet. The process is concentrating power and marginalizing the poor, both countries and people" (UNDP, 1999, p. 30). Nobel Peace Prize-winner Muhammad Yunus, banker to the poor, translates these inequalities into numbers when he observes that globalization has concentrated wealth in the hands of the few to the degree that "94 percent of world income goes to 40 percent of the people, while the other 60 percent must live on only 6 percent of world income" (Yunus, 2007, p. 3). Can the Internet help to craft a more equitable world? Ultimately, it is this question which those who practice Internet studies and development need to answer. This chapter seeks to provide at least an initial response.

Theories of Information Technology (IT) for Development – a Cross-Disciplinary Global Narrative

At least since the first critical reflections on the meaning of the invention of fire, thinkers have attempted to interpret the impact of new technologies on society. The community of scholars trying to make sense out of the Internet are thus preceded and superseded by a long chain of thoughts on the ways in which our tools shape our lives, and our lives shape our tools. This chapter limits itself to a concern with the meaning and implication of the Internet for international development. When first conceived as a tool for global change, the most common shorthand for the Internet and development was "global information infrastructure" (GII). The ideas behind this GII and its implications for the world community were presented by Vice President Albert Gore in 1994 at the International Telecommunications Union (ITU) meeting on international development in Brazil:

we now have at hand the technological breakthroughs and economic means to bring all the communities of the world together. We now can at last create a planetary information network that transmits messages and images with the speed of light from the largest city to the smallest village on every continent.

I am very proud to have the opportunity to address the first development conference of the ITU because the President of the United States and I believe that an essential prerequisite to sustainable development, for all members of the human family, is the creation of this network of networks . . .

. . . From these connections we will derive robust and sustainable economic progress, strong democracies, better solutions to global and local environmental challenges, improved health care, and – ultimately – a greater sense of shared stewardship of our small planet . . .

. . . The GII will not only be a metaphor for a functioning democracy, it will in fact promote the functioning of democracy by greatly enhancing the participation of citizens in decision-making. (Gore, 1994, pp. 1–2)

These bold promises were what drew me to the study of the Internet's global diffusion and impact. As a scholar of the politics of the developing world, and the Middle Eastern and North African portions of it in particular, I was curious to see if Gore's techno-deterministic outlook would prove prophetic. I had a sense that as Landes observed, "If we learn anything from the history of economic development, it is that culture makes all the difference" (Landes, 1999, p. 48). Put another way, "every society achieves a pattern to its politics, technology and culture" (Jordan, 1999, p. 2). Especially Gore's promise of Athenian-style democracy taking root worldwide, delivered and nurtured by global Internet connections, peaked my curiosity. Would authoritarian states, many of whom defend themselves with secret police and proactive ministries of information, wither away, only to be replaced by civically engaged citizens, armed with new media tools, defining their own visions of politics and empowerment? If given the freedom to decide on their own forms of accountable government, would Middle Easterners choose Athenian-style democracy? If the Internet diffused relatively evenly throughout the world (a big "if"), would the technology create sustainable livelihoods for the marginalized? For the past 10 years these questions have been my focus (Wheeler, 1998, 2000, 2001, 2002, 2003, 2004, 2005, 2008).

Optimistic theories of the Internet and development assume that changing the way we communicate has the potential to change the way we live, politically, economically, and socially. Al Gore's speech outlines an approach to these three types of development. He tells us that in political terms the Internet will spread democracy, and it will make cooperation between nations more likely. In terms of economic development, Gore tells us that the Internet will be a key element in promoting growth in both national and international economies. Socially, Gore explains that the network of networks will enable us to connect as a "human family" which will breed an enhanced sense of shared stewardship for our small planet, and for each other. Each of these three promises forms a litmus test for the Internet and development, as explored more completely below.

Politics of Internet and development

As a political scientist, the alpha and omega of my interest in the Internet as a tool for development is the following question, "does the Internet alter individual or institutional agency, and if so, how does this opportunity shape the power relations of any given context?" Typically, political scientists focus upon the state and its relationship with society, and studies of the Internet by political scientists are no exception. For example, Andrew Chadwick in his book *Internet Politics* observes, "The overriding question driving my account is this: is the Internet, by reconfiguring the relations between states and between citizens and states, causing fundamental shifts in patterns of governance?" (Chadwick, 2006, p. 1.) Chadwick also argues that in Western political contexts, "the Internet is now more heavily politicized than at any time in its short history" (Chadwick, p. 2). In the developing world, where the technology was slower to diffuse, and where most regimes police Internet traffic for signs of opposition, the main focus of studies on the Internet and political development "is on issues to effect democratic transition or secure rights and freedoms" for citizens (Abbott, 2001, p. 101).

Questions about whether or not the Internet will enhance individual agency or the powers of the state are particularly relevant in the developing world, since in most of these societies, political activism is stunted by the coercive capacities of the authoritarian state. Moreover, development specialists have stressed that economic growth is not likely without good governance. Thus scholars of the Internet and development in the global south have often focused upon the impact of the Internet on the politics of participation and inclusiveness, as well as upon issues of transparency and the rule of law. If good governance can be encouraged, then the likelihood of economic growth is also enhanced. The key question remains, "What role will the Internet play in this process?"

The United Nations Economic and Social Commission for Asia and the Pacific defines "good governance" as "participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law" (UNESCAP, n.d., p. 1).

