



Development 2.0: *Transformative ICT-Enabled Development Models and Impacts*

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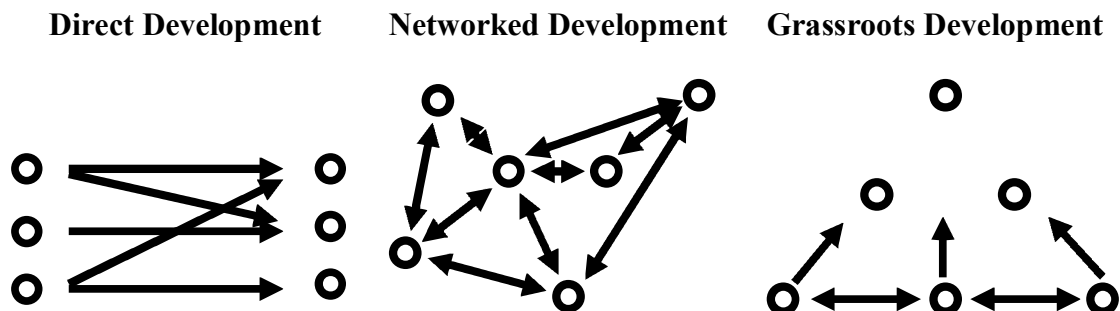
Where are the Amazon and eBay for international development? If we could find them, they might represent "Development 2.0": new ICT-enabled models that can transform the processes and structures of development. In this briefing, I will trace out some examples, and analyse how they are changing the way that we "do development".

The foundation for these changes has been the rapid diffusion of ICTs into the developing world. In 1998, less than one out of every 100 inhabitants in developing countries was an Internet user. By 2008, that figure was 22 out of every 100. In 1998, 2 of every 100 inhabitants in developing countries was a mobile phone subscriber. By 2008, that figure was 55 out of every 100.ⁱ Shared usage takes this further: even in the world's poorest continent, Africa, an estimated two-thirds of the population now has access to a mobile phone.ⁱⁱ

What happens when you start to connect the world's poor into the infrastructure for a digital economy? What happens is that some of the basic assumptions about barriers to development might no longer apply. Some examples follow, looking first at development models, and then at development impacts.

Development Models

Turning first to potentially-transformative development models, at least three can be identified:



Direct Development delivers resources and services without the intervention of traditional development actors; where those resources and services can be digitised. For example, Kiva (www.kiva.org) and similar organisations like MYC4 are web-based, peer-to-peer, micro-lending platforms. Previously, if I wanted to contribute to development assistance, that might happen by donating to a charity; or even more indirectly in payment of my taxes. The chain from rich Northerner to the ultimate intended beneficiary of a poor Southerner was long with multiple links, inefficient with each link in the chain costing money to run; and ineffective with each link in the chain potentially susceptible to corrupt syphoning off of funds or imposition of other priorities.

Kiva and the like strip out most of the intervening steps. They allow an individual in the North to give money to a selected micro-entrepreneur in the South. Not only is this more efficient and effective, but also potentially tapping sources of capital in the global North that might otherwise be diverted to other purposes.

Networked Development occurs neither solely through the state and similar agencies nor through the market, but through a mesh of actors and institutions that are connected and can act together through ICTs. Examples of this in terms of networks of individuals – both crowdsourcing and crowdvoicing – are given below, and we would generally think of models like this where networking was intentional. But it is equally likely that ICTs will create unexpected networks. One may be arising around citizens, governments, mobile phone companies and taxation. Governments, in Africa particularly, have little fiscal relationship with their citizens who neither pay taxes to, nor receive welfare from, government. This undermines governance.

But phone operators are key, and growing, contributors of tax revenues – the largest tax contributor in some African countries.ⁱⁱⁱ And almost uniquely among tax sources, phone companies derive their revenue from a large and increasing mass of the citizenry of the country (around 30% of the cost of mobile phone ownership goes to pay tax). They are, therefore, indirectly providing the tax connection between citizens and governments in developing countries. The reverse flow is also increasingly possible via mobiles – social protection payments and cash transfers from government can be undertaken via mobile phones that directly reach the majority of the population. So mobile phones and operators are creating a new fiscal network, one that connects government and citizens financially in a way that has previously been absent.

