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Capital, Power, and the Next Step in Decentralization

Essay by Yochai Benkler, September 16, 2009 in response to A Dialogue on ICTs, Human Development, Growth, and Poverty Reduction

The core attribute of the networked information environment has been the radical decentralization of the capital structure of information, knowledge, and cultural production. Beginning in the second quarter of the 19th century, the expansion of markets and polities combined with the development of capital intensive information production technologies like mechanical presses and processes like the professionalized press, to drive effective engagement in information production and exchange toward an industrial model. From double-entry bookkeeping to the major accounting firms; from the telegraph to the mainframe; and from the phonograph to 24 hour cable channel; information production and exchange centered around an industrial model, driven by the need to secure and sustain substantial, concentrated funding. The personal computer connected to the Internet changed the basic model of capitalization of information, knowledge, and cultural production. The most important inputs, into the core economic activities, of the wealthiest economies came to be widely distributed in the population of wealthy economies. Computation, communications, storage, sensing, and capture devices are widely distributed in the population. These, in turn, enable the effective deployment of the other core input into the global information economy—human creativity, wisdom, insight, and perspective.

Much of the most interesting phenomena we have observed—in production, socialization, and politics—over the past decade plus has flowed from the basic change in the capital structure of information production. People were ever complex, generous, and social. But effective organization around developing an operating system or an encyclopedia required access to material capital and organizational channels that burdened, and retarded, their ability to come together to act effectively. People have ever worried and argued about their political condition; and on occasion, were able to come together in moments of great arousal to move politics. But the day-to-day business of government watchdog, investigation, and opinion crystallization were professionalized throughout the rise of democracy over its main competitors in the past century. It is the fact that much of the population in the wealthier economies have at their disposal the most important physical inputs, together with the training to use them, that has catalyzed the basic changes in those dynamics.

Understanding that the core change is one of radically distributed capitalization should shape our understanding of the next generation of challenges to the use of information technology for development. If the first generation of benefits of ICTs for development was captured by the image of fishermen calling different ports and negotiating the price of fish before they pulled in to port, so as to capture greater returns for their families, the next generation has to be similar deployment of the much more flexible and dynamic affordances of more powerful computational devices, cloud applications, and social software or organizational tools. But these have, up to this point, depended on the widespread availability of more powerful computational devices than the mobile phones of the first generation. In the wealthier economies, these did not pose a basic, overarching problem, because they were largely within reach of large portions of the population. The problem of the digital divide existed and exists; it poses challenges of equity and justice; but it was not sufficient from preventing sufficiently broad, societal adoption of the practices enabled by this decentralized capitalization to prevent the structural changes that we have seen. The concern with poorer economies, much larger portions of whose population

simply cannot afford the basic computer and communications device necessary to use the more complex affordances, is that as a result they will be able to harvest only portions of the benefits if the new information environment, but not actually experience and undergo the basic shift in the locus of capabilities that accompany widespread distribution, throughout the population, of open, flexible, high-capacity computation and communications devices.

In wealthier economies, computers are mid-grained capital goods. They can be put in service by individuals or households. As a result, access to them and their deployment is either individually controlled or, at most, controlled at the level of (nontrivial) household power dynamics. In a poorer economy, the same computer may be put in service at the level of a village, or a cluster of homes, or a local entrepreneur's kiosk. In that context, the risk is that the production and power dynamics will replicate or extend the existing distribution that led to the capitalization of the computer and its network connection in the form that they were in fact put in service. While this clearly makes access to global markets available on a smaller scale than was feasible before, it harbors a much less radical destabilization of traditional power hierarchies, and much less radical redistribution of capabilities.

Mobile phones alone will not solve the problem. The reason mobile phones were such a successful early ICT platform in poorer countries was that they are much cheaper; and they rely on networks that run all the intelligence in the network, allowing for very cheap edge devices. Yet it was precisely the stupidity, or simplicity, of the network relative to the “intelligence” or computational complexity of the edge devices that was so critical to the development of the network information economy and society as it has. A drive to make cheap devices available throughout poorer countries that does not take account of whether the cheapness comes at the expense of a truly open, neutral network will result in a very different kind of ICT platform than the one we imagine as so creative and productive in the wealthier economies. We today, in wealthier economies, cannot be neutral between a next generation network that evolves from mobile phones to smartphones and depends on proprietary networks with greater control over information flows, and a next generation that evolves from personal computers in an open, non-proprietary network. Only the latter will preserve and extend the kinds of open, collaborative, distributed practices that have been at the core of what made the Internet valuable.

As we think of ICTs for development, we must understand that the challenge is a focus on widespread distribution of high-capacity devices, in the hands of a highly skilled population, over open networks running simple and non-proprietary standards. Devices must be cheap enough to be widely distributed as basic background features, owned by individuals in a pattern uncorrelated with pre-existing power relations. Devices must be accompanied with skills training in the use of the device and the open network, so that the difficulty of use does not continue to drive people to the simpler devices that deliver the more predictable, controlled, and “safe” applications. In the near future, this may mean programs focused on women, much as micro-lending has been, or youths and children. In the longer term, it must mean an emphasis on cheap computers from the lineage of the personal computer, not souped-up mobile phones. Or, in the alternative, it means that we need a heavier focus on regulatory interventions that will require mobile phones and phone networks to be more open and flexible—although this is a harder row to hoe. And in all events it means devices coupled with training.

The networked information economy and society promises a radical shift in power and capabilities from industrial, centralized forms to decentralized forms that counterbalance market dynamics more effectively with social dynamics. To achieve this, a highly distributed physical and human capital structure is necessary. Understanding this requires that our focus on ICT for development should be on achieving the radical, decentralized distribution of flexible, open, physical capital throughout the population, coupled with the necessary training to harness the wisdom, insight, and creativity that is already there.

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