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A Response to "A Dialogue on ICTs, Human Development, Growth and Poverty Reduction"

Essay by Hernan Galperin, September 17, 2009 in response to A Dialogue on ICTs, Human Development, Growth, and Poverty Reduction

In general terms, I found the paper (A Dialogue on ICTs, Human Development, Growth, and Poverty Reduction) fascinating and provocative, as it is one of the first attempts that I am aware of to link two insofar separate fields, i.e., organizational theory and ICT4D. The comments below are intended to contribute to building this new framework, which hopefully could help not only to orient grant-making but also to advance the ICT4D field in general. They start from the more theoretical to those closer to real-world issues in the ICT4D field, and stress points of weakness which I think if addressed would strengthen the new framework. I also suggest areas to which the openness concept could be extended.

1. At the higher theoretical level, it would be helpful to disentangle the various things that are now associated with the openness concept. For example, at times openness is used in connection with examples of better functioning markets through ICT interventions, while at others it is used in relation to novel ways of organizing the production of goods and services different from markets and hierarchies (as in peer production). A better articulation with the collective action and transaction costs literature might help disentangle the concept and better substantiate the arguments made. In particular the work by Ostrom on the governance of commons regimes deserves more attention. It is obvious that the fundamental problems identified by this literature (free-riding, monitoring and sanctioning costs, coordination problems in complementary goods, etc.) do not disappear with new ICTs, though they can certainly be addressed differently and possibly more effectively, leading to different forms of social organization. Spelling out how the diffusion of new ICTs helps address some of these problems in novel ways seems to represent one of the theoretical cornerstones of the open ICT4D framework.

2. The openness argument clearly works well for the production of intangibles. Yet when one moves to other goods and services the argument is not so straight forward. As Benkler and others recognize, openness works for intangibles because they are non-rival and production can in most cases be modularized into small contributions that are not necessarily sequential. When one moves to rival goods the story is quite different. Of course, the concept can still work and has been tested repeatedly. In a paper written with François Bar a few years ago, we tried to identify the condition under which broadband service could be more efficiently provided cooperatively under an open spectrum regime and public-private partnerships in infrastructure building. [1] A recent paper further examines the development impact in Brazil of what we termed microtelcos. [2] Yet it is important to recognize the limitations of openness as an organizing principle, by identifying the conditions under which it is more desirable to production under markets or hierarchies and why. This is precisely where Ostrom and others have made important theoretical contributions.

3. Many of the examples given in the paper about the positive impact of open ICT4D could be summarized into a single concept: good governance. It is well established that good governance (i.e., rule of law, freedom of speech, government accountability, etc.) is a key development input that combines both intangible and tangible components. Some of the most convincing examples

in the paper point into this direction, i.e., how open ICT4D can make decision-makers more accountable and increase opportunities for participation in democratic government. This is another topic in which the paper could be better articulated with the extensive literature on why public goods, and in particular good governance, are so poorly delivered in developing countries (e.g., the work of Acemoglu and Robinson, to mention two Boston locals).

4. Including more examples from beyond intangible goods would really strengthen the argument and provide a more general vision. Otherwise the debate may be limited to the well-known discussion about the need to reform IPR regimes. In fact I generally believe that the importance of IPR reform is overplayed in the development agenda. In most Latin American countries access to digital content, software and other intangibles is effectively open through widespread piracy (sorry, through unauthorized distribution). There is ample evidence that knowledge creators in the South (from software companies to artists to scientists) care little about an IPR regime which most regard not only as outdated but also as unenforceable. [3] Changing the legal terms of access to digital content for consumers will likely have a marginal development effect. More significantly, as the paper correctly points out, is the effect that such changes may have on the modes of digital content production, because this involves building local capacities, a key development externality of commons regimes.

5. The last point is closely related to another fundamental issue: human skills. The open ICT4D framework works well if one assumes agents already possess some of technical skills necessary to use ICT tools, and the institutional environment is sufficiently amenable to change. Leaving aside the second point, the problem one often finds in developing countries are related to 1) the uneven distribution of the basic skills required for meaningful participation in a more open network environment; and 2) a related scale problem: since only a few people possess these skills, cooperative initiatives never reach the scale where network effects kick in, and so those skilled are less motivated to contribute (a good metric: looking at the differences in the quantity and quality of the articles found in Wikipedia in English vs. other languages). It is a rather obvious point but fundamental nonetheless in terms of the power law distribution of these skills in developing regions which makes it harder to resolve collective action problems.

