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Mobilizing Entrepreneurship

Many of this century's conversations about the potential of mobile technology and development seem to have a familiar ring. Some people get that same starry-eyed look that was so prevalent at the end of the 20th century when the topic of microfinance began to emerge. Lots of excitement. Lots of promises. Lots of ad hoc activity and hopeful anecdotes. But we still have a long way to go before we reach anything near a full understanding of the sector's true scope, scale, and impact. So I believe this hopeful speculation should be matched by an equal push for reliable data collection and rigorous information sharing.

That does not mean that we at Omidyar Network are not bullish on mobile technology. We are. We have staked a lot, both financially and organizationally, on its power, and we will continue to do so. But we also recognize that "we don't know what we don't know." The technology is still young, and some fundamental questions need to be answered—and answered correctly—if we are ever going to see a fraction of the dividends that the mobile for development optimists are projecting.

The current trajectories are undeniably promising, and developments are coming quickly. In fact, they have never moved more quickly. In July 2012, the World Bank issued its report on *Maximizing Mobile*, which gives one of the best sector overviews to date and graphically captures the dynamism of the mobile market, especially in the developing world.[1] Figure 1, taken from p. 8 of that report, shows how mobile applications can maximize development.

Irrational exuberance aside, we are now at a crossroads that will irrevocably determine the future of "mobile cum development tool." At Omidyar Network, our vision is a vibrant mobile ecosystem built on a platform of affordable Internet

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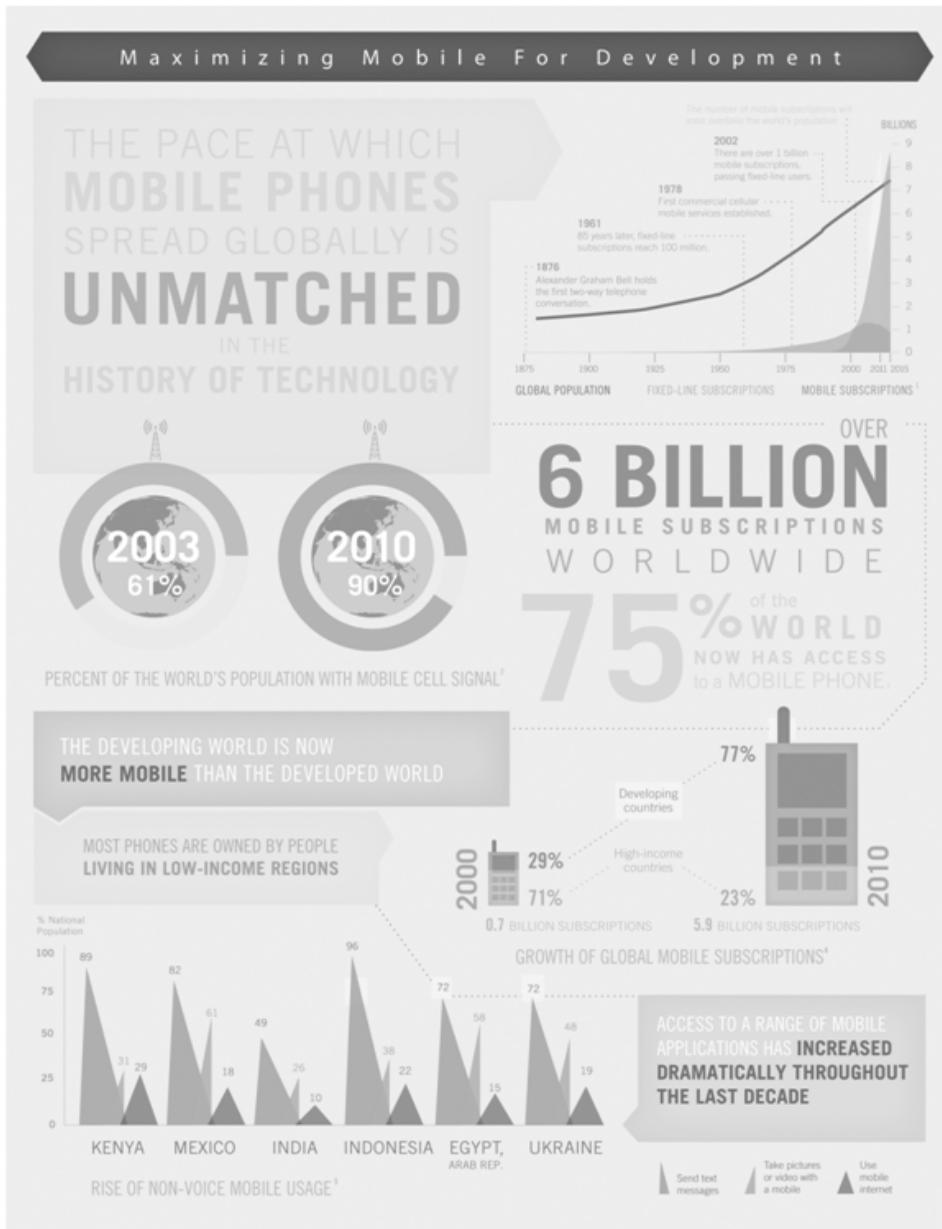
Figure 1. Maximizing Mobile for Development

access for a majority of the developing world. We have identified three fundamental ecosystem enablers that will drive us toward that vision:

