# Reimagining Participation: Opportunities and Challenges of the Open Source Model of Collaboration for Development Thinking and Practice

## Evangelia Berdou

**Abstract** Science and technology have a controversial record in alleviating poverty, especially in the context of developing countries. The technology push model – the idea that technological solutions can be transferred without problems across different contexts – has received much criticism within the development community. However, the latest wave of innovations, especially in the area of information and communication technologies (ICTs), seems to mark a sharp break with the past, promising increased access to information and opportunities for South-led innovations.

## 1 Introduction

The new and creative ways in which mobile phones are used in the South are seen to overthrow barriers to access and are promising to democratise access. The mobile phone revolution in the South is paralleled by and intertwined with another important set of developments emerging on the basis of the networked, open source model of collaboration (Benkler 2006; Demil and Lecocq 2006). At the heart of 'open source' lies a process of decentralised collaboration that involves the creation of an 'information commons', a set of shared resources that anyone can use or modify (Ostrom and Hess 2007). This process has supported the creation of Wikipedia, the world's largest online encyclopaedia, and underlies the function of platforms like Ushahidi, a tool created during the 2008 election crisis in Kenya by a group of programmers and bloggers to 'crowdsource', i.e. aggregate and share individual reports on incidents of violence erupting throughout the country that were collected through SMS messages and the web.

Open source tools and the processes of content creation and decentralised collaboration that they support appear to augment the problem-solving capacity of the development community, enable citizens in the South to generate their own data, and bring to the fore a new set of development actors, technological communities coalescing around technologies and shared ideals.

Are these technologies indeed transformative, or is it business as usual? If one accepts the premise that all technologies, like all information, have a politics, what are the politics of the next generation of information and communication technologies (ICTs)? This think-piece presents the key insights of discussions around these issues between technologists, development practitioners and academics that took place as part of the Reimagining Development initiative.

## 2 The many faces of decentralised, online collaboration

Open source software is developed by groups of programmers distributed all over the world. It describes a methodology for organising collaboration and labour, a set of values that guide information sharing and decision-making in the context of collaboration and a set of institutional innovations that are meant to protect the results of the collective effort.

At the heart of the open source model lie the principles of reciprocity, peer review and the free flow of information. Open source does not simply

offer us access to ready-made solutions, it provides access to the building blocks, the blueprints of these solutions that allow us to modify and adapt them – to do clever things with them beyond that envisaged by their creators. In open source, the fruits of the collective effort are protected from commercial misappropriation through legal licences that ensure that the programmes will always be available to use, distribute and modify. These legal licences form part of an effort to establish an information commons – a collection of shared resources that can seed innovation, creativity and new kinds of business.

Online collaboration and open source cover a range of different processes, not all of which involve the creation of a commons and not all of which rely on collective decision-making. There are irreducible differences between, for exampleWikipedia, open source software projects, and an initiative like Clickworkers (a NASA project that uses volunteers for routine scientific analysis), in terms of the skills required to participate, the organisation of production, the ownership over the tools, the nature of the outputs of collaboration and the kinds of social ties being created and sustained through the process of collaboration. In fact, collaboration and participation are often very distinct. Some user-generated content services, such as the photo-sharing platform Flickr, involve *weak* rather than *strong* forms of collaboration. Strong collaboration requires a shared vision and a common set of norms and rules to work successfully, whereas weak collaboration is built around individual acts of sharing (of photographs, videos, etc.) (Aguiton and Cardon 2007).

This ecology of collaboration and participation is evolving rapidly, as firms, and increasingly the development community, experiment with blending different approaches and paradigms to pursue societal and economic goals. 'Open innovation', for example, describes a business model that is aimed at enabling companies to benefit from the input of expert users and clients (Chesbrough 2006). The central idea behind open innovation is that in today's information economy, traditional organisations cannot be expected to rely on their own research and development (R&D) efforts. In order to be successful, they need to look beyond their own boundaries. Similar to open source, open innovation provides a framework for the co-construction of

knowledge, but it also signifies a more controlled process for organising the process of co-construction that may not involve total access to the 'blueprints' of tools and solutions, and which may not endow users with the rights of use, modification and distribution of open source.

The Rockefeller Foundation is an example of an organisation that has adopted the open innovation model to develop technological solutions for the poor. They partnered with Innocentive, a for-profit organisation that provides access to a 175,000 people-strong web community of engineers, scientists and business experts for any organisation interested in developing a particular solution.[1] In Innocentive, the process of matching problem-solvers with problem-seekers works through openly broadcasting a specific task. Within the context of the particular project, tasks are developed in collaboration with NGOs and individuals.

