Technology companies and development experts describe the mobile Internet as the technology that will transform the lives of the world’s poor. Describing Internet connectivity as “the foundation of the knowledge economy” and a human right, Mark Zuckerberg, founder of Facebook, launched a philanthropic initiative, Internet.org, to provide free access to Facebook and other select Internet sites. Google is experimenting similarly with balloons and broadcast frequencies—such as “white space” from the unused television spectrum—to drive access, and it also has launched Google Zero in partnership with mobile network operators to provide free access to select Google services. The Wikipedia Foundation also has joined the movement, partnering with 29 operators in 34 countries to provide mobile users access to Wikipedia Zero, with the goal of building “a world in which every single human on the planet has equal access to the sum of all knowledge.”

Development organizations also have embraced technology’s potential to reduce poverty; the World Bank argues that smartphones with data connectivity “not only empower individuals but have important cascade effects stimulating growth, entrepreneurship, and productivity throughout the economy as a whole.” Both private-sector and development organizations thus share a common belief that access is the key to unlocking technology’s full potential to contribute to economic growth.

However, because technology tends to amplify existing patterns and intent, focusing solely on access is likely to entrench existing inequalities further. To counter any amplification of the culture of poverty and oppression, people in the developing world will need to have the capacity to produce digital content that can enhance local knowledge and strengthen champions of change.

This essay first outlines the economic argument that dominates the case for using the mobile phone in development, and then shows that technological con-
ICT AND DEVELOPMENT: ECONOMIC GROWTH AND INFORMATION

The arguments in favor of using the mobile phone as a development tool draw their theoretical power from seminal studies now viewed as canonical references. In the field of economics, Robert Jensen’s description of how fisherman in Kerala, India, used mobile phones to reduce variation in sardine prices has become an enduring point of reference. He found that the mobile phone introduced market efficiencies that increased fishermen’s profits by an average 8 percent and reduced the cost of fish by an average 4 percent. Another much-cited study, by Waverman et al., correlates an extra 10 mobile phones per 100 people with a 0.59 percent increase in GDP of (all other factors being equal).

One of the earliest studies of the mobile phone’s role in political processes was Vincente L. Rafael’s examination of the 2001 uprising against Philippine president Joseph Estrada. Rafael presented an optimistic view of the mobile phone, noting that “at its most utopian, the fetish of communication suggested the possibility of dissolving, however provisionally, existing class divisions.” More recently, writers such as Clay Shirky have described the uprisings across the Middle East as “mobile- and Internet-powered political transformations.”

There also is a rich vein of work on the mobile phone’s contribution to cultural change, described as a “mind and society altering technology” that contributes to changes in the way people interact and organize the most intimate aspects of their daily lives. A growing number of anthropological and sociological studies...
state that the perpetual contact and universal addressability of mobile phones have significant implications for social relationships and interactions. Rich Ling, one of the earliest sociologists of the mobile phone, describes a “bounded solidarity” and argues that “the mobile phone tips the balance in the favor of the intimate sphere of friends and family.”

However, the function and effects of the mobile phone as a media device are the most significant aspects of the technology in terms of social change. Tomi Ahonen, a mobile industry analyst, terms the technology “the seventh mass media,” and it is increasingly apparent that mobile media are characterized by social networking and the consumption of entertainment content. There is a wealth of studies that describe mass media and entertainment as contributing to the globalization of Western values such as autonomy and individualism, from contributing to the overthrow of communism to introducing the concepts of rationalism and positivism. Recent studies have examined how television affects social values in developing countries; Robert Jensen and Emily Oster’s study, for example, finds a correlation between access to cable television and marked increases in women’s autonomy, which decreases the acceptability of wife-beating as well as preference for sons. The effects of access to cable television, they argue, are on a par with the effects five years of education or moving to an urban environment can have.

Despite the significance of these findings on the social and cultural impact of electronic media, the international development community’s interest in the roles of mobile phones and the Internet is dominated by their potential for economic growth. This paper argues that, because mobile Internet usage is dominated by entertainment consumption, the impact of the technology is best understood in terms of its implications for cultural attitudes and values. As a lens through which to approach development, culture is the subject of increasing attention. Individual values and attitudes provide a way of understanding the choices people make. Culture therefore provides a rich diagnostic of development challenges and future development interventions, a stance that is gaining attention from mainstream development actors such as the World Bank.