1. Mobile devices will provide **affordable access** to the Internet;

2. **Locally relevant offerings**—a diverse set of services, including things like a localized Wikipedia and classified ads—will address the most pressing needs of local consumers; and,

3. Mobile money infrastructure will facilitate the monetization of mobile applications, services, and commerce.

By focusing on the simultaneous evolution of these three mutually reinforcing enablers, we hope to create a virtuous economic cycle: *innovation drives adoption, which in turn drives new investment and further innovation.*

What follows are examples of how we are engaging with our network to support these enabling forces and unleash this virtuous cycle. Like anything worthwhile, this can only be done in partnership with other sectors, organizations, and people, so we are eager to hear feedback and to keep the conversation going—starry-eyed or otherwise.

AFFORDABLE ACCESS

As the infographic of Figure 1 highlights, cell phones have reached every corner of the world, with nearly six billion subscriptions in 2011. That's a six-fold increase in less than a decade. This growth has been fueled by the developing world with three out of four subscribers now in developing countries. About 75% of the world's population, now has access to at least a basic cell phone. This connectivity has clear economic benefits; Waverman, Meschi and Fuss (2005)[2] found that in emerging economies, every 10% increase in mobile phone adoption drives a 0.81% increase in GDP growth.

In contrast to the widespread availability of mobile voice services in emerging markets, the penetration of the Internet is extremely low. Across Africa, for example, only an estimated 4% of people use any Internet service, while that number in India is 10%, according to ITU data.[3] In the United States mobile-broadband penetration is 54% and it is more than 90%in South Korea, according to the same ITU report. In a seminal 2011 paper published in the *Economic Journal,*[4] Czernich, et al. show that a 10 percentage-point increase in broadband adoption raises annual per-capita growth by between 0.9 and 1.5 percentage points, with the greatest gains in emerging economies. Given this enormous potential, narrowing the digital divide gap by increasing Internet penetration rates must become a top priority for the sector.

Given the robust mobile infrastructure in emerging markets today—and the lack of wired infrastructure—it is a given that a vast majority of consumers in emerging markets will access the Internet via mobile devices. Hence, when we refer to Internet access in emerging markets, we are mainly speaking about mobile Internet access.

Two key factors cause the low rates of Internet adoption: 1) the high cost of data services; and 2) the lack of affordable mobile devices that support such services. In many developed countries, an entry-level broadband connection costs the equivalent of one percent or less of the average individual's income. But in some developing countries, the same connection can cost up to 100% of an individual's income, according to ITU data from 2011[5]. Even as the high costs of data-capable

devices continue to drop, the price of ongoing service remains prohibitively expensive and stands in the way of increased user adoption.

At Omidyar Network, we believe that the path to affordability lies in the combination of technological innovation and a favorable regulatory environment that fosters healthy competition among mobile operators providing access to Internet services. To that end, we have recently joined forces with a group of interested stakeholders that includes governments, the private sector, and international development organizations. We are tackling this issue at the global level with a goal to radically reduce the cost of Internet access to below 5% of average monthly income in developing countries; that figure is the threshold at which people will widely adopt technology. While the launch of the SEACOM submarine high-bandwidth cable along the eastern and southern coasts of Africa (in 2009) and the ongoing rollout of higher speed networks (3G and 4G) have reduced the cost of access in some countries, it remains prohibitively high in many other markets.

Clearly, there are issues other than infrastructure availability at play. Drawing on research and incentives to promote change, the initiative seeks to encourage regulatory reform by engaging specific governments in ongoing conversations and debate about the benefits of Internet adoption. We will share information on this initiative with interested parties by the end of 2012, and we are keen to find partners who will help us realize this mission.

But it will take even more than that to lower the costs for consumers in emerging markets; we will also need disruptive technology and innovation in business models. A small group of entrepreneurs is currently working to bridge this enormous gap.

