

A Data-Driven Approach to Closing the Internet Inclusion Gap

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Connectivity creates opportunities for businesses and individuals to participate directly in globalization (Friedman 2005) and is associated with job creation, productivity gains, and GDP growth (Deloitte 2014). Connectivity is not just a byproduct of progress—it is a crucial enabler. The majority of the world's people are unconnected, and many are using the Internet less than they would if it were cheaper and faster. Connectivity must be improved for the Internet to be globally inclusive and beneficial.

For individuals, the Internet provides a pathway out of poverty. It enables people to share information, access education, transfer funds, and identify savings in a globally competitive marketplace. According to one study focused on the poorest population in East Africa, people with ICT access gained approximately twenty-one dollars more per month than those without access and narrowed their income gap with others in higher income brackets (May, Dutton, and Manyakazi 2014). A similar study based in Peru found that individuals who gained Internet access between 2007 and 2009 obtained household incomes 19 percent higher than those who failed to gain access (Pepper and Garrity 2015).

The economic benefits of the Internet do not exist just at the individual level but apply to businesses as well. Twenty years ago, only large multinationals and some governments could buy and sell products at an international scale. The Internet has democratized globalization (Manyika and Lund 2016). Never has it cost less to connect with and sell to customers around the world, so small businesses can scale. Advances in advertising technologies enable small businesses and entrepreneurs to reach out to niche as well as mass audiences who will find their products useful and relevant.

As a consequence, entrepreneurs and small businesses that may have struggled to grow at a local level can now participate meaningfully in a truly global economy. Moreover, groups that have traditionally been excluded can engage with broader markets. Take the example of Kalpana Rajesh, who started a business in India selling wedding headdresses (*poola jada*) after the birth of her son. She created a Facebook page and started sharing photos and boosting posts to reach people around the world. Soon, her business, Pelli Poola Jada, grew to include forty-five branches and 250 employees—all women, who, because of their work and earnings, gained greater respect from their families and communities.

As Kalpana's example shows, connectivity can provide businesses with the tools they need to grow and, in so doing, enables the creation of new jobs. Yet, particularly in underconnected markets, small businesses may have a hard time filling job openings because qualified candidates have no way to learn about openings or to match their skills to positions. In Kenya, for instance, small and medium enterprises (SMEs) report difficulty finding qualified candidates despite a population of ten million underemployed youth. A significant challenge is connecting labor supply with business demand—a problem that could be solved through technology. Duma Works, a startup based in Nairobi, uses an algorithm to match job seekers to employers (particularly under-resourced SMEs) online or offline using SMS. The company has already helped nearly three thousand Kenyans find jobs at over 250 companies.

At a more macro level, the Internet enables economies of scale, creating more efficient markets for consumers and producers. Traditionally, most Colombian food vendors were required to wake up at 3 a.m. to buy the day's inventory at expensive local markets. Agruppa allows these vendors to place their orders via SMS or app, aggregating them into one large order to buy wholesale, reducing prices by up to 30 percent. Agruppa receives the goods and distributes them to the vendors. As a result, consumers enjoy healthy, fresh food at affordable prices, while small vendors enjoy bigger profits and better working hours.

These are just a few of the ways in which connectivity is being used to solve some economic challenges in developing markets. There are countless more examples just like them.

When we consider them in the aggregate, a picture forms of how connectivity can transform the world and move us closer to achieving sustained

economic growth in the least developed countries. Research that unpacks the relationship between connectivity and development is needed to inform policy decisions and to guide the allocation of resources. The chapters in this volume provide a tremendous contribution to our understanding of the complex and endogenous relationship between connectivity and development. They add to the growing body of evidence demonstrating that connectivity is a catalyst of economic growth, not the coincident.

But, perhaps ironically, the people and communities that can benefit most from connectivity are currently least connected. Today, 4.1 billion people do not have access to the Internet, and 90 percent of the unconnected population lives in the developing world. The largely market-driven growth of connectivity has brought us to this point. If we continue on this trajectory, connectivity may never reach those whose lives it can transform the most.

Ensuring the equal flow of connectivity throughout the world is therefore extremely important, lest we run the risk of exacerbating existing inequalities (Pepper and Garity 2015). But united, the private sector, governments, communities, and civil society have an opportunity to close the inclusion gap and break down global inequalities in a way that is historically unprecedented.

First, we must ensure access to the unconnected. This will require solving difficult technical challenges to bring infrastructure to low-density and remote corners of the world—for example, building last-mile links where nonexistent, and providing high-capacity backhaul and middle-mile infrastructure through new technologies and satellites. Second, we need to *improve* connections for the underconnected. This means expanding and extending the next generation of Wi-Fi so that people can upgrade from 2G to 3G and 4G networks. Third, increasing relevant content in local languages requires incentives for local content production and translation of existing content. Finally, we must make it a priority to close the connectivity gender gap. Many reasons explain why women are not online—including affordability, relevance, and readiness. To be sure, narrowing the gender gap will require long-term, multi-pronged, and context-specific approaches, but we can start by improving educational opportunities available to women, creating greater awareness of the Internet and the benefits it can bring, and making it more affordable and acceptable for women to obtain connected devices.

We share a responsibility and global imperative to ensure that the benefits of connecting to and using the Internet do not flow exclusively to those who have historically benefited from technological advances. We need to come together as a global community to bring greater access to the unconnected and, just as important, better access for the underconnected.

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