THE ENTERTAINMENT VALUE OF THE MOBILE INTERNET

The technological characteristics of mobile phones mean that mobile Internet use is characterized more by entertainment consumption than economic productivity. The argument that new mobile technologies can help bridge digital divides and “leapfrog” the stage of fixed-line Internet access is challenged by critics such as Philip Napoli and Jonathon Obar. They say it fails to account for the fact that accessing the Internet on a mobile phone is very different than doing so on a desktop computer. The limited memory, speed, and storage capacity of mobile phones constrains productive business use and news consumption. These limitations also affect content creation; studies have found that mobile users write fewer and shorter e-mails and participate less in chatrooms than desktop computer users.
The mobile web is also different from the fixed-line web. One estimate suggests that less than 10 percent of the web is mobile ready—that is, reformatted for the small screens of smartphones and even smaller screens of the feature phones that dominate use in developing countries. Moreover, sites that do have mobile versions often contain less information, as content is stripped down for ease of use. For example, mobile search engine designers say users are usually “messing around” rather than seeking specific information. A further distinction exists between the open Internet of browsers and the Internet of applications such as Facebook and Wikipedia. The latter create a walled-garden type of experience that is a “much less open and much more constricted model of Internet access than traditional Internet access.”

Contrasting with claims of the mobile phone’s productivity value, Napoli and Obar argue that mobile information consumption “tends to be weighted much more heavily toward entertainment and leisure than is the case with PC usage.” A study of mobile Internet usage patterns by Opera, which develops mobile phone browsers, found that usage is dominated by searches and social networking, followed by e-mail and entertainment. This finding is not restricted to mature markets or wealthy users. For example, Nimmi Rangaswamy and Edward Cutrell show how resource-constrained Indian slum dwellers use early Java-enabled phones to seek out free sites to download games, songs, and pictures of popular Bollywood stars. They find that “the use of the mobile Internet completely comprises Audio Visual downloads, gaming and chatting,” and that young users are “happy to divert time and money that might be spent on ‘developmental’ usages to mobile video downloads.”

If mobile Internet use in emerging markets is characterized by the consumption of entertainment content, then Facebook and others who claim that Internet access alone drives development will have to explain how entertainment content contributes to the promise of economic and social progress. There certainly are examples of entertainment contributing to changes in peoples’ attitudes, at least in a cultural context.

CULTURE AND DEVELOPMENT

There is growing awareness among people working in development that culture may actually have an important role to play in trajectories of change. This emerging understanding of the role culture plays in the decisions people make points to a framework that can aid in understanding how mobile Internet might amplify existing social norms, and the role it is likely to play in development.

Early modernization theorists recognized the significance of culture in development, but they saw traditional values as a barrier to modern norms and values—a barrier that media could help overcome. Daniel Lerner, for example, described how information technologies such as television and communications media could inject “a spirit of rationalism and positivism” that would disrupt traditional “backward” cultures. While modernization theory has been largely rejected for...
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assuming that Western values and lifestyles are superior and the only true form of modernity, the idea that culture is significant is again the subject of attention within development circles.

The idea that understanding culture is important in understanding human decisionmaking is gaining traction within development thinking, as there is increasing evidence against the idea that human beings are uniformly rational and self-interested and will maximize utility. These principles of economic and development policymaking are attracting critical attention from both policymakers and academics. For example, the World Bank’s “2015 World Development Report,” the organization’s most significant annual publication, examines mind and culture in response to the increasing evidence that people draw from culturally available heuristics when making decisions, rather than from a universal rationalism.15 (See, for example, the work of Kahneman and of Henrich et al.16)

Cultural anthropologists have also developed the idea that the culture is a factor in shaping action. Swidler’s influential 1986 paper argued that “culture influences action not by providing the ultimate values toward which action is oriented, but by shaping a repertoire or ‘tool kit’ of habits, skills, and styles from which people construct ‘strategies of action.’”17

Embracing the idea of culture as a resource that provides meaning and strategies for action means discarding the idea that technology can inject ideas from the outside and disrupt traditional culture and creating a new theoretical framework for thinking about the relationship between technology and culture.

