



## Catalyzing Markets for Global eHealth

From Silos to Systems

Chapter 8

Facilitating an ecosystem of well-functioning eHealth markets around the world is a critical step in health improvement and system transformation. Unfortunately, cultivation is falling short, with information technology markets proving difficult to both quantify and catalyze, particularly in the developing world. Initial estimates by the Boston Consulting Group peg the global eHealth products and services market at \$96 billion, with 95 percent of this market in industrialized countries. Nearly half of the developing world markets, estimated at \$4 billion, are in only four countries: Brazil, Russia, India and China.

Definitional issues and fragmentation complicate efforts to nurture eHealth markets. eHealth covers a broad swath of territory, from electronic medical records (EMRs) to telemedicine and mobile-health interventions. Health 2.0 technologies that enable user-generated content, SMS social networking tools, and peer-to-peer platforms are also increasingly placed under a widening eHealth umbrella. And eHealth is perceived differently, depending on the audience. A well-functioning market may ultimately be described as one that facilitates a platform for integrating the myriad of eHealth technologies, donors and systems into a coherent whole that drives efficiencies and improves health outcomes.

The Public Health Institute convened *Catalyzing Markets for Global eHealth*, part of the Rockefeller Foundation's *Making the eHealth Connection: Global Partnerships, Local Solutions* Bellagio Center conference series. Participants provided an overview of eHealth markets in the developing world and outlined novel collaborative approaches to leapfrog over the legacy eHealth environments found in many nations.

### **Catalyzing the Global eHealth Market: Key Issues**

Successful eHealth markets enable better coordination of services, data integration and the development of evidence-based practices. In order for this to occur, however, eHealth entrepreneurs must possess a clear understanding of market size and key problems that proposed business models will attempt to solve, and be able to formulate a vision of business model sustainability in markets where purchasing power is often perceived as too low to support eHealth enterprises.

Challenges in seeding and growing eHealth markets are notable and must be addressed through innovative partnerships that span the globe. When undertaking this task, key issues and barriers must be considered:



- ▶ Lack of awareness about the costs and benefits of eHealth solutions
- ▶ Absence of business-case studies demonstrating potential eHealth models and their promise for health system transformation
- ▶ Fragmentation of the eHealth market on both the supply and the demand sides, with most global health programs being driven by vertical or disease-driven programs that create numerous silos
- ▶ Lack of a coherent, transparent enabling policy environment that supports eHealth market development (e.g., a process that supports funding, data handling, privacy and interoperability)
- ▶ Shortage of private-sector involvement from multinational and information technology (IT) companies based in the developing world due in part to perceptions of market inadequacy

While on the surface, market barriers appear to be formidable, businesses are successfully developing products and services for eHealth markets in the developing world. A growing roster of players is working in the field.

### **Collaborative Markets for Global eHealth**

Concerted action is needed to change the current eHealth market environment in a way that drives innovation and health system transformation. *Catalyzing Markets for Global eHealth* conference participants concluded that the open-source software community and other e-commerce mechanisms can be adapted to develop new organizational processes that may achieve breakthroughs much faster and with a more diverse group of players. If the right system of solutions and institutions is put into place now, many of the eHealth difficulties encountered by developed nations can be avoided in developing countries and greater health benefits derived.

The challenge is to transcend the current tendency to create analog institutions appropriate to the non-digital problems of the past, and move toward new forms of networked organizations. Academics Elinor Ostrom and Charlotte Hesse highlight the concept of a commons, a shared resource governed by a new set of institutional relationships and ethos.<sup>1</sup> The recent theoretical work in this area, coupled with public-private partnership experiences, creates an important foundation for new types of institutions and partnerships that can facilitate collaborative markets, meet



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There is a demand for better health services and technology and an increasingly affordable set of technologies to meet that need. Unlocking the eHealth markets is not so much creating markets as aligning the different pieces and making connections so that the markets work.”

the outstanding needs of entrepreneurs, and generate new opportunities downstream from the commons.

Lessons from the IBM and Apache software’s experience illustrate how an eHealth commons might work. When IBM recognized that the market for hardware had matured and would not be the source of sustained revenue growth in the future, it began shifting its business model to focus on open-source software such as Linux and the Apache Software Foundation. Through the donation of approximately \$10 million of code and 400 programmers’ labor, IBM accelerated the growth of open-source code, driving demand further downstream for higher-margin Web-based consultative services. In essence, IBM made a strategic investment in the commons to grow the overall market.

The global eHealth market might therefore explore the concept of the collaborative market, the notion of the commons for sharing resources, and expertise that might enable the growth of the market for everyone. The eHealth market might also explore foundational building blocks, such as open standards, common architectures and interoperability. This framework would allow both open-source and proprietary systems to operate. The issue is not one of open source versus proprietary, but rather how to build an eHealth commons that lays the necessary conditions for the market to grow and actually drive healthy outcomes.