Providing a linkage between good governance and development, Paula Dobriansky, then US Undersecretary of State for Global Affairs, observed in 2003 that:

> Practicing these principles of good and just governance results in a free and open society where people can pursue their hopes and dreams. This will facilitate the creation of robust and open economies, which are trusted by investors and financial institutions. (Dobriansky, 2003, p. 1)

Scholars and practitioners who study the Middle East have seen the Internet as a tool for promoting good governance and thus contributing to the development process. For example, Augustus Richard Norton observes that new media channels in Egypt mean "that growing civic pluralism in the Muslim world will result increasingly in organized demands for equitable treatment by the government"

(Norton, 1999, p. 27). Similarly, Marlyn Tadros claims, "the Internet has shifted power to access and present information from governments to people, which has given rise to hope, and fuel to the claim, that it is indeed a possible democratizing force" (Tadros, 2005, p. 175). In Saudi Arabia, according to Mamun Fandy,

> New technologies and new means of communication have provided opposition groups as well as the state with an intermediate space and a new means of disseminating information in a "virtual space" beyond their limited conceptual and physical spaces. But more for the opposition than for the state, the Internet and other media, such as fax machines, cellular phones, satellite dishes, and cassette tapes, provide a new space for airing grievances with minimal risk. (Fandy, 1999, p. 127)

In my own work on the Internet and political development in the Arab world, I have written about how the technology is enabling a new culture of discursive openness and an unprecedented degree of global engagement, at the same time that institutional arrangements in the Arab world have allowed relatively few opportunities for free and open political participation and expression. For example, in a study of 250 Internet café users in Cairo and Amman, I found the following illustrations of Internet users taking advantage of the potential democratizing capabilities of the Internet: engaging a global cyber-public in political debate; building networks of influence and opportunity beyond one's structural position (defined by nation, tribe, religion, class, gender); becoming accustomed to having opinions and wanting to share their ideas publicly; growing accustomed to exercising agency to create change in their circumstances; and openly challenging social norms online and offline, especially those which govern gender relations. All of these forms of experimentation illustrate ways in which the Internet precipitates civic engagement (Wheeler, 2006, 2007, 2008b). But the question remains, will the state be forced (or encouraged) to retreat? Or will it lash out, violently and repressively, to maintain the status quo? As Norton observes, "the post-independence Muslim state has proven remarkably durable and resistant to reform" (Norton, p. 21). I characterize this situation of Internet-emboldened public expression, continued state recalcitrance, and enhanced repression as "information without revolution."

A handful of scholars have asked about how the Internet will affect citizens' political life in East Asia (Huang, 1999; Abbott, 2001; Harwit & Clark, 2001; Hill, 2002; Lim, 2003; Hundley et al., 2003). For example, Merlyna Lim, writing about the development and impact of the Internet in Indonesia, observes,

> The ability of the Internet to facilitate communication and distribution of information has caused many to identify it as the "new technology of democracy" – as the principal means to enable the expansion of a newly emerging public sphere of political discourse and decision-making actively involving civil society. Yet despite the utopian perspectives on the impact of the Internet upon global society, the Internet, as a technology originating in the US but now existing all over the world is always localized. Its democratic potential is thus indeterminate and must be worked out in the context of local constellations of power. (Lim, 2003, p. 113)

Several scholars have offered more contextualized views of the political development potential of the Internet in Asia. David T. Hill, also writing on Indonesia, explains that the Internet "is proving [to be] a new medium for separatist and minority ethnic groups within the archipelago seeking self-determination or international recognition for their aspirations" (Hill, p. 26). Throughout his study, Hill shows how the Internet provides individuals "new strategic possibilities" and "how these new technological possibilities could exert international political leverage" (Hill, p. 26). Writing on the impact of the Internet in China, Xiguang Li, Qin Xuan and Randolph Kluver illustrate how the use of chat rooms "increases the ability of Chinese to bypass the traditional mechanisms of news selection on the part of the authorities, thus increasing their ability to think politically outside the parameters endorsed by the state" (Li, Xuan, & Kluver, 2003, p. 143). While these new capabilities awarded to IT-savvy citizens are important, studies have shown how the Internet is also an effective tool for surveillance (Lyon, p. 67). Prominent arrests of Chinese and Burmese dissidents for online opposition, for example, remind development specialists and local citizens that the Internet is open to multiple levels of empowerment, including strengthening the hand of the authoritarian state.

Claire Mercer's work is representative of a collective of scholars interested in political development and the Internet in Africa (Hundley et al., 2003; Mercer, 2004; Ibahrine, 2005; Muiruri, 2007; Wilson, 2007). Mercer examines the gap between the international development community's expectations for Internet-enabled democratic change and realities on the ground in Tanzania. She observes, "The international development community has recently focused attention on the potential role of ICTs [information and communication technologies] in promoting democratic development" (Mercer, 2004, p. 49). Aid specialists base their claims on the view that "ICTs will strengthen civil society by giving voice to the poor and marginalized, widening popular participation, and encouraging information-sharing and alliance-building" (Mercer, 2004, p. 49). Using case studies of NGO use of the Internet in Dar es Salaam and Arusha, however, Mercer claims that donor expectations for a democratic ICT effect are "likely to result in a case of misplaced optimism" (Mercer, 2004, p. 49). Her case studies reveal that ICT use by NGOs in Tanzania "has simply widened the gap between Tanzania's elite urbane NGO sector which engages in the debates of international development discourse, and the majority of small rural NGOs . . . which do not" (Mercer, 2004, p. 62). She notes, "this seems a somewhat ironic outcome, given the rhetoric of inclusivity and participation currently associated with ICTs" (Mercer, 2004, p. 62).