New technologies are also being used by the global technical community to support relief efforts and enable communities on the ground to generate their own data for planning, coordination and reflection. In the recent Haiti crisis, for example, contributors from across the world used Ushahidi and OpenStreetMap, an open source platform that has been described as the 'Wikipedia of maps', to provide relief workers on the ground with updated maps of affected areas. The speed which volunteers across the world responded to the call for help has been remarked upon by the media and the international community. Another example is the Map Kibera project, located in one of the largest slums in Africa that is still designated as a forest on official maps, which has used OpenStreetMap tools and techniques to create, with the help of local youth, the first public, digital map of the area.[2] The baseline map has been enriched with information on security hotspots, water and sanitation, medical and educational resources that would, in principle, support better delivery of services.

To summarise the points made thus far, open source collaboration within the context of development is:

● Giving rise to networks of innovation and new actors, such as technical communities coalescing around technologies, that subscribe

to the ideals of openness, transparency and access to information. Within the development arena, these new actors push forward the agenda of what we can do with information by delivering low-cost tools and resources that can be used to serve local needs and agendas;

● Providing development organisations with templates for collaboration and architectures of participation that expand their problem-solving capacity and ability to respond swiftly and effectively to crises;

● Building up an information commons, which can be used to support coordination and collective action.

### 3 The challenges of decentralised collaboration

Underlined by the values of access, collaboration and transparency, the next wave of sociotechnical innovations emerging on the basis of open source collaboration holds promise for development practitioners. The possibilities for self-determination afforded by low-cost solutions that can be easily adapted to local contexts suggest paths to grassroots technological development that echo the ideals of the appropriate technology movement. At the same time, the ideas of distributed authority and bottom-up participation espoused within open source, find fertile ground with researchers and practitioners operating within the participatory development paradigm. This ideological resonance opens up new spaces for collaboration and experimentation between development and ICT practitioners and at the same time, challenges the development community to develop its understanding of these new technologies and the actors driving their development.

Ten years of studies of open source software development have led to the following conclusions:

● *Openness does not necessarily lead to equity*. Like participation, openness is multi-dimensional: some projects may be open in principle, but may have high barriers to entry for new contributors due to their complexity, lack of supporting learning materials or strict policies for accepting contributions.

● *Mobilisation is difficult*. Very few open source projects actually manage to enlist large numbers of contributors and achieve a mature

state, a stage in their development where they are to become really useful. Although the structure of participation is specifically designed to minimise communication costs, it takes a lot of effort to bring people up to speed and to educate them in the ways and norms of a particular community of practice.

As a recent study of the Map Kibera project indicates, access to skills and the internet are still important barriers to participation and much more than open access to these platforms is needed to translate the mobilisation around the creation of an information commons into meaningful action (Berdou 2011).

Some of these insights would sound familiar to development researchers and practitioners. The politics and multi-dimensionality of participation, of the knowledge itself, and the difficulties of mobilisation are common themes in the relevant literature (Gaventa and Cornwall 2006; Stirling 2008). Despite the valuable lessons that can be learned from and across the two disciplines – ICT development and international development – similarities can be misleading.

Throwing technology into the mix radically changes the character of participation and the nature of the relationships that it weaves together. Technical choices are political choices, and technology can be as much an agent of change as an agent of the status quo (Tehranian 1990). Although different communication technologies may lend themselves to different uses, their meaning is not necessarily given. The character of technologies is shaped by a multitude of choices both at the level of production and the level of consumption, about who gets a say in how tools work, what information is generated, and by whom, and how it is used (Mansell 2006). In order to understand the possibilities supported by new technologies, we therefore need to understand them as parts of different social processes: those that support their production; those that define the terms of their use and those that consolidate or change these initial meanings at the time of consumption. Technologies such as mobile phones, that may appear as highly decentralised at one level, can, with their level of use, be extremely centralised at another: mobile phone providers, for instance, can exercise a great degree of control over what kinds of information people are able to access and exchange.

