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IPSOS VIEWS

Connected Health: A roadmap to success

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GAME CHANGERS

The breakthrough moment for Connected Health was the launch of the iPhone and smartphone apps. It was this development which took Connected Health from the confines of the hospital to being available everywhere.

The growth of Connected Health went a step further with the introduction of the FitBit Flex in 2013. This was the first FitBit product which you could wear on your wrist and tracked the number of hours you slept as well as allowing consumers to understand what walking 10,000 steps a day felt like. It sparked a surge in wearable products with companies like Jawbone, Misfit, Garmin and Samsung all releasing hugely popular products.

However, it wasn't long before the market saturated. By 2016, sales had slumped, and companies had started to put a stop to their wearable productions, leading one commentator to declare "the wearables market appears to be in its death throes"[1]. But looking back now we can see that the wearable wasn't dying, but evolving.

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The following year saw the Apple Watch giving wearables a shot in the arm, with health being front and centre of the product's launch. Since 2017, the Connected Health industry has focused heavily on going mainstream, bringing with it a series of exciting developments, including:

- Apple being granted FDA approval to credit their watch as a medical device
- The first prescription digital therapeutic: reSET-O, for Opioid drug addiction
- The successful launch of the world's first digital medicine: Proteus, in partnership with Otsuka
- Telemedicine growing exponentially and taking huge steps in the UK as Babylon Health becomes accessible to Londoners through the NHS
- Remote monitoring in diabetes and cardiovascular disease (CVD) becoming a reality, with data now streaming directly into Electric Medical Records (EMRs) – game changing for both patient monitoring and management

Connected Health: Starting out

Firstly, when discussing Connected Health we need to define what we mean by the term. It covers the use of technology to provide healthcare services remotely, outside of the hospital or doctor's office, encompassing telehealth programs, remote monitoring, disease and lifestyle management apps, as well as direct treatments (such as virtual reality therapy and smart coaching). It often uses readily available technologies, such as smartphone apps and medical devices that are connected to a cellular network.

Connected Health involves several components which, within Ipsos we categorise as:

1. **Telehealth/Telemedicine** - The use of telecommunications and electronic information to deliver healthcare outside of traditional healthcare facilities.
2. **General health and wellness apps** - Such as MyFitnessPal, Headspace, Sleep Cycle.
3. **Digital Therapeutics (DTX)** - Clinically evaluated, evidence-based devices and apps e.g. reSET-O by Pear Therapeutics.
4. **Remote monitoring** - Technology devices that can be worn by a consumer and track information related to health and fitness e.g. Freestyle Libre glucose monitor.
5. **Personalised healthcare** - For example the use of genomics to determine risk of disease.
6. **Population health management** - The use of big data and predictive analytics to determine drivers and actions to improve the health of entire populations. Here, the goal is prevention rather than treatment.

These components are supported by tools based on both mainstream and emerging technologies. For example, smartphones, 5G, Internet of Things (IoT), blockchain, robotics and Artificial Intelligence (AI).

The big questions:

- **What are the opportunities for Connected Health in healthcare?**
- **Who will it impact? How will this change the traditional structure of healthcare?**
- **What are the challenges to overcome in order to integrate Connected Health into everyday healthcare?**

Opportunities for Connected Health

Consumer expectations are changing

Consumption trends, from managing our finances to how we shop to taking taxis, have all changed dramatically in the past 10 years. And public services will not be able to stand still in this changing world. In healthcare, Connected Health technology can offer more immediate and convenient services, as well as enhancing the volume, speed, and ultimately value of the health data available. There is a general consensus that the availability of technology in the home, on our phones and in our external environments, such as doctor's surgery, pharmacies and retail stores will make health information more accessible and influence consumer behaviour and choices.

Another important note is generational trends, which are also likely to alter the landscape. The upcoming Generation Z (post-millennials), the first truly fast-internet enabled generation, have grown up with technology as an integral part of their lives. Worldwide, youth (those aged 15-24) are the most connected age group, with 71% online compared to 48% of the total population[2].

The integration of digital communication into all aspects of younger generations' lives, coupled with having less experience of more "traditional" healthcare standards, means that communicating with doctors digitally will be both intuitive and effortless for this group. They are known to interact with services and experts in different ways to older generations, i.e. they believe in big data and algorithms[3].