### eHealth Commons: Core Ingredients

An eHealth commons, *Catalyzing Markets for Global eHealth* conference participants concluded, is needed to strategically bring together key actors around shared resources (common standards, shared vision on system architectures, facilities for demand aggregation, donor-aligned financing pools, etc.). This would enable markets to grow and would support a vast ecosystem of eHealth players. A global eHealth commons would likely possess these elements:

- ▶ Financing and matchmaking functions between entrepreneurs and donors

- ▶ An architectural function that addresses open standards, architectures, interoperability and systems integration
- ▶ Smart social networking and an open-innovation portal to bring together disparate eHealth players
- ▶ A business model advisory and best practices repository
- ▶ Demand aggregation where the World Health Organization (WHO), ministries of health and other e-services could come together to coordinate platforms
- ▶ Research and evaluation tools that can inform eHealth policymaking
- ▶ The global eHealth commons could address users or stakeholders in the global eHealth field: entrepreneurs and companies, policy-makers, informatics professionals, public health professionals and citizens.

### eHealth Commons: Developing World Framework

*Catalyzing Markets for Global eHealth* conference participants emphasized that the following issues should be considered in the creation of an eHealth commons:

#### 1. CREATE VALUE PROPOSITIONS FOR DIVERSE INDUSTRY PLAYERS, INCLUDING COMPETITORS⇒

Operating in the eHealth arena entails coordinating the development of common standards and architectures that enhance interoperability and help reduce uncertainties for industry and entrepreneurs while simultaneously giving policymakers the necessary toolkits to make the right decisions with vendors and others.

#### 2. STRUCTURE THE COLLABORATIVE MARKET AS A THIRD PARTY WITH INDEPENDENT MANAGEMENT⇒

This third party should adopt an agnostic but strategic view on eHealth matters, with criteria framed around sustaining the growth of the public good (i.e., health outcomes and transforming systems, sustainability of enterprises to drive innovation and health equity in the broadest sense.)

#### 3. EXPECT THAT THE PRODUCT, TERMS OF TRADE, AND MARKET STRUCTURE OF THE COLLABORATIVE MARKET WILL EVOLVE⇒

A collaborative market and commons can be designed

with a focus on today's problems and realities. There is a strong need to exercise foresight and strategic thought to identify leapfrog opportunities and an overall innovation strategy that can attract the best in the field to the overall cause.

**4. ALIGN DONORS**⇒The eHealth commons must become a central space where a spectrum of donors such as multi- and bi-lateral donors, venture capitalists, foundations and governments can come together and build shared investment platforms that reinforce eHealth goals for common standards, architectures and interoperability. Donors are important agents in the eHealth value chain. They should be seen as having the foundational ability to enable eHealth markets. One tangible donor alignment tool is software development that facilitates the integration of the eHealth value chain by focusing on a series of strategic alignments, including the alignment of the following:

- ▶ Philanthropists to innovation
- ▶ Policymakers to entrepreneurs
- ▶ eHealth information with researchers, philanthropists, social/entrepreneurs, donors and the private market



## 5. INCREASE CAPACITY OF SOCIAL ENTREPRE-

**NEURS**⇒As with the public sector, there is a need to build capacity among social entrepreneurs to absorb capital, obtain information on available technology solutions, receive adequate technology training to manage software systems, exchange business model insights, and be vocal in the policy arena so that policymakers do not overlook local social entrepreneurs when framing new policy agendas for eHealth. In addition, an eHealth promotion network could integrate needs across the demand and supply chains, acting as a clearinghouse of tools, frameworks, and knowledge to facilitate market growth. Within the eHealth commons framework, the network would vet proposals from social entrepreneurs and match their identified needs with the right stakeholders in the network.

## Conclusion

Experts estimate that a country-level investment of 2 percent of health care expenditures on IT can generate a significant health-system benefit. With the proper market and innovative financing solutions, developing countries have the opportunity to cultivate some of the world's most innovative and effective eHealth solutions. Collaborative markets, entrepreneurial commons, solid business case studies, better donor and financier matchmaking, smart social networking, and strategically addressing current constraints in the eHealth supply and demand chain are all keys to success.

## Notes

- 1 Hess, C, Ostrom, E. *Understanding Knowledge as a Commons: From Theory to Practice*. Cambridge, Mass: MIT Press, 2006.
- 2 Ibid, p. 6.



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*“We must now be able to share patient information across the planet. To think more globally, we need donors who have the ability to put people together and channel resources in the right direction, governance bodies that reflect what is needed and integrate different initiatives, and technology that is sharable and interoperable.”*