6. A final point relates to the emphasis on net neutrality as a fundamental ICT4D issue. As in the case of IP law, I believe net neutrality is overplayed as a relevant issue for developing countries. Of course this does not mean that Internet censorship or violations of privacy are acceptable: freedom of speech and privacy are fundamental democratic rights that need to be strengthened in developing nations, both online and offline. My concern is a pure cost-benefit one: deploying the infrastructure to deliver quality broadband services is costly. In thin markets, allowing certain levels of bundling between infrastructure and content may prove effective to stimulate investment and ensure that scarce resources (e.g., backbone capacity) is put to its most socially beneficial use. This is also why I have generally opposed regulating broadband quality: because it imposes additional costs that may restrict low-cost innovations in the delivery of broadband services. Also, if services are funded exclusively through public subsidies (e.g., to schools) the state may have legitimate reasons to privilege certain content and applications over others (assuming congestion which is often the case in the developing world). A concrete example: the much publicized Daknet system clearly violates net neutrality principles, and yet has served to connect many rural villages from India to Paraguay. [4] While this deserves a longer discussion, my point is simply to flag the implicit assumptions that are made in developed countries in relation to net neutrality debates, and examine the implications of adopting these regulatory instruments in developing regions with very different market and social contexts, where there is a clear need for technical and business model innovations to extend the availability of broadband services.

[1] Galperin, H., & Bar, F. (2007). Diversifying Network Development through Microtelcos. *Information Technologies and International Development* 3(2): 73-86.

[2] Aranha, Bar, Galperin and Villela (2009). *Regulatory Framework and Telecommunication Policy in Brazil: Universal Service through Mobility in Fixed Phone Services.* Presented at the 37th Telecommunications Policy Research Conference, Arlington, VA, September 2009.

[3] Two good examples are the work by Ronaldo Lemos on the music industry in Brazil and the work by Andres Lopez about the Argentine software industry.

[4] Pentland et al. (2004). *DakNet: Rethinking Connectivity in Developing Nations*. IEEE Computer, January 2004.

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Hernan Galperin Response to the meeting objectives: A view from Latin America

Most of Latin America's population is urban and most of the region's poor are urban, but poverty is most widespread and severe in the region's rural areas. This requires differentiated ICT4D strategies for urban and rural areas. In the latter, infrastructure development is costly on account of rugged terrains and sparse, low-income customers. Mobile coverage has expanded rapidly but large areas remain underserved. Public subsidies have had limited success due in large part to execution challenges. [1] More recently, new cooperative arrangements involving local governments and social entrepreneurs have had significant impact and should be supported among others by international donors. [2]

In urban areas ICT expansion has been market driven, largely stimulated by the liberalization of the telecommunications sector in the 1980s and 1990s. Basic connectivity, an issue that guided much debate and policymaking in the 1990s, is slowly but surely receding as a central concern. The use of mobile is widespread, even among low-income customers, despite high tariffs and low service affordability. [3] While broadband penetration is still lagging, shared access through cybercafés has also spread rapidly. With over 50,000 cabinas públicas reportedly in operation, Peru is the best known example.

Nonetheless, several questions remain open about the extent to which public access is an adequate substitute, and the appropriate public access models that maximize social benefits. As an example, many governments initiatives in the 1990s focused on stimulating network deployment in underserved rural areas through government-sponsored telecenter programs. While several success stories can be identified (e.g. Biblioredes library telecenters in Chile), many "plain-vanilla" telecenter projects proved unsustainable and had limited impact.

Between 2002 and 2007 Latin America experienced a nearly four fold increase in the number of mobile subscribers. Cellular teledensity now exceeds 50 percent in all countries, except in Central America, Cuba, Bolivia and Haiti. Mobile use is highest in urban areas, but rural service is high and rapidly rising. Competition and the use of prepaid cards, calling-party pays and cheap handsets have been the most effective approach to universal access ever implemented.

Generally speaking, interest in ICT4D in the national policy agenda has faded from its peak in the mid to late 1990s. The momentum has shifted to reliance on public-private partnerships that will hopefully make ICT4D efforts less vulnerable to the volatile Latin American politics. The new phase is characterized by:

a. the integration of ICTs into larger projects with a clear development focus (improving basic education, the delivery of government services, and so on), as opposed to stand-alone ICT4D projects.

b. a renewed emphasis on capacity-building at the local level, which requires new parameters for assessing the success or failure of ICT4D projects that consider these important externalities.

c. platform independence, which basically means acknowledging the underused potential of quasi-universal mobile connectivity for development objectives.

[1] Peter A. Stern and David N. Townsend (2007). New models for universal access to telecommunications services in Latin America. A joint study by Regulatel, PPIAF, GPOBA, UN, EU, CEPAL and the World Bank - June 2007.

[2] Galperin, H., & Bar, F. (2007). Diversifying Network Development through Microtelcos. I*nformation Technologies and International Development* 3(2): 73-86

[3] Barrantes, R., & Galperin, H. (2008). Can the poor afford mobile telephony? Evidence from Latin America. Telecommunications Policy 32(8): 521-530.

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