There are important parallels between Mercer's study of Internet-led development in Africa, and Lim's study of Indonesia. Lim argues that the Internet in Indonesia has undoubtedly "contributed a new space enabling the rise of civil society" (Lim, 2003, p. 125). But, talk is one thing, and action is another. Thus Lim probes further: "will these cyber-communities help create the civil institutions that constitute a more democratic political reality in Indonesia? Will resistance

identities emerging from these spaces become identity projects that lead Indonesia towards democratization?" (p. 125.) Her article ends with these questions, saying that an affirmative answer will require future evidence that cyber-activism actually "contributes to the . . . material and social support for a better future of the country" and its population (p. 126).

One of the few texts to provide comprehensive global perspectives on the relationships between the Internet and political development in authoritarian contexts is the work of Shanthi Kalathil and Taylor C. Boas (2003; see also Kedzie, 1997; Franda 2002). In their book *Open Networks, Closed Regimes*, Kalathil and Boas challenge the assumed link between the Internet and political development towards democracy. They challenge the notion that "ending authoritarian rule is simply a matter of wiring enough people" (Kalathil & Boas, 2003, p. 150). Instead, Kalathil and Boas argue that "the Internet is only a set of connections between computers" and as such, "it can have no impact apart from its use by human beings" (Kalathil & Boas, 2003, p. 2). Moreover, "assertions about the technology's political effects are usually made without consideration of the full national context in which the Internet operates in any given country. Hence, they fail to weigh politically challenging uses of the Internet against those that might reinforce authoritarian rule" (Kalathil & Boas, 2003, p. 2).

As the examples above illustrate, from East Asia to West Asia, and across Africa, the development community's expectations for an Internet-enabled democratic effect must be contextualized and balanced by the power relationships and institutions of any given context. Both power arrangements and institutions can act as a powerful buffer to technologically enhanced agency. Moreover, as the discussion of economic development below suggests, countries in Asia have shown that economic growth is possible without democratization. Especially Middle Eastern states have found this possibility encouraging. The governments of both Jordan and Egypt have looked to Asia, especially China and Singapore, for models of economic growth which do not require democratization. But, one of the key reasons for a more inclusive definition of development beyond just economic growth is that well-being is not about eliminating poverty alone. This is because human development and "the elimination of global poverty can never truly take place until the poor take their rightful place as fully empowered citizens of free societies" (Yunus, p. 199). Moreover, there is still convincing evidence that economic growth and human development are most common in democracies. According to one observer, "the proof is in the numbers: 42 of the 49 high human development countries on the UN Development Index are democracies. With just two exceptions, all of the world's richest countries have the world's most democratic regimes" (Dobriansky, 2003, p. 1). Regardless of whether or not the Internet helps to build democracy and economic growth worldwide, most scholars agree that the Internet "is expanding access to politically relevant information and offering citizens new possibilities for political learning and action world wide" (Bimber, 1998, p. 133).

Economics of Internet and development

In 1998 President Bill Clinton observed that "democracies are the outgrowth of democratic freedom and the creation of a middle class," and that "without the free flow of information, democracies simply cannot be built" (quoted in Kapstein & Marten, 1998, p. 8). We have seen in the section above how in the developing world, Internet access and freer flows of information do not necessarily build democracy. But what about the middle-class part of the argument? Will the Internet facilitate the economic empowerment of citizens in the developing world thus creating the conditions for their more active participation in political development? It has become common to talk of the twenty-first century as a time of "information revolution" and surely those living through this time, especially those living in advanced knowledge economies, have been fundamentally transformed. What is less well understood, according to Muhammad Yunus, "is the enormous potential of the new IT for transforming the status of the poorest people in the world" where Internet access is relatively new (Yunus, 2007, 187).

The narratives on the Internet and economic development are divided into two main camps, one optimistic and the other pessimistic. IT-led economic growth from the optimistic perspective is best characterized by the Okinawa consensus.

> The Okinawa consensus . . . can be summarized as follows: the Internet and related technologies present a significant opportunity for developing countries to improve their growth prospects. Indeed, the Internet may be a leapfrog technology – one that creates an opportunity for developing countries to catch up economically with the industrial world. (Kenny, 2006, p. 5)

Stated another way, from the optimist's perspective,

> The twenty-first century can be a century of shared prosperity . . . The global economy can be marked by a narrowing of the income gap between rich and poor countries, not because of a decline in incomes in the richer societies but because of a rapid catch-up by the poor. Shared prosperity would not only mean the end of massive and unnecessary suffering among those who are now trapped in extreme poverty but would also mean a safer and more democratic world as well. (Sachs, 2008, p. 205)

In this way, the Internet is said to speed processes of development because "leapfrogging" made possible by the technology "helps developing countries accelerate their pace of development or skip stages of development" (Singh, 1999, p. 17).

From the pessimists' point of view, the information revolution creates another layer of marginalization for the poor economies of the world. Muhammad Yunus summarizes the main points of this perspective when he observes,

> With the emergence of new economic forces driven by IT and their ever-increasing strength in the world economy, nations that were small, weak, and poor under the old dispensation will be further marginalized, making it even more difficult for them to compete. Under this scenario, IT will make the current rush towards uncontrolled globalization even stronger and more unstoppable. Global corporations will dictate terms to the weak economies, which will have no choice but to submit. Their role in the new information-driven economy – if any – will be to provide the most menial services and the cheapest, least-differentiated products, while the lion's share of the economic rewards will go to their better-educated, richer, more advanced, and more powerful counterparts to the north. (Yunus, 2007, p. 188)

While Yunus above maps how IT can exacerbate uneven development in the global community, he does not end his argument on a sour note. Instead, he argues that "when IT enters a poor economy, it creates wider choices and new relationships, replacing the traditional uni-directional relationship between rich and poor with a set of multi-dimensional and global relationships in which the poor have an equal footing" (Yunus, 2007, p. 190). We must keep in mind, however, that an equally convincing body of literature highlights that "although a steady stream of optimists see ubiquitous communications as the salvation of rural and remote areas, the growth of new [communications] technologies does not automatically result in the decentralization of economic activity" (Malecki, 2002, p. 419). The case study of the Kiva organization as profiled below illustrates how economic empowerment of the poor can happen when social networking and micro-financing diffuse capital where it is needed most.

