



Developments in mHealth: An App a Day Keeps the Doctor Away

Innovation in products, technologies, business models, and processes can topple market leaders; particularly larger organisations that lack the agility to react quickly. The pharmaceutical sector in the digital economy is more vulnerable than most. This whitepaper is a Dig Worldwide thought piece on describing disruptive forces and examples of change that have the potential to radically change the healthcare landscape.

Technology has disrupted us all. From shopping to shipping, from Apple to Uber, nothing is the same. Traditional industries need to address and embrace this change now.

Disruption has come later to the highly regulated, slow-moving, cost-heavy industries such as pharmaceuticals. But while the pharma industry may be high cost, it is also high margin - with ever-increasing global demand. That makes the sector ripe for the entry of lower-cost, high innovation, and very disruptive tech companies.

And we have seen that these tech companies already have a foothold in the health sector, changing the competitive landscape significantly.

The facts speak for themselves. Some 3.4bn people have smartphones, and half of these have a health-related app. More than 70% of doctors in the UK, France and Germany have recommended an app or tech-related healthcare; **250,000** MHealth apps are already available, principally in the consumer sectors of weight loss, exercise, sleep and women's health. About 30% of the apps target healthcare professionals. The mHealth market will be worth **\$102 billion by 2022**. These numbers shouldn't be ignored by Pharma.

IT is investing big in healthcare. They are aggressive, unhampered by red tape and attracted by healthy margins. And they are very fast movers – in direct contrast to the research heavy, highly regulated pharma companies.

It took 10 years for smartphones to become ubiquitous; newer technology, such as wearables, will permeate even faster. Fitbit took three years to become commonplace; now camera technology helps phone users easily get a diagnosis for ear infections and the market is further accelerating.

Uptake is faster in developing countries with less medical infrastructure, less access, and less regulation. Already, for example, one million people have signed up for phone consultations with doctors in Mexico, for \$5 a month. In the developing world, accessibility is key.

Technology may find more resistance in developed countries, where regulatory authorities and existing infrastructure create a barrier. But consumers – as well as the medical profession, which is stretched financially – are backing the tech revolution which in turn will force regulators to act and adapt.

Most mHealth technologies relate to data capture and patient monitoring – and they are moving forward fast. Germany's Vitaphone offers 24-hour advice, tele-medical monitoring, charts and remote ECG analysis. Medical grade wearables are starting to be approved by regulators; smart diapers, for example, can detect type 1 diabetes, urinary tract infections, kidney problems. Smart inhalers can track pollution and provide patients with alerts on high pollen areas.

The NHS has bought a burns app, developed by a doctor, which calculates the fluid intake required, based on what percentage of the body has been burned. A child's lazy eye can now be corrected with an app versus costly and frequent visits to an ophthalmologist.

Software, hardware and digital technology companies are courting the regulators, and while the picture is still blurry, with many questions to be answered, the motivation is there. And once there is evidence of disease reduction, uptake will be unstoppable.

So how is pharma responding to this attack on its market? We think it could do better.

The first foray into apps had little impact. The major companies have fewer than 65 apps - most of which are static and non-responsive, available in just one or two languages. The best companies are learning quickly that they needed to partner, rather than compete with technology. J&J, Novartis, GSK and AstraZeneca all have teamed with tech for various developments; leading pharma companies now have a digital health or mHealth divisions.

There are drivers behind the change beyond aggressive digital disrupters. Growing global demand for healthcare, with an ageing population, widening

middle class and more tracked diseases have come at the same time as spiralling costs and financial constraint.

Apps are inexpensive. They can keep people out of hospital. But there are financial gains to be made for pharma too.

An American hospital launched a clinical trial on Apple's ResearchKit and within 24 hours, 11,000 potential trial participants had signed-up which would normally take a year. About 140 interventional trials are currently using mHealth – which provides better data, greater patient retention and less site burden.

mHealth is expected to save €99bn in healthcare costs in the EU, while adding €100bn to EU GDP in 2018. Many European Healthcare systems are already telling doctors to use apps.

Of course, there is resistance and challenges. Data privacy, hacking, concerns over accuracy, regulation, errors and insurance can all present problems. Loss of revenue for private players, such as US hospitals, could also slowdown the advance. But most of these challenges are from within the existing industry, while the drivers for change are on the outside. And change is coming from single “coffice” entrepreneurs; medical groups; and technology corporations: Microsoft, IBM, Intel, Apple, Google, Amazon and Telefonica to name but a few.

“We might soon enter an era where healthcare professionals will be prescribing a lot more apps than pills,” said mHealth pioneer, Erik Topol. Established healthcare organisations, be they pharmaceutical, biotech medical diagnostic or medical device companies must act soon or risk being marginalized.

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flexible yet consistent service. We always act ethically when gathering intelligence and deliver results in a thought provoking and analysed manner.

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