TECHNOLOGY AND AMPLIFICATION

The concept of technology as an amplifier of human intent and capability, rather than as a source of new ideas and a disruptor of existing social norms, offers a different way of thinking about the impact of information technology on culture and development.

Although the idea of technology as an amplifier of human intent is so commonsense that it’s a National Rifle Association motto—“It’s not guns who kill people, people do”—it has received limited attention from scholars of information technology and development, although studies in areas that inform development theory do examine amplificatory trends. For example, some studies examine the effects cable television and social media have on political and social attitudes, finding that the design of technologies and the choices people make can amplify existing values.

One of the few people to make the link between information technology, amplification, and development is Kentaro Toyama, a computer scientist who formerly worked with Microsoft Research in India. Toyama argues that “the amplification thesis contradicts theories that imply that technology’s impact is additive or transformative in and of itself, e.g., that access to technology levels the playing field of power, or that the Internet, per se, democratizes access to information.”18

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To make his argument, Toyama builds on work by a number of scholars outside the study of information technology in international development.

Toyama starts by describing the work of Philip Agre, who writes about the Internet in political processes and argues that “the Internet changes nothing on its own, but it can amplify existing forces, and those amplified forces might change something.” Toyama also summarizes the work of Warschauer, who examines technology in education systems:

We found no evidence to suggest that technology is serving to overcome or minimize educational inequities . . . Technology does not exist outside of a social structure, exerting an independent force on it . . . Rather . . . the introduction of information and communication technologies . . . serves to amplify existing forms of inequality.

Tichenor et al.’s studies of mass media find similarly that those with higher socioeconomic status absorb most information, leading to what he terms a “knowledge gap hypothesis” in which public service information benefits those with more education and thus widens the knowledge divide.

Toyama concludes that, unlike disruptive theories of technology, which argue that equal access will lead to an outcome of greater equality, “technology is merely a magnifier of underlying human and institutional intent and capacity, which can themselves be positive or negative.”

AMPLIFICATION AND ATTITUDES

How might this principle of amplification affect the mobile Internet’s impact on cultural meaning and values? While this has received limited attention in the context of development, a number of studies have found a relationship between media consumption and the amplification of political and social attitudes.

Driven by the economics of user attention, social media sites selectively filter stories, posts, and information to maximize user attention—a process that provides content that confirms what people already believe. Pariser popularized the concept of the “filter bubble” to describe how the design of algorithms and recommendation engines that underpin social media sites are oriented toward providing content that people enjoy consuming, which tends to affirm their existing attitudes. Indeed, Facebook recently carried out a controversial study to determine how to influence users’ emotions most effectively. The study found that people’s emotions were amplified by the content they consumed, a phenomenon known as emotional contagion.

Research also shows that, when likeminded people discuss an issue, they tend to end up with a more extreme opinion. Studies of cable television and social media consumption show that people select ideologically congruent news channels, and that social media users tend to inhabit an “echo chamber” that amplifies their existing opinions and group attitudes. Some argue that this leads to a more polarized public. These effects are so great, and so grave, Sunstein argues, that the
implications directly challenge the kind of debate central to deliberative and participatory politics, and that the Internet might be inherently incompatible with democracy itself.26

The Pew Research Center’s recent study on public discussion of the Edward Snowden case, in which he leaked details of the U.S. National Security Agency’s (NSA) public surveillance program, highlights how social media might limit diverse debate. The study finds that, “if people thought their friends and followers in social media disagreed with them, they were less likely to say they would state their views on the Snowden-NSA story.”27 The study also warns that this “spiral of silence” might spread offline, as it has found that the average Facebook user is “half as likely to talk about Snowden-NSA issues at a physical public meeting than a non-Facebook user.”28 This could have implications for public debate and diversity of opinion in public life.

A measurable effect of filter bubbles, echo chambers, and spirals of silence is the amplification of existing beliefs, attitudes, and values and the dampening down of debate. There is, of course, no reason to assume that these findings will not also apply in developing countries, which will amplify existing attitudes and behaviors that perpetuate and reinforce the kind of inequality that inhibits development.

This is precisely what may happen if the focus is only on increasing mobile Internet access. Toyama argues that, “short of dramatic co-investments in building human and institutional intent and capacity, mobile phones will only amplify existing forces, and continue to privilege richer and more powerful individuals, communities, and nations.”29 Focusing on access to technology without attending to the capability and motivation to use it will not address the foundations of global poverty.