Social theories of the Internet and development

A more "comprehensive" definition of development has brought into focus political as well as social capabilities within society as development indicators. For example, the World Bank "has argued for widening our [development] goals beyond the traditional macroeconomic objectives, such as national income, fiscal health, and stability in the balance of payments, to encompass 'societal development' including basic human rights, access to a legal system, literacy, and good health" (Basu, 2001, p. 65). What role might the Internet play in social development?

Scholars who study the social impact of the Internet have noted that "through email, listservs, and news groups, the Internet is seen to have created a network of activists" (Johnston & Laxer, 2003, p. 52). These networks represent "a shift from traditional politics centered on political parties and states, to movement politics focused on global networks opposing [for example] transnational corporate power" (Johnston & Laxer, 2003, p. 59). Some of the key issues upon which these Internet-supported social movements are based include "democracy, popular sovereignty, control over natural resources, human rights, and the environment" (Johnston & Laxer, 2003, p. 62). The Internet has also been seen as a tool that "facilitates civil society activities by offering new possibilities for citizen participation" (Yang, 2003, p. 406). But as Guobin Yang observes, "technology

is used by members of society; its diffusion and use depend on social conditions. The conditions of society, in other words, shape technological development" (Yang, 2003, p. 405). Recognizing that social givens shape the diffusion and meaning of Internet use, a handful of scholars have studied the impact of culture and context on social development and the Internet. For example, Yang has looked at the Internet and civil society in China (Yang, 2003). Wheeler has examined the impact of the Internet on gender relationships, youths, and civil society in the Arab world (Wheeler, 2001, 2005, 2006, 2008a, 2008b). Several scholars have examined the ways in which culture and structural conditions in Africa shape the meaning and use of the Internet (Mercer, 2004; Powell, 2001; Wilson & Wong, 2007).

The most comprehensive social theory of the Internet was developed by Manuel Castells, who observes that the Internet creates "a new social form, the network society" (Castells, 2001, p. 275). Castells' idea of the rise of the network society has significance for the study of the Internet and development because as Castells observes, "the ability or inability of societies to master technology" (in this case, information technology) "largely shapes their destiny, to the point where we could say that while technology *per se* does not determine historical evolution and social change, technology (or the lack of it) embodies the capacity of societies to transform themselves" (Castells, 2000, p. 7).

The global rise of the network society has been uneven. Those countries and communities that are slow to transition to this new "network-based social structure" that is characterized by a "highly dynamic open system susceptible to innovating, without threatening its balance" (Castells, 2000, p. 502) are said to be caught in the digital divide. The digital divide is defined by "inequalities in access to the Internet, extent of use, knowledge of search strategies, quality of technical connections and social support, ability to evaluate the quality of information, and diversity of uses" (DiMaggio, Hargittai, Newman, & Robinson, 2001, p. 310). These technological capabilities are fundamental to participation in the new network society. As well, as explored above, "the actual social uses of ICTs are to a large extent guided by the political-institutional arrangements within which they are embedded" (Hamelink, 2000, p. 27). Perhaps the key role of political institutions in shaping the diffusion, use, and impact of the Internet explains why democratic societies are among the first to benefit from new information technologies and countries like Myanmar, for example, are among the last. Capital also influences access to and use of new technologies. Thus in 1999, the UNDP observed that "the network society is creating parallel communication systems: one for those with income, education and – literally – connections, giving plentiful information at low cost and high speed; the other for those without connections, blocked by high barriers of time, cost, and uncertainty and dependent on outdated information" (UNDP, 1999, p. 63, quoted in Hamelink, 2000, p. 81). While as Hamelink explains "when new technologies are introduced in societies the chances to benefit from them are always unequally distributed," scholars and policymakers are concerned to respond to evidence that the rise of

the global network society is resulting in a situation where "the global gap between haves and have-nots, between know and know-nots, is widening" (UNDP, 1999, p. 57). Three examples of projects to bridge the digital divide and to more equitably share the promises and opportunities of the information age are examined below.

IT and Development in Practice

Bridging the digital divide: the Leland Initiative and wiring Africa

Jeffrey Sachs argues that there are eight ways in which information technology can contribute to sustainable development: "connectivity, division of labor, scale, replication, accountability, matching, building communities of interest, and education" (Sachs, 2008, p. 225). Before these IT-enabled processes of sustainable development can take place, an IT infrastructure must exist. Sachs observes that in Africa, "the difficulties of geography, fiscal distress, and governance come together to create the epicenter of the world's development challenge" (Sachs, 2008, p. 225). Africa is also the least wired continent in the global community. Understanding these development challenges and the role of IT in ameliorating or exacerbating them, the World Bank in 1995 argued that "the information revolution offers Africa a dramatic opportunity to leapfrog into the future, breaking out of decades of stagnation or decline." But, "Africa must seize this opportunity quickly. If African countries cannot take advantage of the information revolution and surf this great wave of technological change, they may be crushed by it" (World Bank, 1995, quoted in Royce, 2001, p. 1). The Leland Initiative was among the first comprehensive development projects to build IT infrastructure in Africa as a step towards sustainable development. The following case study explores what the Leland Initiative is, and how it used the Internet to create sustainable development in Africa.