The clinical benefits are already visible

Clinical benefits are widespread and varied. Some of the benefits put forward by the sector include: data-driven treatment decisions at the individual patient level; ability to anticipate risk and be more proactive; improved diagnosis; more reliable drug delivery; continuous and automatic monitoring by healthcare professionals; facilitating better medical decisions; better communication between healthcare professionals (HCP) and patients; optimised treatment for individual patients, and remote access i.e. patients can receive care without visiting a HCP.

Patients taking ownership

Connected Health may also facilitate a changing dynamic between patients and their healthcare professional. With a greater burden on healthcare professionals due to increasing populations, staff shortages, increased workload, increased administration and so on, self-monitoring allows patients to be more in control of their own care and can alleviate some pressure from healthcare professionals. Patients will have a better understanding of their own conditions and health status. This in turn may increase patient motivation for managing their condition and lead to improvements in overall health outcomes.

The economics matter

As it becomes more and more apparent that healthcare systems can't cope with ageing populations and the management of large scale chronic disease, the economic benefits of Connected Health are of extreme relevance to governments and national health bodies.

These have been referred to in terms of more affordable treatments or interventions: The rise of "value-based" contracting and pilots show better economic gains with the use of Connected Health devices. There is also scope for shortening time in clinic due to automatically collected data, thus freeing up HCPs' time to care for more patients, and reducing wastage in waiting times and missed appointments. The benefits will be added to by the convenience of booking appointments and accessing medical information remotely.

Who does it impact and why?

We now turn to the 'consumers' of Connected Health rather than the commercial players, such as technology providers and pharmaceutical/biotech companies. Connected Health has the potential to support both the prevention of disease and the diagnosis, monitoring and treatment of disease. The use of remote monitoring, "big data" and AI can provide accurate information on how to prevent diseases, whereas digital therapeutics, health apps and telehealth are geared more towards managing a condition.

How will this impact the public?

We are already seeing a sense of increased responsibility and ownership over personal health and health data. There is also potential for increased engagement with health management, increased convenience of accessing healthcare, and better affordability. We know from our Ipsos 2018 Global Connected Health trends data that the educated, 25 – 34 year olds and those with dispensable income are engaging with Connected Health[4]. Today, the industry predicts that as the technology becomes more passive, frictionless and seamless, the adoption curve will expand and increase across demographics.

Healthcare professionals possibly have the most at stake when it comes to Connected Health as they are looking out for both themselves *and* their patients. They need reassurance around both maintaining quality standards in delivering care and protecting the privacy of their patients' data. In addition, HCPs will need new skills and an expanded knowledge base on Connected Health applications, including understanding how and when to introduce them into their workstream. The recently released Topol review[5] by Health Education England discusses the need to prepare the healthcare workforce to deliver the digital future.

What about those responsible for the budgets across national health services; the payers? As with any new device or treatment in healthcare, funding is decided based on evidence of improved outcomes for populations, to justify the purchase cost. According to the Digital Therapeutics Alliance, Digital Therapeutics (DTX) needs to 'influence the outcome of healthcare in a meaningful way'[6]. This requires significant financial investment from the developers in terms of clinical trials (including at least one randomised control trial) and ongoing analysis of real-world evidence. However, the upside for both the manufacturer and health service is likely to be significant if clinically meaningful outcomes are achieved.

An interesting adjunct to this is quantifying the prevention of disease. How do you measure the success of an intervention if you don't know whether a person would have contracted that condition or not?

Challenges to overcome

Connected Health is still at the beginning of its integration into mainstream healthcare and there are still many regulatory, financial and behavioural barriers to overcome:

1. **Regulation** - It is important for all products to adhere to industry-adopted core principles and best practices. Industry leaders are working to establish best practices related to the design, manufacture, validation and regulation of these products. Regulatory bodies and national health systems across the world are beginning to identify ways to evaluate and regulate these new tools to ensure product safety, effectiveness, and quality.