Amidst the landscape of plurality and diversity that has been described, major firms are positioning themselves to reap the benefits of the mobile phone revolution in developing countries. Companies like Microsoft, Cisco and Vodafone have, in recent years, made significant investments in the area of information and communication technologies for development (ICT4D), which is seen as paving the way into emerging markets. The movement in favour of open access, transparency and sharing of knowledge are counteracted by policies aimed at consolidating intellectual property monopolies and cracking down on networks for peer information exchange (as evidenced by the recent UK Digital Economy Bill).[3]

The ICT4D literature, literature on the politics of knowledge and participation, and wider scholarly work on the connections between information technology, democracy and modernisation have valuable lessons to teach us about the implications of the latest generation of ICTs and the way that they become incorporated into existing discourses and agendas. Nonetheless, in-depth understanding of the possibilities and challenges of new technologies and their character as social processes presupposes a degree of technical knowledge. Furthermore, in order to comprehend the political choices and the social processes that become encoded within and underlie information technologies, development practitioners and academics need to be willing to engage more with technology: to learn about their limits, blind spots, points of control, interactions and potential alternatives of different tools and platforms.

## 4 Conclusions
This Reimagining Development initiative set out to explore some of the implications of the latest generations of ICTs for development, their limits and potential benefits for the poor. The overview of recent development projects inspired by these new innovations indicated the need for further study, as well as some of the lessons that can be

drawn from related areas of work, such as the literature on open source software development, the democratisation of information, and ICT4D.

For formal development organisations these developments are appealing for a number of reasons. They offer cost-effective ways of tapping into the experience and expertise of different networks of professionals and offer them the opportunity to organise labour in ways that improve their problem-solving capacity and their operations. For development practitioners, particularly those working within the participatory development paradigm, the new array of tools can help extend their ability to engage and empower communities on the ground by helping them generate their own data. For technology practitioners, the processes supported by new technologies offer the means to contribute to development processes at a scale and with an intensity that was not possible before.

However, the shaping of these possibilities and their translation into change that benefits the poor are not straightforward. We often forget that each generation of ICTs has come with its promises for democratisation and empowerment and that each has failed to live up to the full extent of the expectations that it gave rise to. The latest generation of ICTs can also be used to disempower as much as empower communities, for example by reducing citizens to the role of data sensors. Many of the forces that shape the current information and communication landscape are working to strengthen the privatisation of knowledge that open source communities are challenging.

The key lesson that emerged from this Reimagining Development initiative is that the next generation of ICTs presents the challenge of enabling new conversations and practices that can support frameworks of participation, and solutions informed by nuanced understandings of context and power and of the dynamics of technology itself.

## Notes
1 www2.innocentive.com/rockefeller-foundation-and-innocentive-renew-partnership-linking-non-profit-organizations-world-clas (accessed 25 May 2011).

2 www.mapkibera.org/ (accessed 25 May 2011).
3 www.legislation.gov.uk/ukpga/2010/24/contents/.

## References

Aguiton, C. and Cardon, D. (2007) 'The Strength of Weak Cooperation: An Attempt to Understand the Meaning of Web 2.0', *Communications and Strategies* 65.1: 51–65

Benkler, Y. (2006) *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, New Haven CT: Yale University Press

Berdou, E. (2011) *Mediating Voices, Communicating Realities: Using Information Crowdsourcing Tools, Open Data Initiatives and Digital Media to Support and Protect the Vulnerable*, Final Project Report, DFID project No PO 40035949, Brighton: IDS

Chesbrough, H.W. (2006) *Open Innovation: The New Imperative from Creating and Profiting from Technology*, Boston MA: Harvard Business Press

Demil, B. and Lecocq, X. (2006) 'Neither Market, Nor Hierarchy Or Network: The Emerging Bazaar Governance', *Organization Studies* 27.10: 1447–66

Gaventa, J. and Cornwall, A. (2006) 'Challenging the Boundaries of the Possible: Participation, Knowledge and Power', *IDS Bulletin* 37.6: 122–8

Mansell, R. (2006) 'Ambiguous Connections: Entitlements and Responsibilities of Global Networking', *Journal of International Development* 18.6: 901–13

Ostrom, E. and Hess, C. (2007) 'Introduction: Understanding Knowledge as a Commons', in C. Hess and E. Ostrom (eds), *Understanding Knowledge as a Commons*, Cambridge MA: MIT Press: 3–26

Stirling, A. (2008) 'Opening Up Or "Closing Down": Power, Participation, and Pluralism in the Social Appraisal of Technology', *Science, Technology and Human Values* 33.2: 262–94

Tehranian, M. (1990) *Technologies of Power: Information Machines and Democratic Process*, Norwood NJ: Ablex Publishing