The Leland Initiative, also known as the African Global Information Infrastructure Gateway Project, was created in 1996 by USAID to honor Congressman Mickey Leland who died in 1989 in a plane crash while working on famine relief in Ethiopia (USAID, "Leland Initiative: End of Project Report" 2001, p. 3). The project budget was 15 million dollars, and it was designed to provide full Internet connectivity and training to 20 African nations,[1] over a five-year period (USAID, "Leland Initiative End-User Applications," p. 1).

In order to build an IT infrastructure in Africa, the Leland Initiative worked to "encourage states to adopt Internet enabling policies in exchange for assistance in the form of equipment and training" (Wilson & Wong, 2007, p. 166). The main goal of the Leland Initiative was to introduce "cost-based tariff structures to stimulate private sector competition, the introduction or enhancement of full national Internet connectivity through the provision of requisite technologies, and the achievement of broad-based utilization of the Internet and other ICTs for

sustainable development" (Wilson & Wong, 2007, p. 166). In terms of the motivations behind the project, Ed Royce, Chairman of the Africa Subcommittee of the US House of Representatives, testified that "the concern is that without IT tools, Africa will be unable to expand, or even maintain, its already very low level of engagement with the world marketplace. Africa also risks forgoing the advantages IT brings to confronting educational, health, governance and other challenges" (Royce, 2001, p. 1).

The Leland Initiative operated on the basis of three broad strategic objectives:

1   To create an "enabling policy environment in project countries to facilitate electronic networking and access to global information infrastructure technologies."
2   To "strengthen local telecommunications infrastructure to facilitate Internet access and support a local ISP [Internet service provider] industry."
3   To "achieve broad-based utilization of information and global information technologies among USAID's development partners to promote sustainable development." (USAID, "Leland Initiative: End of Project Report," 2001, p. 3)

In Africa in 1995, only 1000 Internet users outside of South Africa existed, and only 6 out of 53 African nations had access to the Internet (including South Africa, Namibia, Ghana, Uganda, and Zambia). Moreover, Internet access cost about $80 a month for five hours of service in 1995 (USAID, "Leland Initiative: End of Project Report," 2001, p. 2). By 1998, the number of African countries connected to the Internet rose to 47. The Leland Initiative played a significant role in bringing African nations online and in reducing the costs of IT services by introducing market-based competition in the ISP realm, which meant more people in Africa could afford Internet access (Burmeister, 1998, p. 1).

The first step of the Leland Initiative's effort to foster sustainable development via IT diffusion is an individual country assessment and plan of action. The assessments address three main issues: "national and regional policies and regulations concerning telecommunications and information access and use, the present condition of the national telecommunications infrastructure, and the current condition of and potential demand for Internet access in the public and private sectors" (USAID, "Leland Initiative End-User Applications," p. 1).

The second step is to identify potential partners for implementing USAID's IT diffusion and use projects. In addition, analyses of the "barriers to Internet access and effective use" are constructed (USAID, "Leland Initiative End-User Applications," p. 2). The barriers identified by the Leland Initiative include ineffective national telecommunications policies, low-quality telecommunications service, lack of computer technology, lack of adequately trained IT professionals, lack of a competitive ISP market, and costly ISP services, lack of public awareness and demand for the Internet, and lack of training on strategic uses of the Internet (USAID, "Leland Initiative End-User Applications," p. 2). The Memorandum of Understanding signed between the participant country and USAID

represents an agreement between the two parties to build an IT infrastructure, reform information policy environments, and train locals to implement, maintain, and diffuse IT access and knowledge throughout the host society. The desired end result is an increase in public demand for IT, a more equitably distributed network of access to IT, and a heightened awareness of the ways in which the government and the public can use the technology to promote sustainable development. At the root of this project is the view that:

> The Internet is emerging as a low cost pathway that allows information to be more accessible, transferable and manageable; ready access to information is becoming the catalyst that transforms economic and social structures around the world and supports fast-paced sustainable development. (USAID, "Leland Initiative: Africa GII Gateway Project – Project Description and Frequently Asked Questions," pp. 1–2)

According to Wilson and Wong, the Leland Initiative achieved its greatest success in Mali, and limited success in Benin, Guinea, Guinea-Bissau, Cote d'Ivoire, Eritrea, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Senegal, and Uganda. The Leland Initiative was not successful in Gambia, Mauritania, Nigeria, and Swaziland, because these countries refused to participate in the initiative's "conditional assistance" (Wilson & Wong, 2007, pp. 167–8). Lane Smith, manager of the Leland Initiative, explains how these conditions for participation work:

> We were only willing to help those countries that wanted to adopt modern, Internet "friendly" policies. We offered to help them reach out to the private sector to implement these policies, and we offered to provide them with the equipment necessary to establish their national Internet infrastructure, and the training on how to use it. We noted that we would not help those who insisted on doing business the old-fashioned, state monopoly way. (Smith, quoted in Wilson & Wong, 2007, p. 167)

USAID's Leland Initiative highlights the following projects as evidence of the Internet's contribution to sustainable development in Africa:

USAID Community Learning Center Program

> Leland Initiative sponsored Ghanaian Community Learning Centers (CLCs) provide public access to the wealth of information on the Internet. Each CLC will be equipped with a local area network of multimedia personal computers and shared high-speed access to the Internet. In addition to Internet access, each CLC will contain a library of supporting print materials. A training room will allow the CLC to conduct classes for the public to improve computer literacy and awareness of resources available through the Internet. Skilled support staff will be available to help visitors learn to use the Internet effectively. CLC's will be operated on a cost-recovery basis by local NGOs and will employ local staff. (USAID, "Innovative Programs Utilizing Information Technology: Case Studies," p. 1)