Grassroots Development occurs from within poor communities, as a result of ICT-enabled empowerment. Examples are described below in the discussion on digital empowerment, but the potential arises because of the limitations of tools that were earlier placed in the hands of the poor. ICTs arguably have a greater efficacy than previous technologies because of their flexibility, their multi-functionality, their connectivity, their mobility, their pervasiveness, and their relatively low financial- and skill-cost entry barriers. They may also have an advantageous psychological efficacy, with anecdotal evidence that ICTs inspire more hope than other tools; hope being a strong catalyst to development action at the grassroots.

Development Impacts

These models are a useful way to conceptualise emerging processes and structures, but these could only be judged transformative if they are having real and significant development impacts. Evidence is only just emerging, but five types of impact are starting to be seen, as described next.

Connecting the Excluded: the world's poor have historically been excluded and disconnected from information, and from potential suppliers and customers. ICTs can cut across these historical barriers and help connect the poor. For instance, as Mark Granovetter famously identified, if you want to get a job it is not the strong, close ties of immediate family and friends that help (they only know what you already know). Instead, it is the weaker ties of more distant social connections. Yet the poor lack such connections.

ICT can help by linking to a much wider social world through information exchanges. One such is Babajob (www.babajob.com), a networking site on which potential employers in urban India can post details of low-skilled, informal sector jobs like cleaners, cooks and the like. To reach beyond those with Internet access, the system sends job alerts via SMS to those who might be looking for such a job, or who might know someone who is. At present, more than one million alerts are sent out every month; breaking through the traditional obstacles to information flow.

Disintermediating: where the poor are not disconnected, they are often connected via gatekeepers of dubious quality. To access government services, they may have to go via a corrupt official. To access finance, they may have to rely on a usurer charging extortionate interest rates. To access agricultural assistance, they may require an extension officer who visits only once in a blue moon.

Many e-business models rely on "cutting out the middleman", and ICT offers the same facility for international development. The Bhoomi project has provided e-government services in India's Karnataka state since 2001; for example issuing land ownership certificates to farmers who need these to obtain bank loans. An impact assessment shows it does what one would expect of an ICT project: cutting error rates and improving service quality.^{iv}

What it also does is disintermediate. Previously, farmers had to apply for their certificate via a government official. In something like half of cases, that official would demand a bribe before they would issue the certificate (averaging around US\$3; equivalent to a day's income in rural India). After computerisation, those officials have been significantly removed from the process, as farmers largely get their certificates issued online by visiting a local Internet kiosk. As a result, less than 1% report having to pay a bribe.

Digital Production: the poor have always been producers, largely of agricultural produce for their own subsistence or for sale, often at low prices. But they have lacked access to resources and capabilities that would help them break out of the grip of agriculture and poverty. The diffusion of ICTs is increasingly giving them access to the means of production for a digital economy; offering radically new ways of earning a living.

Txteagle (<http://txteagle.com>) is an example that brings crowdsourcing to the mobile phone base in Kenya. It takes simple tasks suitable for a voice-and-SMS phone and outsources them in bite-sized components to those who have both a mobile and time on their hands. Examples of such work include translation of text into local languages, transcription of audio clips, and input of survey data for development agencies working in a local area. Payment can be either airtime or cash using Kenya's M-PESA mobile currency system, and there has been a specific focus on pushing work out to the rural poor.

Digital Innovation: having access to ICT tools means some of those at the bottom of the pyramid have moved beyond production to innovation. They have appropriated the technology to such an extent that they start to do new things with it.

Many such uses are digital memes: ideas that originated somewhere; perhaps simultaneously in the slum areas surrounding most Third World cities that are crucibles of both poverty and creativity. Beeping (or flashing) is one such: hanging up a call before it is answered. This has developed into a free messaging system. Street hawkers allocate different ringtones to different customers, enabling a free "come sell to me" message. Use of airtime as currency is a similar development. Family members in distant cities remit "money" back home as an airtime transfer. This can then be used in the village to pay for goods and services from those traders who themselves have a mobile.

Collective Power: many poor communities have a collective strength; for example working together on farming tasks that no individual household alone could complete in time. Yet it can be hard for them to express their collective power to outside bodies, such as government.

ICT enables "crowdvoicing": the capture of group knowledge and opinions within a community, and its dissemination to a broader audience. Community radio has changed from a small-scale version of the one-way-broadcast approach of national radio stations. Through SMS, phone calls, mobile phone clip recordings, and PC-based audio, community members can contribute content and have their voice heard on such radio stations.