Range Networks, for example, is a two-year-old startup that is extending the reach of affordable cell service to underserved areas worldwide. It has developed long-range cellular base stations designed to deliver the common GSM wireless standard in a way that is cheaper and more efficient. Compared to existing systems, Range's systems cost one-tenth as much to buy and one-twentieth as much to operate. This dramatic improvement in the unit economics allows operators to deploy infrastructure in situations that do not have the subscriber density or average revenue per user that is high enough to justify their effort at existing price points. The success of Range and other companies with similar approaches will go a long way to improving affordable access to mobile data services in underserved markets.

LOCALLY RELEVANT OFFERINGS

Of course, affordable access alone will not solve the problem of low mobile Internet usage. Consumers will adopt new technologies only if they are offered compelling new services that are relevant to their daily lives. Local job listings, weather reports, agricultural market information, money-transfer and bill-paying services, and highly localized community and social networks are among the various data services that should drive increased adoption. But creating these compelling new

services will require the existence of a vibrant community of developers and entrepreneurs focused on local consumer needs. Omidyar Network has begun to engage in active partnership with a variety of players across the spectrum to support this process.

Praekelt Foundation, a nonprofit based in South Africa and part of our network portfolio, is leveraging the widespread availability of mobile phones in Africa to develop mobile applications that allow people to find local jobs, access health information, and create online social networks in which they can share and communicate about issues important to them. For instance, it has developed *TxtAlert,* a mobile application that sends appointment reminders to HIV/AIDS patients to help them better adhere to their antiretroviral treatment plans. It has also created *Young Africa Live*, a mobile portal platform where young people can chat online and learn about critical issues that affect their lives, including love, sex, and relationships.

Similarly, Mobile and Development Intelligence (MDI), the newest initiative of the GSMA Mobile for Development Department and a recent recipient of a grant from Omidyar Network, is creating the industry's first open and freely-accessible data platform for the mobile ecosystem. Combining both publicly available and proprietary industry data on a wide range of metrics, the platform aims to enable participants in the ecosystem to share what they are learning and consequently increase collaboration across both regions and sectors. The platform will also support a Wikipedia-style library of user-generated content, which we hope will evolve to become a community hub for all organizations active in the emerging market mobile ecosystem.

Indonesian-based Ruma, a recent recipient of venture capital funding from Omidyar Network, is developing and distributing mobile tools that empower entrepreneurs to increase their income stream in meaningful ways. Aldi Haryopratomo, Ruma's CEO, founded the for-profit social enterprise to build a large-scale distribution network connected by powerful mobile tools on smart phones. Today, the company has a network of more than 6,000 lower-income shopkeeper agents who are generating income by selling cell phone minutes, enabling people to pay bills, and providing platforms where large consumer brands can conduct customer surveys. In the future, this agent network can be used to distribute a variety of financial or other products to communities that are otherwise difficult to reach.

Versé, another organization in our network portfolio, specializes in developing mobile products for emerging markets. As India's market leader in mobile classifieds, Versé develops a range of subscription services to improve people's access to news and information, job and educational opportunities, and personal and property listings. It has teamed up with content and telecom providers to ensure that it reaches a critical mass of people from all socio-economic backgrounds, people who previously lacked affordable access to relevant and real-time information. With more than 11 million paying subscribers across India, Versé is now expand-

ing more broadly into Africa by working closely with its mobile operator partner, Airtel, which operates in 17 countries in sub-Saharan Africa.

MOBILE MONEY INFRASTRUCTURE

The third, and arguably most critical, enabler of a thriving mobile ecosystem is the payment infrastructure needed to conduct commerce and generate profits from mobile services. An entrepreneurial ecosystem will not be viable unless new service offerings can generate revenues and profits for their creators. In emerging markets, where a vast majority of consumers do not have a bank account, let alone access to credit cards, it is important to build a ubiquitous and reliable mobile money infrastructure that can replace today's cash-based transaction environment. Frictionless payments—the ability to pay easily through a trusted platform—was critical in enabling Apple's Appstore to generate an astounding $5 billion in gross revenue since it launched just under four years ago.

Omidyar Network actively supports various organizations and initiatives that are driving the proliferation of mobile money efforts across major emerging markets. In one notable example, we recently joined GSMA's Mobile Money for the Unbanked initiative (MMU); its other funders include the Bill and Melinda Gates Foundation and the MasterCard Foundation. The initiative is designed to encourage the adoption of mobile money in emerging markets and promote the practices that best meet that goal. When the MMU launched in 2009, there were fewer than 20 mobile money operations worldwide. Now there are more than 100, thanks in part to the MMU.

In addition to supporting nonprofits such as the MMU, Omidyar Network actively invests in mobile money and payment infrastructure companies that facilitate commerce, such as Nigeria-based Paga and Zambia-based Mobile Transactions. A money-transfer service, Paga aims to deliver access to financial services for all Nigerians. Consumers can conduct these transactions directly on their mobile phone or by visiting one of Paga's more than 850 agents across 19 cities.