AMPLIFICATION: STRATEGIES FOR DIGITAL DEVELOPMENT

What kind of strategies and interventions might support the use of mobile data to amplify particular development goals and strengthen certain cultural resources over others?

Rejecting the idea that there is a singular form of progress necessarily means accepting that there are multiple forms of development and modernity, which emphasizes the importance of recognizing that change is not driven by external experts or technologies but by “local knowledge and decision-making power.”30 This view demands a shift away from large-scale, top-down technology and knowledge transfer programs and toward in-depth investigations of people’s contexts and everyday realities to understand what Amartya Sen believes are the kinds of lives people value.31

The goal of development assistance organizations must therefore be to seek the people, groups, and organizations that are already working to make a difference in people’s lives, rather than defining their own aspirations.32 In other words, the focus must move from an externally driven, technologically dependent disrupt-
An existing body of theory and work already employs this approach. Communication theorists Srinivas Melkote and H. L. Steeves distinguish a communications for development approach from four other common approaches to using communications for development: the Communication Effects Approach, the Mass Media and Modernization Approach, the Diffusion of Innovations Approach, and the Social Marketing Approach. These four are characterized by a top-down approach to communication in which experts share specific information with the “information poor” to bring about specific changes the former have identified as being for the benefit of the latter. Melkote and Steeves argue instead for a communications approach characterized by engaging the poor and empowering them to achieve the kinds of changes they themselves value. The individualized and networked nature of mobile Internet, even more than the mass media referred to by Melkote and Steeves, offers opportunities for people to participate and strengthen their ability to achieve change.

INTERVENTIONS FOR DIGITAL DEVELOPMENT

The communication for development approach is not just theory. It has a demonstrated track record of successful interventions, which efforts to use the mobile Internet for development could learn from.

Practitioners of communication for development embrace the power of entertainment to engage and educate audiences. While most “edutainment” programs target individuals, communication for development engages with individuals’ wider social contexts to strengthen existing change agents. For example, the television health program Soul City reaches 80 percent of South Africans and has had a measurable impact on a wide variety of sexual behavior and gender relations, such as a 3 percent reduction in intergenerational sex among respondents exposed to the program. In Rwanda, radio dramas designed to reduce prejudice and promote tolerance have had a measurable effect on people’s ability to accept those who think differently. Evaluations emphasized the importance of community-based radio listener groups that create opportunities for communities to discuss strategies for change.

What then might mobile data-oriented interventions look like? One example that demonstrates the successful use of digital technologies for change is Apps for Good, which was founded in 1995 as part of a technology program to empower young people in Brazilian favelas. The program emphasizes skills in creating technology and critical problem-solving skills. Apps for Good participants learn how to solve social problems with technologies such as Stop and Search, an app that allows young people to rate their experience of being stopped and searched by the police. Apps for Good has since expanded to the UK, and in 2014 more than 20,000 young people entered Apps for Good training programs. Other organiza-
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tions in the developed world also are building change agents’ ability to use digital technologies: Witness, a human rights organization founded by Peter Gabriel, provides video and technology training to human rights activists to help strengthen their work. Tactical Tech, a Berlin-based capacity-building organization, targets active change agents and empowers them to use information and communications in ongoing projects and tailored technology-training programs.

The common lesson from these and similar efforts is that success depends on building alliances and strengthening the capacity of those already working for change. Where tools are provided but no training is given, the tools often lie unused. Applying the lessons of development communication will mean focusing on building skills and solving specific problems while emphasizing engagement with the wider community and social norms. Technology alone is merely an amplifier.

In today’s networked world, the potential to forge alliances that are wide and deep is immense, but we must leave behind approaches that focus only on access and recognize that they tend to amplify the status quo, rather than to disrupt inequality and power. Technology alone cannot disrupt poverty or promote equitable change—indeed, left to market forces, it is likely to do the opposite. The mobile Internet can be harnessed most effectively by those who have that capacity and are already on the upper slopes of the socioeconomic pyramid. We need to invest in building the capacity of those at the base of the pyramid and seek out change agents who are already working to alleviate poverty and inequality.

Building the digital economies of tomorrow depends on building the digital capacities of the change agents of today.

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