USAID Decentralization Project-ARDnet   USAID Leland Initiative sponsored Africa Regional Dialogue in Decentralization Network (ARDnet) promotes a

> sustainable network of decision makers and stakeholders in decentralization in West Africa. The first four member states, Benin, Cote d'Ivorie, Guinea, and Mali have agreed to: establish national mechanisms for dialogue to support a decentralization reform process, assure responsiveness to citizens needs in local electoral procedures, improve resource mobilization by increasing public participation in such processes, elect municipal teams to better respond to citizen needs. (USAID, "Innovative Programs Utilizing Information Technology: Case Studies," p. 2)

USAID Global Trade Network Program   USAID Leland Initiative funded Global Trade Network (USGTN) assists "African and US business communities in finding current business opportunities in Africa and facilitating trade and investment between the US and Africa" (USAID, "Innovative Programs Utilizing Information Technology: Case Studies," p. 2).

Lane Smith provides a retrospective on the lessons learned from it. First of all, he estimates that the Leland Initiative is responsible for providing Internet access to at least 2 million Africans. Moreover, it built Internet gateways and national connections to the web for 10 African countries. Through the Leland Initiative, USAID provided 16 additional countries Internet access via universities, parliaments, and private sector groups (Smith, 2003, pp. 12f). According to Smith, the main impact of the Leland Initiative is a "more vibrant [IT] market, better [IT] access and lower prices" (Smith, 2003, p. 13). Moreover, as a result of the Leland Initiative "private companies have invested capital, established businesses, built infrastructure, and aggressively pursued new business opportunities" (Smith, 2003, p. 13). In terms of sustainable development, we see the Leland Initiative's contribution when a furniture-maker in Guinea uses his new Internet access provided by the initiative "to keep up with the latest woodworking technology" (Inter@ctive Week, 1999, p. 42). Similarly, Internet connectivity in Madagascar "transformed the business climate" in that producers of "vanilla and coffee" can now trade "with companies world wide" thus cutting out middle men and increasing their profits (Inter@ctive Week, 1999, p. 42).

Micro-finance: Kiva leverages the people-to-people power of the net

In Jordan when I was working as an international consultant for the UNDP in Amman, repeatedly the problem of aspiring (but poor) entrepreneurs was not lack of imagination or initiative, but rather lack of access to capital for investment in growing their business ideas. Micro-finance changes all of this by providing the missing link in many people's quest to exit the poverty trap. While loans provided via micro-credit are not large enough for buying real estate, for example, they are key to global economic development among the poor. This is because

small loans are provided without the need for collateral, and repayment plans are manageable so that a borrower can start a business, grow a business, and support themselves and their families at the same time that they pay back their loans with interest. Micro-finance has gained global attention, especially after 2006, the year in which Muhammad Yunus won the Nobel Peace Prize for his Grameen Bank, a micro-finance company established in the 1980s to provide loans to Bangladesh's poor.

One micro-finance initiative in particular is leveraging notably the full power of the Internet to promote development worldwide. Kiva is a non-profit micro-finance company founded in 2005 by Matthew and Jessica Flannery, a husband and wife team, both with degrees from Stanford University. Kiva means "unity" or "agreement" in Swahili, and Kiva is uniting poor entrepreneurs in the global south with charitable individuals in the global north. The Internet provides the link, allowing those wanting loans to ask for funds directly from a global community of donors who individually contribute $25 loans, which when pooled to meet an entrepreneur's loan request, add up to significant opportunities for empowerment for the poor. Kiva partners with "field partners," local micro-finance companies in the developing world who "charge borrowers interest, take responsibility for identifying responsible entrepreneurs, disbursing the loan, collecting repayments and giving lenders periodic updates on how the business is going" (Duffy, 2007, p. 33). On Kiva's website, potential donors can screen poor business men and women seeking loans and learn more about local field partners. For example, a recent scan of loan requests made on the Kiva website by poor Lebanese entrepreneurs revealed the following:

> Khaled Amhaz is a 32-year-old male businessman who owns a mobile phone store. He has had five loans from Kiva, all of which he has paid back in full. He uses the loans to buy new merchandise and to sustain and develop his business. (www.kiva.org)

> Khalil Sharkaoui is a 31-year-old businessman who lives and works in Tyre, Lebanon. He sells and fixes mobile phones. He has two loans from Kiva one of which he has paid back in full. He uses the loans to buy merchandise and to sustain and develop his business. (www.kiva.org)

> Issam is a 48-year-old man who lives with his family in South Lebanon in Tyre. He has three children and owns an Internet café. He is asking for a loan from Kiva to buy more computers. Issam started with one computer and is always striving to develop his business, which is in high demand in the area. This will be his first loan with Kiva. (www.kiva.org)

> Zenab al-Abedallah is a 20-year-old woman living in Beirut. She is paying her university tuition with revenue from her DVD rental and sales business. She requested a loan from Kiva with which to purchase new movies and to sustain and develop her business. (www.kiva.org)

A link on the Kiva website illustrates who has contributed to fund each of these entrepreneurs. In Issam's case, funding has come from Australia, across the US, the UK, France, Denmark, and Canada. In Zenab's case, donors come from Canada, across the US, and Singapore.

Although loan increments are small ($25 for individuals wishing to donate), collectively, a global community meets all demands eventually. In fact, in September of 2007, the website had to announce that "due to a recent surge in support ignited by viewers of the Oprah Winfrey Show, the Today Show, and readers of President Clinton's newly released book *Giving*, there is currently a shortage of businesses in need of loans" (Duffy, 2007, p. 33). It takes on average less than a day for each loan posted on the site to be funded (*Sunday Telegraph*, 2008, p. 2). Moreover, Kiva has a less than 1 percent default rate on its loans (*Sunday Telegraph*, 2008, p. 2).