Tayo Oviosu, Paga's founder and CEO, has focused on building an independent payments platform that is compatible with all mobile networks and works in collaboration with local banks and retailers. Paga's network-agnostic approach is possible in Nigeria because of country-specific regulations—in contrast to operator-specific solutions such as M-PESA in Kenya. This is yet another example of entrepreneurs building solutions based on unique local conditions. In June 2012, Paga processed more than $4.4 million in transactions, a 40 percent increase from May 2012, according to Oviosu.

Mobile Transactions, the first startup technology company in Zambia to raise international venture capital, is building a network of agents to facilitate mobile money transfers without the high fees that currently hinder the smooth flow of commerce. The company currently processes $2 million in transfers per month with a base of 60,000 users. CEO Mike Quinn says Mobile Transactions will even-

tually offer broader financial services in Africa. Already the company has launched electronic vouchers, which allow companies to pay people with scratch cards—akin to debit cards—that they can validate electronically.

As Ruma, Paga, and Mobile Transactions are demonstrating, using the mobile platform as a distribution channel for a diverse set of products and services is a phenomenon now being replicated across many markets, each with its own particular refinements to suit local needs.

Mobile operators can also play a meaningful role in facilitating money movement. As they already have billing relationships with customers, mobile operators can also bill them for third-party value-added services. Often this is the only infrastructure available for third-party providers to collect their payments, and sometimes mobile operators demand a particularly high price for this convenience. For example, Versé pays the mobile operator roughly 70% of every dollar of revenue it generates from a consumer. In contrast, U.S. application developers within the Apple and Android mobile ecosystems only give up about 30% of their revenues to their platform partners. Unless operator business models evolve to be more balanced, the entrepreneurial ecosystem for application developers cannot thrive.

We believe market forces will help drive new operator business models that are more equitable for entrepreneurs. Many operators of voice services in emerging markets are now experiencing declining revenues per user; something similar also happened in the developed world. To offset this decline, they face internal pressures to deploy data services that can command a higher profit margin. For example, in India, there is more competition among mobile operators, and Vodafone, one of the largest operators, plans to introduce a model that would allocate 70% of revenue to application developers.

OUR VISION FOR THE MOBILE PLATFORM
AND FOR CATALYZING CHANGE

The mobile platform has the potential to become the largest single delivery platform for reaching hundreds of millions of lower-income consumers at a cost that still allows businesses to be profitable at scale. But to realize this potential we must address these critical gaps in the ecosystem. We must work together to create a vibrant mobile ecosystem that can play a vital, enabling role in massive social and economic development.

Through our grants to nonprofit development organizations and equity investments in visionary local entrepreneurs, Omidyar Network is working to bring the power of the mobile platform to benefit the billions of underserved people in emerging markets. Through this comprehensive sector-level effort, our goal is to bring affordable access and compelling services, enabled by widely available payment infrastructures, to the developing world. This, in turn, will fuel the rapid adoption of the mobile Internet, and consequently enable the social connections, information flow, commerce, and thriving entrepreneurial activity that we so often take for granted in developed parts of the world.

So, yes, we are bullish on mobile. But we are working as fast as we can to learn as much as we can. We see so much potential to effect fundamental and transformative socioeconomic change by getting handsets into the palms of millions of people. But we must be thoughtful and mindful about our end goals. No single company, government, or organization can do this alone. We are working hard to figure out how to make it all work, and we welcome dialogue and input from anyone and everyone who would like to join us.

1 Information and Communications for Development 2012: Maximizing Mobile; DOI: 10.1596/978-0-8213-8991-1; website: http://wwwworldbank.org/ict/IC4D2012. (July 2012 conference edition)

2 Waverman, Leonard, Meschi, M., & Fuss, M. [2005]. The Impact of Telecoms on Economic Growth in Developing Countries, Vodafone Policy Paper Series 2 (March): 10-23.

3 ITU, The World in 2011, ICT Facts and Figures (http://www.itu.int/ITU-D/ict/facts/2011/material/ICTFactsFigures2011.pdf) pages 1, 5,

4 Nina Czernich & Oliver Falck & Tobias Kretschmer & Ludger Woessmann, 2011. "Broadband Infrastructure and Economic Growth,"Economic Journal, Royal Economic Society, vol. 121(552), pages 505-532, 05.

5 ITU, The World in 2011, ICT Facts and Figures (http://www.itu.int/ITU-D/ict/facts/2011/material/ICTFactsFigures2011.pdf), page 7