

Marginal Benefits at the Global Margins: The Unfulfilled Potential of Digital Technologies

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With digital technologies seemingly affecting all aspects of life in advanced economies today, an important question is whether they also benefit those at the global margins. Technology enthusiasts have long pronounced that connectivity via mobile phones and Internet-connected devices will bring massive development gains—that it will be a “game changer in the field of education,” “the best thing anyone can do to improve quality of life around the world,” and “the most transformative technology of economic development in our time,” and that it will “help lift people out of poverty and give them a freedom from want.”¹ There are indeed many examples of poor farmers and small-scale entrepreneurs using technology to raise their incomes. But, as argued in the World Bank’s *World Development Report 2016: Digital Dividends* (which we led the preparation of), those benefits have so far fallen short and been unevenly distributed—modest for those at the global margins while often massive for those best prepared to take advantage of these new opportunities.

At the global margins are those living in extreme poverty. What Paul Collier in 2008 called the “bottom billion” are today the 767 million people living below the absolute poverty line of \$1.90 per day (in 2013 PPP dollars; World Bank 2016a). Of those, 80 percent live in rural areas, more than 60 percent are engaged in agriculture, 40 percent are under the age of fifteen, and a similar share has no education. These are large numbers, but they are declining. Since 1990, about 1.1 billion people have escaped extreme poverty as economies have become more urban and market oriented.

We do not know how much new technologies have contributed to poverty reduction. Most of the discussion about their impact relies on case studies or anecdotal evidence. Research in West Africa showed how simple information technologies improved learning, reduced producer price

uncertainty, and generated time savings for poor farmers. Mobile money, accessed through basic feature phones, has spread even to remote communities in countries from Bangladesh to Kenya. This has made the transfer of remittances cheaper and more reliable, with direct welfare consequences for the poor. And research in Peru showed that mobile phone access boosted household consumption by 11 percentage points between 2004 and 2009 as well as reducing poverty by 8 percentage points.²

Even those who do not own a mobile phone or computer can benefit from technological advances. One example is the rollout of digital identification systems. In India and elsewhere, biometric IDs have increased the government's efficiency—removing sixty-two thousand ghost workers from public payrolls saves Nigeria US\$1 billion per year—and its capacity to deliver services to remote and often disadvantaged communities. Perhaps even more important, digital identity can empower individuals, for instance, by making it easier to access basic financial services and participate in democratic processes.

Yet, there is reason to believe that these benefits have not had the massive impact on poverty reduction that many expected. Even though more people in developing countries have access to a mobile phone than to electricity or safe water and sanitation in their homes, most of the poor still do not own a mobile phone or computer. Exact figures are hard to come by, but even among the bottom 40 percent of the income distribution in sub-Saharan Africa, for instance, only a little more than half owned a mobile phone in 2014, and only 5 percent had access to the Internet. Even considering the rapid cost reductions and technological advances, achieving universal access will be hard for mobile phones and even harder for Internet access. This should not be surprising. Consider that 200 years after the conception of universal schooling, about 40 percent of adults in low-income countries remain illiterate; 150 years after electricity was discovered, more than 1.3 billion people—almost 20 percent of the world's population—lack reliable access to the grid; and 100 years after the first automobile rolled off an assembly line, more than two-third of households in the world don't own a car (Poushter 2015).

But there is another reason to be skeptical of ICT poverty reduction claims. Like many previous technological innovations, ICTs tend to be productivity biased, skill biased, and voice biased. Those who are already successful, talented, or better connected tend to benefit most. The problem

then is not just access but also capability. In countries like Niger and Afghanistan, 70 percent of adults are illiterate. In Mali and Uganda, 75 percent of third graders can't read. Even low-income people who can afford a mobile phone (among some groups of African phone owners, the median expenditure on phone service is 13 percent of their income) will benefit far less than those already better off.³ Rather than being a great equalizer, digital technologies risk amplifying existing inequalities—echoing Isaac Asimov's prediction when, in 1964, he looked forward to the world in 2014: "Not all the world's population will enjoy the gadgety world of the future to the full. A larger portion than today will be deprived and although they may be better off, materially, than today, they will be further behind when compared with the advanced portions of the world. They will have moved backward, relatively" (Asimov 1964, n.p.).

Add to this the likely implications of widespread automation. The traditional path to development has been through labor-intensive manufacturing—arguably the greatest contributor to poverty reduction in China and elsewhere. Reduced employment opportunities in these sectors will put large pressure on wages in remaining low-skill occupations. And if future jobs are knowledge intensive, major shortcomings in early childhood development in many developing countries, in education but also in nutrition, become even more damaging.

What are the implications for development policy? Clearly the goal of universal affordable Internet access is still important. Even just the private benefits of easier communication with friends and family and access to useful information justify public policies that ease ICT infrastructure investments. Distortions in the telecom markets rather than a lack of capital more often hold back such investments or keep prices high, including in remote and sparsely populated areas that are often also the poorest.

But policymakers also need to realize that the Internet is not a shortcut to high-income status, even if it can be an enabler and perhaps an accelerator of development. Technology by itself can become a placebo, making us feel better in the short term, while delaying the deeper changes required to solve the real underlying problems. *Digital Dividends* focuses on three areas where complementary improvements are necessary: (1) strengthening the business environment, especially competition policies to curb excessive concentration of market power in a handful of digital platforms but also in other ICT-enabled sectors; (2) improving skills development—not

just ICT skills but, equally important, the “soft skills” that will not be easily replaced by computers; and (3) improving accountability in the public sector, so technology is deployed to empower the poor, not to strengthen control. These are the foundations of economic development—the business climate, human capital, and governance—and though the Internet and mobile phones can help improve these foundations in many ways, new technologies are not a substitute.

Notes

1. Quotations from former US education secretary Arne Duncan, Google chairman Eric Schmidt, economist Jeffrey Sachs, and former US secretary of state Hillary Clinton, respectively, as cited in Toyama (2015).
2. See World Bank (2016b) for a discussion of these and the subsequent examples and specific references.
3. World Development Report 2016 team calculations based on Research ICT Africa surveys in a sample of countries (various years) (World Bank 2016b).

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