What makes Kiva special is that "with a few clicks you can help someone on the other side of the world and play a part in solving the problems of global inequality which so often seem insurmountable" (Walker, 2008, p. 22). Another observer states that "with a few clicks of the mouse, most everyone can become a microfinancer" (Narang, 2006, p. 84). The World Bank estimates that only one in three working-age people in the developing world who need access to credit actually get it (Brown, 2007, p. 1). Organizations like Kiva attempt to solve this roadblock to economic development for the world's poor and underfinanced. The most transformative aspect of Kiva is that "it personalizes aid" by "allowing an individual in the West to choose who they will help in the developing world via its website" (Brown, 2007, p. 1). Kiva also solves one of the biggest challenges of development – giving someone fish fills their belly for a day; teaching someone to fish means their full belly will be sustainable. One observer notes that with Kiva aid, "what they are being offered is a loan rather than a handout. Simply giving aid assumes people in the developing world are helpless and robs them of their self-respect. A loan is a business arrangement – borrowers are trusted to pay it back. It helps people to help themselves" (Brown, 2007, p. 1).

In the first two years of operation, Kiva "enabled 90,000 people to lend nearly $10,000,000 to 15,000 entrepreneurs across the developing world" (Brown, 2007, p. 1). By 2008, Kiva had distributed 22 million dollars across 40 countries (O'Brian, 2008, p. 18). Kiva success stories include the following:

> A brick manufacturer in Kenya used a $150 loan to rent a brick press which allowed him to double his production over night, and greatly increase his profit. The growth of his business also enabled him to hire 5 additional staff members. (Brown, 2007, p. 1)

> Abdul Satar in Kabul owned a bakery. He used a Kiva loan to open a second bakery and to add 4 employees to run the new business. Now Abdul Satar "benefits from economies of scale when he buys flour and firewood for his oven." He says that over the next 10 years he plans to have 6 or more bakeries. (Kristof, 2007, p. 19)

> Abdul Saboor runs a small TV repair shop in Afghanistan. He used a Kiva loan to "open a second shop, employing two people and to increase his inventory of spare parts." He notes that he used to "go to the market every day to buy parts." The Kiva loan allowed him to reduce the two and a half hour daily trip to the market to once every two weeks, saving him significant money and time. (Kristof, 2007, p. 19)

Jeffrey Sachs prescribes eight steps we can take as individuals to build "a world of peace and sustainable development" (Sachs, 2008, p. 336). Number five on the list is to "promote sustainable development through social networking sites, which deploy the most popular and advanced tools of the Internet for the spread and support of social activism" (Sachs, 2008, p. 338). This is the Kiva spirit, blending social networking and micro-finance strategies to solve poverty one person-to-person network at a time. Kiva epitomizes the ways in which the Internet "boosts our capacity for effective global cooperation" making us, in Al Gore's words, more clearly "members of the human family" (Sachs, 2008, p. 307; Gore, 1994, p. 1).

Least Developed Countries Initiative

Cisco Network Academies

The Least Developed Countries Initiative was launched in July 2000 at the G-8 Summit meeting in Okinawa, Japan. The initiative partners include Cisco Systems, the world's leading Internet networking company, the UN, and USAID. The goal of the project is to set up Cisco Networking Academies in the UNDP-designated 49 least developed countries (LDCs), in order to "train students for the Internet economy" (Park, 2001, p. 61). Students who enroll in a Cisco Networking Academy program receive "a comprehensive 560 hour course designed to provide students with conceptual and practical skills that will enable them to design, build and maintain computer networks" (Park, 2001, p. 61).[2] At the end of the course, students take the Cisco Certified Networking Associate examination (Park, 2001 p. 61).

In the first year of operation, the Least Developed Countries Initiative succeeded in setting up training academies in more than half of the LDCs, and trained a total of 1,100 students, of which 22 percent were women (Park, 2001 p. 61). By June of 2004, after four years of operation, 10,000 Cisco Networking Academies existed in 149 countries (Selinger, 2004, p. 224). Programs were established beyond LDCs, but tended to be placed in countries suffering from "poverty, as well as from weak human resources and economic institutions" (Park, 2001 p. 61). By 2004, these 10,000 academies had an enrollment of nearly 300,000 students. Moreover, by 2004, "more than 123,000 students had graduated from the program" (Selinger, 2004 p. 224). By 2007, the number of students trained in Cisco Networking Academies rose to 2 million (GCR, 2007, p. 3).

One of the goals of the Least Developed Countries Initiative is to bridge the gendered nature of the digital divide. This is achieved by "proactively promoting

greater participation of women in information technology through the Networking Academies," specifically by designing special courses for women only (Park, 2001, p. 62). Other gender-sensitive strategies include reduced tuition for women students and recruiting female instructors (Park, 2001 p. 62). In 2005, University of Maryland's IRIS Center completed an impact assessment of Cisco Networking Academy's Gender Initiative in Bangladesh (IRIS, 2005, p. 1). The findings of this study in a nutshell were that "the program has made great inroads in offering quality information technology education. Yet there remain significant challenges facing women as IT professionals in Bangladesh, and many of these are the result of deep-rooted cultural attitudes and a broad expanse of societal problems that exist beyond the scope of the program" (IRIS, 2005, p. i). One of the most pressing concerns with regard to this program is that many graduates of Cisco Networking Academies in Bangladesh, both male and female, "express difficulty with finding a job upon graduation" (IRIS, 2005, p. 6). This phenomenon led IRIS analysts to recommend the establishment of a job placement organization that can link recent graduates with businesses and organizations seeking employees. This organization could offer recent graduates assistance with searching for a job, enhance their skills at interviewing, and help them with their résumé (IRIS, 2005, p. 10).

