

07 Connecting health and business: Cracking the B2B code

Building a B2B business model in mHealth is more complex than in B2C, but is likely to be more rewarding: B2B mHealth could be a significant revenue source for wireless operators, device OEMs, mobile software application vendors, and systems integrators.

In the race to develop a strategy in the new mHealth space, it is easy to forget that it is not consumers who will provide the greatest leverage on the market, but enterprise stakeholders. The real B2B mHealth customers are no less than governments, employers, insurers, providers, and producers across the world – an unparalleled spectrum of players with a huge spend: currently over USD 2.3 trillion in the US alone. This expenditure urgently needs to be reduced by redistributing it to more efficient channels. Working together with these B2B players could therefore prove to be a win-win situation for everyone involved.

This article examines this business opportunity by looking first at the potential customers and the varying types of application they will be seeking and then explores the different business model options by player. The final section describes why this market is just one of a new archetype of B2B mobility solutions.

Numerous attractive potential B2B customers

Navigating the healthcare ecosystem can be a daunting task for a telecoms operator given the complexity in the flows of funds and services (Exhibit 1). Four primary stakeholder groups are involved: payors, providers, producers, and consumers. The payors ultimately fund the

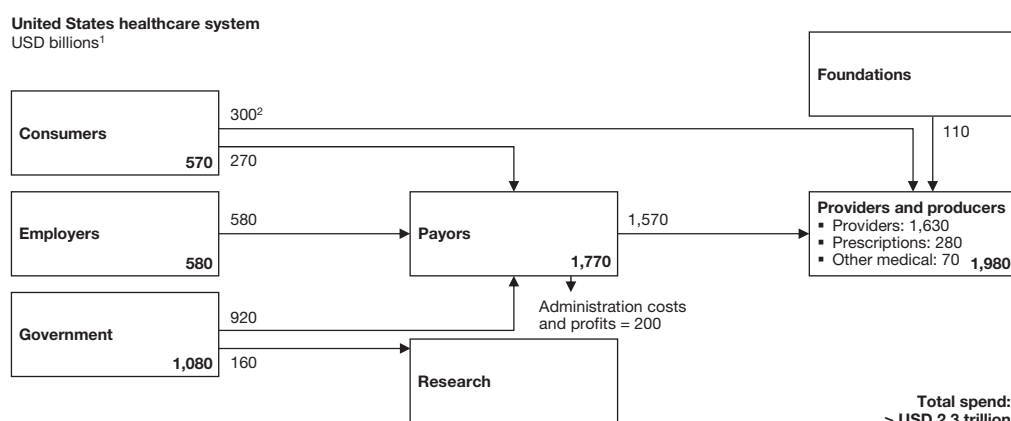
healthcare systems, disbursing 75 percent of the healthcare expenditures to providers and producers. In the US, for example, consumers pay out of pocket for 25 percent of the total healthcare spend. Countries have typically adopted one of two healthcare ecosystem models: a single-payor model, as illustrated by some countries in Western Europe, or a multi-payor model, such as that in the US. Each of the stakeholders have specific needs that mHealth is well positioned to address.

Payors. In their role as payors, governments and businesses (self-insured private enterprises and health insurance companies) will be the direct monetary beneficiaries of mHealth solutions. Their healthcare cost problem is acute: in the US, for example, employer healthcare costs are growing at 4.9 percent annually – much faster than average GDP growth. The US government spends USD 25 billion per annum on employee healthcare costs, while the healthcare expenditure of most self-insured Fortune 100 companies is a startling USD 1 to 5 billion per company annually. Seventy percent of that figure is spent on treating five to six chronic conditions.

Many payors are currently experimenting with mobile-enabled chronic condition management. This service provides continuous patient monitoring (blood glucose or cardiac readings analyzed automatically, for instance) and feedback mechanisms to automate patient management and focus personnel on the highest-risk patients. Payors' adoption of mHealth solutions is likely to improve as clinical studies and large-scale pilots demonstrate efficacy.

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Navigating financial flows in a healthcare system can be complex



¹ All figures are estimates for 2008 and are approximate

² Not including an additional USD 50 - 70 billion in bad consumer debt

SOURCE: Centers for Medicare and Medicaid Services; Office of the Actuary; McKinsey

Providers. Hospitals, clinics, and physicians' practices are a second important target customer set for mHealth solutions. Providers face significant economic pressure. Seventy-four percent of hospitals in the US, for instance, have seen a decline in margins over the last 12 months. Additionally, to attract and retain lucrative patients, providers seek technology innovations that will differentiate them in the marketplace and strengthen their patient relationships. Providers will find two distinct types of mHealth solutions appealing.

