MobileHelp®

How Interconnectivity is Enabling the Future of Patient-Driven Health

A Whitepaper Presented by MobileHelp and KORE

How Interconnectivity is Enabling the Future of Patient-Driven Health

A Whitepaper Presented by MobileHelp and KORE

Executive Summary

The technology infrastructure has shifted over the years to accommodate greater and greater two-way connectivity – in all living and working environs. This has allowed for the rapid development and deployment of new connected technologies, that are bringing together once-disparate and siloed worlds.

This whitepaper will look at the way technology and its infrastructure has shifted to support the connected initiatives of businesses today, with a particular emphasis on healthcare.

The Background on Infrastructure

For decades, the landline telephone was the primary means of telecommunications in the United States. But the days of copper phone lines and "Plain Old Telephone Service" (POTS) are quickly coming to an end.

Over the last decade and a half, the country's wireless infrastructure has drastically improved to the point where the vast majority of communications is now taking place via wireless networks. The rise of technologies like Voiceover IP and the greater demand for 4G LTE availability has entirely changed the types of infrastructure needs throughout the country. As a result, POTS has become something of a dinosaur in terms of communications technology.

"There's a greater and greater awareness of the power of the interconnected world," said Alex Brisbourne, CEO of KORE, the largest IoT/M2M service provider of global machine-to-machine network connectivity. "If you look at the technology that was available even just ten years ago, it would almost feel like ancient history."

As technology began to advance and wireless networks gained traction as a credible alternative to landline telephone service, the question quickly became "are these networks reliable enough for us to use as we conduct business?" This question was particularly important for industries that rely on quick, real-time transference of information, like the healthcare industry.

"There's been so much discussion around the power of the interconnectivity, especially over the last 18 to 24 months," said Brisbourne."There is currently a real hunger in the healthcare and health IT marketplaces – whether it's for critical diagnostics taking place in real time at the clinical level, general care or self-care."

The challenge inherent to this new market demand centered around how to deploy wireless networks and technology in an efficient, reliable way that would not stunt business communications. This was especially problematic considering the rapid proliferation of devices that use these networks and the bandwidth needed to accommodate them: There are devices for everything these days, from security to telehealth to communications, all of which need access to the same networks to function.

This is especially important in the healthcare industry, a field that is increasingly dependent on powerful, capable mobile devices that enable clinicians to be constantly connected. Many healthcare institutions have to implement usage guidelines and various systems to ensure a smooth incorporation of the personal devices of doctors and patients into the hospital's system. In previous years, this might have posed challenges that healthcare IT teams would not have been able to meet.

Cellular is being widely adopted for use in the M2M/ Internet of Things space.

The cellular landscape is dynamic and constantly evolving, but offers the following benefits for businesses across the healthcare and health IT landscape:

Ubiquitous Coverage

Cellular coverage is nearly everywhere. A recent ITU report suggests that the total number of global mobile subscriptions is approximately 6.8 billion – nearly the same as the estimated world population.

Easy Deployment

Deploying other wireless devices inside some environments like hospitals can be problematic because the hospital IT teams do not want to allow 3rd party devices on their network. Cellular devices can be deployed anywhere that is in network coverage. It can also be deployed in mobile applications where devices need to stay connected no matter where they are at, even across wide geographical areas.

Lower Support Costs

With cellular, the infrastructure is owned and managed by the cellular carriers, not the end-customer or product supplier. This means no upfront infrastructure costs and reduced support costs.

Improved Reliability

Reliability is critical for many M2M applications, especially those involving security and real-time monitoring and alerts, as in healthcare or the health IT industry. Cellular leverages a robust wireless network used by nearly 1/3 of the world's population every day.

Lower Hardware Costs

Cellular module costs have fallen significantly in recent years. High-volume pricing for data-only modules is approaching sub-$10 for 2G GSM, sub-$20 for CDMA 1xRTT and sub-$30 for 3G UMTS. These price points are enabling a whole new class of devices and applications.

Lower Data Costs

Data costs have also fallen significantly. For connected machines that only need to report small amounts of data, connectivity costs can be <$1/month.

But according to Brisbourne, wireless infrastructure technology has come a long way in recent years.

"In the past five or six years, we've moved to the point where individuals can exchange data with complete freedom, leveraging the strength of predominantly cellular networks," he said. "This allows people to virtually go anywhere and still have access to the information they need."