In terms of best practices, the IRIS study highlights the following success stories.

Rubaiyat Koli provided private tutoring in her home to raise enough money to attend the Cisco Networking Academy. After graduating and passing the certification exams, she got a job with Bangladesh's largest telecommunications company, Grameen Phone (IRIS, 2005, p. 11).

Rawnak Anjuman received a partial scholarship to attend the Cisco Networking Academy. After completing the program and gaining her certificate, Rawnak was hired by the Ministry of Science and ICT to work on a program entitled "Establishment of Technology Dissemination Cell." The program was designed to "bring the Ministry under full network coverage and establish e-governance" in this and other ministries (IRIS, 2005, p. 12).

In June 2007, GCR Custom Research conducted an impact assessment on the Cisco Least Developed Countries Initiative in Africa. As of 2007, 40,000 students were trained in academies throughout the continent (GCR, 2007, p. 5). Of those trained, 30 percent of them were female (GCR, 2007, p. 5). The study found that "The Cisco Networking Academy is having a strong positive impact on individuals, communities and economies across" Africa (GCR, 2007, p. 19). One of the recommendations of this study is to provide increased "assistance with gaining employment" (GCR, 2007, p. 20). This observation resonates with the experiences of Bangladeshis participating in the program. At the same time, the GRC study found that nearly two thirds of students surveyed had found employment (GRC, 2007, p. 21). Most of the students who are employed after graduation hold positions in the IT field, illustrating a clear link between training and employability in the IT field (GCR, 2007, p. 30). Of those graduates finding jobs, two thirds of them go to work in the private sector (GCR, 2007, p. 33).

The public–private partnership represented by the Cisco Networking Academy project illustrates "how businesses, international organizations and governments can work together to contribute to the advancement of the world's underserved communities" (USAID, 2008, p. 1). Collectively, the Cisco Networking Academies worldwide have "positively transformed lives and communities, giving people the skills necessary to find employment and make a better life for themselves and their families in the world's least developed countries" (GCR, 2007, p. 5). In general, students who graduate from a Cisco Networking Academy contribute to sustainable development by raising the knowledge level and job skills of their communities (GCR, 2007, p. 45).

Conclusions – The Persistence of Development Challenges, in Spite of Web Diffusion

As this chapter draws to a close, headline news provides a disturbing picture of the inequalities and development challenges which characterize our global community, many of which are seemingly beyond human control. The Chinese province of Sichuan is reeling from strong aftershocks following a massive earthquake, which has killed nearly 70,000 and left 5 million people homeless. Twenty-three thousand people are still missing (Barboza, 2008, pp. A5, A7). Cyclone Nargis has killed at least 134,000 people, while the Myanmar government is resisting international aid because of conditions imposed by donors wanting direct access to hardest hit areas. (*New York Times*, 2008, p. 1A). Food riots have broken out across Bangladesh, beginning what locals call "the Rice Revolution" (Wax, 2008, pp. A1, A14). In Egypt, bread riots are an increasingly common feature, as rising commodity prices have led to "a growing crisis over primary foodstuffs" (Knickmeyer, 2008, p. A1). Egypt's economy is increasingly characterized by "rising prices, depressed salaries" and "an unprecedented gap between rich and the poor" (Slackman, 2008, p. A6). The same rise in prices that is leading to bread and rice riots in Egypt and Bangladesh is producing record waves of growth across the developing world. For example, Ghana, a country rich in gold and cocoa, has "joined a long list of developing countries in Africa and beyond enjoying record periods of growth" (Faiola, 2008, p. 1).

In terms of IT and development, headline news paints a positive picture. For example, the USAID Last Mile Initiative has provided Internet access, computer training, and improved job skills for the rural inhabitants of the Gorongosa District of Mozambique. In the words of Jose Nhamitambo, one of the computer-station users, having computer and Internet access is "very important." With access, "I write documents, I go on the Internet, I write to people who live far from here. Everyone is excited about the computers" (Hanes, 2008, p. 14). Similarly encouraging is the role that IT is playing in the Egyptian public's demand for increasing government accountability. In Egypt, public protests are increasingly enabled "by technology, especially cell phones, [which] are used to spread the

word" (Slackman, 2008, p. A6). In April 2008, a workers' strike spread through-out the country by word of mouth and mobile phone. People took to the streets and "mass messages circulated, listing 'demands' that included increased security, no more inflation, housing aid for young couples and an end to torture in police stations" (Slackman, 2008, p. A6).

This chapter began with a question, "can the Internet help to create a more equitable world?" The snapshot provided above of the state of our world suggests that some development challenges are too big for the Internet. When people need food, safe drinking-water, medicine, and shelter, Internet connectivity does little to provide for these basic necessities except for potentially ending one of the root causes of extreme poverty, namely, "isolation" (Brown, 2000, quoted in Kenny 2006, p. 4). The three case studies analyzed above, the Leland Initiative, the Kiva movement, and the Cisco Least Developed Countries Initiative, all illustrate that Internet connectivity can empower some people and communities. The success stories provided show that while it is important not to "oversell the web" at the same time, one must not underestimate its potential either (Kenny, 2006).

Notes

1   For a list of participating African countries see www.usaid.gov/leland/countries.htm.
2   According to Michelle Selinger, of Cisco Systems, UK office, the training course is only 280 hours.

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