



## **Taking risks openly**

Debating technologies for equitable access<sup>1</sup>

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<sup>1</sup> This is a summary article reflecting papers and commentaries on the issue of tools and technologies for equitable access to ICT infrastructure. It is part of a series commissioned by APC for an event on equitable access which took place in Rio de Janeiro in November 2007. The papers and commentaries can be found at: [www.apc.org/en/pubs/research](http://www.apc.org/en/pubs/research)

“Sometimes doing the wrong thing with technology is better than doing nothing,” says research associate at the South African-based Shuttleworth Foundation, Steve Song. And, he suggests, when it comes to technology, the unexpected should be encouraged to happen.

Song, an open source advocate, was responding to an issue paper by technical activist Alberto Escudero-Pascual, entitled *Tools and technologies for equitable access*. This is one of four papers commissioned by the Association for Progressive Communications (APC) on equitable access to ICT infrastructure.

“It is important to recognise in the implementation of communication technologies that the most useful function of the network may not be what you predict,” Song elaborates in his commentary. Expect the unexpected. For instance, many surprising uses have also been made of mobile phones, including using short message service (SMS) as a tool for mass political organisation, “beeping”, credit transfers, and mobile banking. “None of these innovations were predicted by the original network implementers,” says Song.

Escudero-Pascual’s analysis of WiFi (wireless communications technologies) offers fascinating insight into just how a grassroots, technology-led approach can harness the potential of ICTs for equitable access. For example, in Peru WiFi is used to provide health and agricultural services in Amazonia and Huaral. Words like “revolution” are used in this context – and it is easy to see why. “WiFi has dramatically increased access to ICTs by extending existing infrastructure to areas where traditional operators have little interest,” writes Escudero-Pascual. “The way that WiFi-based solutions are spreading is similar to the revolution in open standards or the proliferation of personal computers some twenty years ago. There was a need, the technology was available, and a standard aiming for interoperability and mass production was created.”

Escudero-Pascual says learning from the WiFi experience is crucial when planning policy and regulatory interventions, and points out that the decision to make spectrum available was a fundamental one that dramatically altered the future of wireless deployment. Affordable access is possible when combining technology accessibility with the possibility of new business opportunities.

Yet how do policy-makers legislate unpredictability? Some argue that technology for public good *does* need to be managed tightly to maximise its effectiveness – the case of the haphazard evolution of telecentres in South Africa is a case in point.

Carlos Afonso, the director of RITS, an ICT for development NGO based in Brazil, says unanticipated events – such as stress on broadband supplies from local networks set up at homes – can mean that quality and reliability becomes a problem. Making policy decisions in these instances can be difficult.

The answer, instead, lies in letting go: while technical activists should strive to deploy robust technologies in community connections, policy considerations should, where possible, remain

technology neutral. “[I]t is important not to over-design solutions,” says Song. “It is more important to make communication technology as inexpensive and simple to use as possible, then allow users to innovate their own solutions.”

What practitioners call “open standards” (which allows for interoperability between products), “open hardware”, and the now more commonplace “open source”, all suggest similar outcomes: they avoid vendor lock-in, the monopolisation by any particular company of any technological possibility, and encourage knowledge transfer – another industry buzzword, which simply means teaching others what you know.

“It is difficult to imagine sustainable development without knowledge transfer and technology ownership. Unfortunately, many governments and other institutions have failed to demand openness in their technological investments, and in many cases have played a questionable role in locking their citizens and consumers into a certain technology or product,” writes Escudero-Pascual. Unhealthy market monopolies are undesirable, and, he argues, by avoiding vendor lock-in, “fair market competition” can be ensured.

“Open hardware allows small and medium enterprises, community projects and entrepreneurs to manufacture and assemble hardware locally. With free software, projects can learn from existing experiences, integrate solutions and ultimately share their results with others,” he says.

For Song, the benefits of “openness” – while desirable – also need to be qualified. Open source, he says, is not always the most cost-effective choice for poor communities, and proprietary is not *always* bad. Skype, for example, is a proprietary but free-to-use internet voice application for PC-to-PC calls. It is platform-neutral, and, unlike other products, can run on almost anything. “[P]retty hard to argue against,” quips Song.

The way forward for activists, he says, is to insist on open standards, but to allow hardware and software to be chosen on its merits: “I think legislating the use of open source in government is a bad thing. It is a bit like forcing a child to eat spinach. They will always find a way of avoiding it.”

Another area in which open source may not be competitive is in energy consumption – for instance, Open Office has been criticised for consuming too much energy in comparison to other applications. For Escudero-Pascual, the energy challenge is going to become one of the core future challenges for ICT access to the poor, and it emphasises the importance of developing low-cost and low-power computing solutions.

Here, Song says, the market should be encouraged to fill the gaps. While the One Laptop per Child (OLPC) project has been criticised for being “centralised and top-down”, he says it is “worth pointing out that even if the OLPC is a completely wrong-headed initiative, it has had

the very important effect of attracting computer manufacturers into the low-cost laptop market.”

However, when it comes to actually implementing the solutions, many activists see a greater role for the state or international donors. The idea that the market will take care of everything is a fallacy, Escudero-Pascual suggests. Developed countries needed funding to ensure access to information amongst poor communities, and, he says, there is no reason to expect this to be any different in developing nations: “There is an expectation that the private sector will address the lack of infrastructure and services in remote rural areas, ignoring the fact that remote communities in the ‘North’ gained access to infrastructure through the support of public funding.”

Putting faith in the market runs the risk of global monopolies too easily taking over. While local services in local languages are key for equitable access, Escudero-Pascual points out that investment in technology and infrastructure is negligible when it comes to local business models that adequately express local cultures and conditions. “The long-term impact of this trend is a lack of deployment of physical and service infrastructure in the South [and the] concentration and control of information in small parts of the North,” he warns.

Afonso echoes this concern: “The telecommunications cartels seem not to care when a community organises to redistribute a broadband connection through a WiFi network. But when a whole town decides to create its own community network, they certainly react, although the services involved are ‘beyond regulation’.”

Open networks, open standards, and open source help communities unsettle market monopolies and empower themselves. But while good people-focused policy requires clear-headed strategy, it is something Afonso is concerned about: “In less developed countries, this public policy objective remains mostly wishful thinking, or an uncoordinated effort.”

“The costs of maintenance, training and internet access are very seldom discussed as part of existing projects,” says Escudero-Pascual. “Most of the initiatives seem to be driven by vendors without a solid understanding of community needs, and no real field experience.”

Policy-makers need to take risks, adds Song. Equitable access, like open source, might feel a bit clumsy at first, but its learning and possibilities accumulate. He points out that this was the case with the Eastern Africa Submarine Cable System (EASSy) project, which fired up fierce debate about its ownership structure. “While the EASSy project has ended up with as complicated an ownership framework as it is possible to imagine, arguably it has been a spur for other cable initiatives, such as SEACOM, to choose a transparent, open access ownership model,” he says.

“We live in a time when technology is increasing in power by orders of magnitude every few years, while, amazingly, costs continue to come down,” says Song. “This means that technology... can be put in the hands of small organisations or even

individuals. Given the opportunity, this has the potential to be a profound lever for social and economic growth.”