- Solutions that improve the efficiency and utilization of their physician and nurse workforces. Examples include applications that enable physicians to view and interpret radiology results on their smartphones or tablets.
- Solutions that enhance care delivery quality and effectiveness, such as AirStrip's remote monitoring of fetal heartbeat and maternal contraction patterns on a physician's smartphone or CardioNet's remote monitoring service for cardiac patients.

Producers. Pharma companies, medical equipment manufacturers, and retail pharmacies make up a third important potential B2B customer segment for mHealth solutions. Pharma companies could benefit from a wide

variety of mHealth offerings: solutions that encourage patient adherence to medication and care regimens and ultimately drive increased sales. These include Vitality GlowCaps (SIM-chip-enabled pill dispensers), mobile apps that improve clinical trial efficacy, and solutions that enhance the productivity of their large field forces that market to physicians. Most producers do not have direct patient relationships: they will find mHealth solutions that allow direct interaction with patients in real time very attractive. Such solutions will enable them to understand patient medication usage patterns and the impact of environmental and behavioral factors on medication efficacy – while building brand loyalty.

Significant new revenue streams in mHealth technology value chain

mHealth solutions cannot be delivered if major players do not participate in the technology value chain: operators, device OEMs, mobile application software vendors, and systems integrators. Given the nascent nature of this market, mobile operators have a unique opportunity to play a shaping role in partnership with major healthcare ecosystem players, thereby capturing substantial revenue streams (Exhibit 2). A number of B2B mHealth business models are already emerging. Each of the major players has a distinct range of options.

02 Various value chain players can capture significant revenue streams

mHealth technology value chain		Revenue implications
	Operator	▪ Additional transport from machine-to-machine endpoints, additional data plans ▪ Carrier hooks (e.g., location application programming interface) ▪ Solution revenues, if lead
	Device OEMs	▪ Purpose-built devices ▪ SIM-embedded devices
	Software vendor	▪ Prepackaged and customized mobile productivity applications ▪ Solution revenues, if lead
	Systems integrator	▪ Design, integration services ▪ Solution revenues, if lead

- Telcos have the opportunity to lead the solution: around 50% of CIOs look to the operator to be the mobile productivity solutions provider
- However, software vendors and systems integrators are also well positioned to play this role

SOURCE: McKinsey

Telecoms operators. Operators have three potential options to monetize mHealth. These lie at the core of the mHealth value chain, since all applications require mobile connectivity. The role of cell-based systems is expected to grow as SIM chips are embedded in medical devices (e.g., glucometers), enhancing the role of the operator even further.

- **Pure connectivity.** In this model, the mHealth service provider transmits data via the existing network without having a relationship with the network operator. Mobile charges are either part of a customer's existing data plan or paid via their mobile bill as additional usage. Opportunities will also emerge to sell transmission for SIM-enabled devices. In this model, the mHealth service provider cannot bundle service usage or make use of carrier-specific services (e.g., location-based). The operator is merely a "pipeline" working on commodity transport economics. To mitigate this suboptimal outcome, telecoms players should shape the market to develop mHealth solutions that require operator-only capabilities, such as packet prioritization.
- **Operator end-to-end.** The second potential model positions the telecoms operator as the primary face to the customer, delivering an integrated solution

that includes transmission, devices, and software applications along with deployment and integration services. This allows telcos to capture a large share of the value in the solution. However, operators could face challenges in executing this model: they may lack the requisite healthcare expertise, and customers/patients may be hesitant to use a telecoms-branded service for their healthcare.

- **Joint service.** The third option sees the customer/patient interacting with an mHealth service provider, who subcontracts transmission and other services from the telecoms operator. This model has the advantage (for telcos) of a strong presence in the value chain, while the face to the customer remains the customer's existing trusted healthcare provider and payor. The benefit for healthcare companies is that they can offer mHealth services without having to deploy a large technical infrastructure.

Device OEMs. mHealth is bound to create a market for mobile connected devices. Boundaries between the two primary mHealth devices – sensors (e.g., unconnected glucometers) and interface/connectivity devices (e.g., mobile handsets) – are likely to blur, creating opportunities for existing manufacturers and new entrants. We expect three stages in the evolution of mHealth devices.