Connected Devices Impact Daily Living

The obvious example of devices that have seen an explosion in recent years is smartphones. Smartphones have increased not only in popularity, but in capability — apps exist for almost any conceivable function, and the cellular networks that enable them are more reliable than ever before.

Another type of device that has seen a surge in popularity in recent years is wearable devices. Many people think of fitness trackers like Fitbits when they think of wearable devices, but there is an ever-growing variety of these wearable devices that has gained the attention of technology companies and enthusiasts.

Today, more steps are being counted, more activities are being tracked and more information is being logged about sleep patterns than ever before, thanks to the proliferation of these devices. None of this would have been considered possible in the era of POTS.

"We've seen a 180 degree shift in the last 24 months in the way people view wireless systems," said Rob Flippo, CEO of MobileHelp, the nation's leading provider of mobile personal emergency response system technology. "That has helped cellular networks become much more reliable for delivering critical data. Though cellular networks were always robust, people are now starting to recognize their greater inherent capabilities, and that if you're going to build a solution centered on life safety or health, cellular is actually a much better option."

As a company that relies on mobile technology and infrastructure to serve its clients, MobileHelp is committed to continuing to find new ways to promote the evolution of that technology. The company has found a niche in the healthcare industry in delivering wearable devices because there are so many clinical applications for them.

"From a clinical perspective, there's a difference between the person who uses a FitBit-type device because they're interested in their health and the person with Type II diabetes who is using an activity tracking device because they really need to make sure they're walking a certain amount every day," said Flippo. "There's a clinical need for tracking and monitoring the latter's health-related data, which is one of the main reasons why people managing chronic illnesses make up such a large percentage of people who continue using wearable devices for longer than six months."

Numerous studies support this idea: According to a Pew Foundation survey, 45 percent of US adults are dealing with at least one chronic condition. And while only 19 percent of people with no chronic conditions track their health indicators, 40 percent of adults with one chronic condition do so, and 62 percent of adults with two chronic conditions do so.

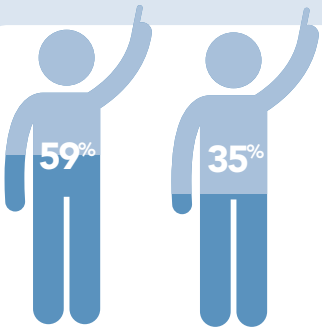
The Future of Wearable Devices and Wireless Technology in Health Care

Key Trends to Watch:

1 | Emerging Markets

2 | Less frequent visits to doctors or nurses

3 | Medical devices with integrated cellular connectivity



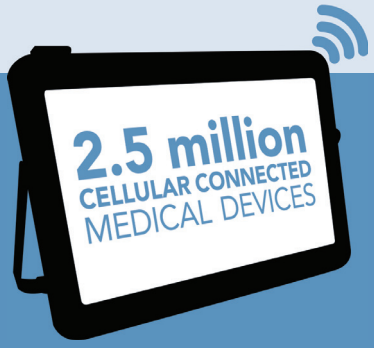
59% of patients in emerging markets use at least one mHealth application or service, compared to 35% in developed markets.

As smartphone sales continue to grow in developing markets, the adoption of mHealth devices and mobile apps will grow simultaneously.

59%

of patients felt that their mHealth app replaced some visits to doctors or nurses.

Many patients schedule appointments with a doctor or call a nurse to ask medical questions that could be answered by using a mobile app. One study found that "up to 77 percent of primary care physician time usually spent on preventive care could be delegated." Mobile apps provide medical information in innovative ways that are not only more engaging to users, but improve retention of that information.



Industry reports state that an estimated 2.5 million medical devices have integrated cellular connectivity.

The estimation of nearly 2.5 million new medical devices with cellular connectivity provides the necessary infrastructure for mobile technology to be seamlessly integrated. The more hospitals are able to transfer information to and from patients, the more likely patients are to adopt the technology that allows them to do so.

References: Bodenheimer et al. 2012, Research2Guidance, Manhattan Research, Global Data, Berg Insight, The Boston Consulting Group, WHQ, mobihealthnews.com, OrcaHealth.Com

Flippo foresees these two worlds eventually colliding. As patients recognize they can take back ownership of their health, that proactive nature will collide with the clinical aspects because from a very early age more people will be monitoring their own health.