One step further, and ICT can be used to turn that voice into decision-making power. In Belo Horizonte, Brazil, the city government allocated a US\$11m decision to an online vote of ordinary citizens; who were given a choice between spending money on a new sports complex, library, street renewal, or commercial centre regeneration. This "e-participatory budgeting" initiative drew in more than 500,000 votes (the sports complex won); seven times more participants than seen with earlier non-ICT-based participatory budgeting.^v

Conclusions

So how is all this happening? At root, it stems from the power of information and communication technology.

Some of those powers are generic. ICT can cut costs so dramatically that new ways of doing things become possible. The digitisation of data is part of that, allowing reproduction and communication of information at virtually zero cost. And the increasingly ubiquitous connectivity of ICT allows new relations and network structures to exist.

General technical innovations will continue to drive this process forward. There are also specific innovations for the bottom of the pyramid that are helping. Some of these are technical. Movirtu's MXShare provides device-independent mobile services for users unable to afford a real phone. It gives them a virtual mobile phone number and account that can be accessed via a PIN from any borrowed or communal phone. The One-Laptop-Per-Child project, though much criticised, is putting digital processing and communication into the hands of millions of children for the very first time; a vast social experiment that will no doubt catalyse many new Development 2.0 initiatives.

Development 2.0 is being enabled by business innovations, including simple ones like pre-paid mobile tariffs. These broke the logjam of unaffordability, allowing the poor to buy airtime as and when money was available, and are now universal throughout the poorer parts of the developing world. Some innovations combine business and technology. For example, Kenya's M-PESA system, mentioned above, provides a low-cost digital money platform for mobiles, onto which all sorts of new financial applications previously denied to low-income users – saving, lending, insurance, etc – are being mounted.

In discussing Development 2.0, it is important we keep our feet on the ground. We have seen this in e-business. Talk of the "new economy" or "weightless economy" soon gave way to a realisation that the old economy was still very much around. That, for every Amazon or eBay, there were hundreds more "clicks and bricks" operations representing a more incremental than transformative approach.

The same is true for international development. Dig behind the images of disintermediation, for example, and a rather different picture emerges. Farmers using the Bhoomi project still go through an intermediary; swapping the local government official for the local Internet kiosk owner. To make its global financing chain work, first Kiva itself and then a series of local partner organisations have to sit between lender and borrower.

For some examples, then, Development 2.0 may be too optimistic. Perhaps these are Development 1.5 at present, with a promise of greater change to come. But which will be the amazon.com success and which will be the beenz.com failure, we don't yet know. Indeed, in a further echo of the dot.com boom and bust some of the initiatives cited here are long on media hype and PR; short on facts and figures about actual impacts – how many poor people actually involved; how much money saved; how

much income generated. Hopefully we will see some solid and objective research emerging on these in the not too distant future.

In the meantime, we can celebrate the fact that the foundations and assumptions of international development are changing. The tools for a digital economy are now – and will increasingly be – in the hands of the world's poor. Our view of them can start to migrate: from seeing them as victims to seeing them first as consumers, then producers, then innovators of a digital age. And, as we do so, changing our views on the processes and structures of socio-economic development: from Development 1.0 to Development 2.0.

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<http://www.manchester.ac.uk/cdi>

ⁱ ITU. *ICT Statistics Database*, International Telecommunication Union, Geneva, 2010;
<http://www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx>

ⁱⁱ Heeks, R.B. *Beyond Subscriptions: Actual Ownership, Use and Non-Use of Mobiles in Developing Countries*, ICT4D blog, 2009; <http://ict4dblog.wordpress.com/2009/03/22/beyond-subscriptions-actual-ownership-use-and-non-use-of-mobiles-in-developing-countries/>

ⁱⁱⁱ Heeks, R.B. *Are Mobile Phone Companies the New Treasuries of Africa*, ICT4D blog, 2009;
<http://ict4dblog.wordpress.com/2009/01/15/are-mobile-phone-companies-the-new-treasuries-of-africa/>

^{iv} Bhatnagar, S.C. and Singh, N. *Assessing the Impact of E-government: A Study of Projects in India*, Information Technologies and International Development, 6(2), 109-127, 2010;
<http://itidjournal.org/itid/issue/view/31>

^v Peixoto, T. *e-Participatory Budgeting*, University of Zurich, 2008;
<http://edc.unige.ch/edcadmin/images/Tiago.pdf>