- No sensor connectivity (current state). Readings have to be entered into another transmission device manually to access the mHealth network.
- “Personal area” wireless access capability. Devices use technologies like Bluetooth and ZigBee. Such enabled devices can transmit sensor data to another device automatically.
- SIM-enabled devices. Sensors (glucometers, for instance) will have embedded always-on wireless capability, thus serving as both the sensor and the interface.

The primary challenge in the mHealth device market is likely to be differentiation. As standards are set, all current device manufacturers will be able to easily add network and interface capabilities to existing sensors.

Software vendors. Two monetization models will likely gain traction: licensing for software and solution revenues from being the prime integrator. Much of mHealth innovation will lie in software and the new algorithms, heuristics, and capabilities that it enables. Software manufacturers that can demonstrate measurable value (such as clinical efficacy and cost reductions) will capture a large share of the value. They can also play the prime integrator role. However, software firms should expect the need to conduct trials and build substantial evidence before payors or providers will adopt their solution. Also, regulator scrutiny will probably subject applications to rigorous validation requirements.

Systems integrators. Most solutions will require both back-end integration and coordination of multiple stakeholders to maximize value creation. Systems integrators are well positioned to not only play the integrator role but also be the prime integrator. Each health-care stakeholder will require specific new technologies. Providers may need to equip physicians with remote diagnostic tools (e.g., videoconferencing), while payors may integrate mHealth applications into their existing claims and actuarial systems. Many companies will look to external integrators to help assess their technical requirements and assist with implementation.

Excellent launchpad for further advanced B2B mobility solutions

mHealth is not unique as a mobile solution with a B2B target customer set: it is a leading example of what is

an entire emerging class of advanced B2B mobility solutions, where the mobile customer is an enterprise purchasing on behalf of its employees or customers. In addition to being an attractive business opportunity in its own right, mHealth can also serve as a model for telecoms operators, device OEMs, mobile software vendors, and professional services firms looking to build successful B2B mobility businesses more broadly.

Enterprises are likely to drive the next round of wireless industry growth over the coming five years. Around 80 percent of the world’s current mobile telecommunications market consists of goods and services sold to consumers; only 20 percent are sold to enterprises. But this trend is shifting: the B2B mobility market is growing at two to three times the rate of the consumer market.

Enterprise mobility solutions fall into three categories. While the first is already very common, two additional classes are emerging.

Collaboration-focused solutions. Around 80 percent of B2B mobility sales currently comprise a standard voice handset or smartphone with a suite of corporate collaboration applications (frequently business e-mail, contacts, calendar, and a browser on a RIM BlackBerry handset) sold to an enterprise for use by its employees. These mobile-enabling communication and collaboration applications are the first category of enterprise mobility solutions.

Mobilized enterprise applications. The second category covers the mobile enablement and extension of software applications used to operate businesses. These applications may include horizontal (cross-industry) solutions, such as enterprise ERP, SCM, and CRM systems on mobile devices as well as vertical (industry-specific) solutions, such as electronic medical records in health-care, claims processing in insurance, or field force productivity applications – emergency responder dispatching systems, for example. The solutions are typically sold to enterprises and deployed to their employees. The devices may be standard smartphones or tablets. Multiple emerging mHealth solutions fall into this second class of B2B solutions, such as physician and nurse workflow and productivity tools.

Wireless sensors and object connectivity. The third and arguably most exciting and disruptive class of B2B mobile solutions is wireless sensors and object connectivity. This includes all solutions that extend mobile,

real-time interaction to an enterprise's customers and any kind of instruments that it deploys to fulfill its business mission, whether assets, inventory, or vehicle fleets. Example solutions include utility smart grids that track and manage energy usage throughout the utility network or handheld, mobile point-of-sale devices that enable retail customers to check and compare product information (and even purchase items) as they walk through a store. Emerging mHealth solutions that fall into this third category are SIM-enabled pill dispensers that serve as prescription reminders for the elderly or remote monitoring systems for diabetes.

More advanced B2B mobility solutions of the latter two kinds are gaining pace, and numerous mHealth solutions fall into these categories. McKinsey research

indicates that advanced solutions of these two types will drive 10 to 15 percent growth in B2B mobility over the coming five years – another convincing reason to craft a strong B2B mHealth strategy while this promising wave is still building.



mHealth is an extremely attractive growth opportunity for the entire high-tech and telecoms value chain. And this is by no means a niche game: it lies at the very intersection of two high-growth pathways – the healthcare vertical and the enterprise mobility horizontal. Given its nascent nature, it provides an unprecedented opportunity for at-scale fast movers to shape mHealth and capture disproportionate value.



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