"There are people growing up right now who are very comfortable with wearing devices that are monitoring their biometrics on a daily or weekly basis," he said. "It's not a stretch to believe as they age, they'll continue to be comfortable with data being continuously collected on their health and wellness."

Brisbourne adds that the familiarity of the younger generation with these devices will also impact the amount of people in older generations who adopt them in coming years.

"There are several dynamics going on here," he said. "You've got a younger population that is tremendously comfortable with technology, and a middle age population, whom are also at least somewhat comfortable with technology."

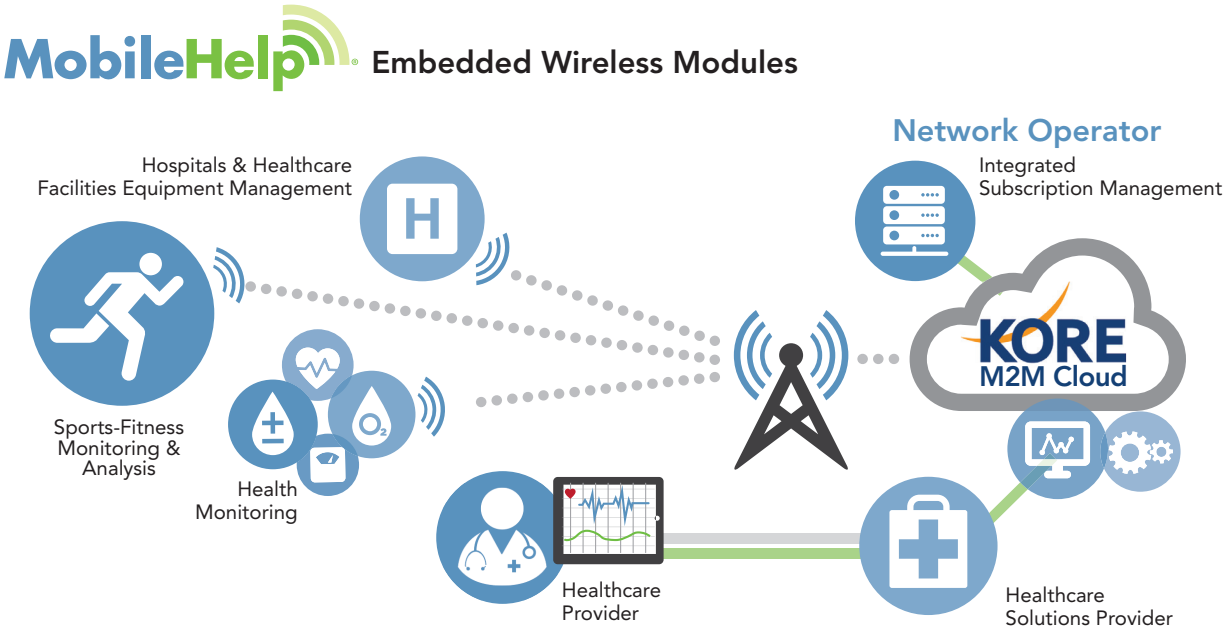
With the aging population who, as Brisbourne says, "are not yet entirely familiar" with the technology, the ability to learn from these younger generations is helping them to take better control of their own health care.

To both Brisbourne and Flippo, this is indicative of the turning of a tide – especially considering that current health IT technologies were not even a possibility not too long ago.

"Things can be done today over the internet that people 15 years ago would never have thought could happen over a cellular network," Flippo said. "Delivering high-quality video streaming over cellular networks was once a technologist's dream, but now that's come to pass. This opens the door to deliver high-security solutions, safety solutions and healthcare solutions that now are actually much easier to deploy."

This greater two-way connectivity has allowed companies like MobileHelp to provide its customers with a broader set of technology options. As opposed to simply providing the reactive medical alert system they brought to the marketplace several years ago, they can now very quickly develop and deploy a new breed of connected technologies, that still provide the benefits of a medical alert system, but also weave in healthcare technologies.

"At the end of the day, if we give patients the tools they need to engage fully in their own healthcare, we will be able to enact real change in the lives of people who want to engage more dynamically in their own health and healthcare," said Flippo.



How Interconnectivity is Enabling the Future of Patient-Driven Health

www.MobileHelp.com

MHP-00731A