2. **Data privacy** - Questions are starting to emerge regarding how to safeguard public health information, especially in light of GDPR and more stringent data privacy laws. For example, the Royal Free Hospital in the UK has been working to research and develop technology to alert doctors and nurses of potential cases of AKI (Acute Kidney Injury) in partnership with one of the world's leading players in AI, the Google-owned DeepMind. The result is an iPhone data analysis and diagnosis app which supports the of a currently difficult to diagnose conditions. This is expected to provide significant benefit to both HCPs and patients in this area. However, there are growing concerns about the privacy and security of digital medical records which have been used by DeepMind to develop this tool.[7]

3. **Reimbursement** - To date, the lack of a clear reimbursement model means there is little incentivisation for doctors to incorporate these new tools into their practice. In addition, there is often no defined supply chain model for digital therapeutics, remote monitoring or health apps. In 2018 we started to see new Medicaid codes come into play in the US, which reimburse for reviewing patient-generated health data between patient consultations. While the incentive remains modest, it shows a move in the right direction.

4. **Proving value outcomes** - For payers, without evidence to show economic value in terms of improving efficacy and outcomes of a condition, they have little to go on in authorising the usage of new tools and devices into their business.

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5. **Deriving value from big data sets** - Having huge volumes of data is one thing, but getting value out of the data is another. Public and private companies will need to invest in development analysis protocols and frameworks driven by skilled experts and data analysts to derive any meaningful value.

6. **Attrition is a problem** - For health apps and remote monitoring wearables (particularly those which are not linked to an already diagnosed condition), there is a relatively large pool of people who stop wearing these devices. We can see from examples of more successful applications that attrition will reduce if the application is specific, accurate and shown to improve outcome (i.e. there is more of a reason for wearing it).

7. **Physician "buy in" and education** - To whom and by whom? With the sector being so new, it is likely that all stakeholders require education on when and how to use Connected Health devices. Other education needs include how to use the data, how and when to communicate with patients/HCPs, and understanding the benefits and limitations of each device or application.

A roadmap to success

Through this journey so far, we are starting to understand a roadmap to success in Connected Health.

When working with Connected Health solution providers, the critical question we always come back to is "**What is the problem you are trying to solve?**". And we advise that they remain sure their product has complete clarity in that. Technology has the ability to deliver so much, but sometimes the most scaled-back products have worked for the clarity they bring to the end user.

One of the optimal approaches is to put the patient at the heart of your design. This means understanding what it is like to live, breathe and experience an illness when developing a product. When Proteus digital medicine were developing their ground-breaking adherence product, their team would immerse themselves in lives of patients with diabetes, cardiovascular disease and mental health problems. Understanding the life flow before building the work flow is something the CEO Andrew Thompson attributes the success of Proteus to.

Once you know the problem and are building out the solution it is critical to i**nvolve the 'user' in the development** of Connected Health technologies from the very early stages. As with other consumer goods, a Connected Health technology has to merge easily into a user's lifestyle, be user-friendly and meet a real need. This can only be achieved through thorough design and functionality testing involving the user throughout the development process. The approach will need to be agile, however gathering feedback early (and fast) will save money in the long term and provide opportunities to pivot when making important commercial decisions. Traditional players in the healthcare industry are not always used to this and it requires a change in strategy and planning. It's not the same to develop a drug in 10 years as it is to create a solution driven by technology that will need a permanent update, refresh and on-going investment.

When preparing your product for launch, engaging with payers and senior policymakers is an important milestone. In the last five years, significant strides have been made in bringing Connected Health solutions to market and establishing new business models, such as "patient as payer" and value-based contracting. However, the challenge remains of how to gather enough evidence to prove the product not only gives value, but gives it in a timely manner, as returns are expected within 12 months. On top of that, how do you make sure your product stands out from the competition? In diabetes alone, there are over 250 products classified as "Connected Health".

Finally, doctors' opinions and endorsement of these technologies is key to consumer uptake. In Ipsos' latest Connected Health survey, 70% of respondents said they would use a connected health device if recommended by a physician (see figure 1). A key benefit of Connected Health is for users to become much more involved in managing their own health: however there is still an upfront need for buy-in from healthcare experts before this can happen. This may change over time with a younger generation of medics who are more accustomed to using technology.

We have also learned that these devices need to ensure low involvement from the doctors themselves and be integrated seamlessly into current practice. Any additional work for doctors without significant incentive in time or money saved will be a barrier to uptake.

Would use Connected Health device if recommended by own physician

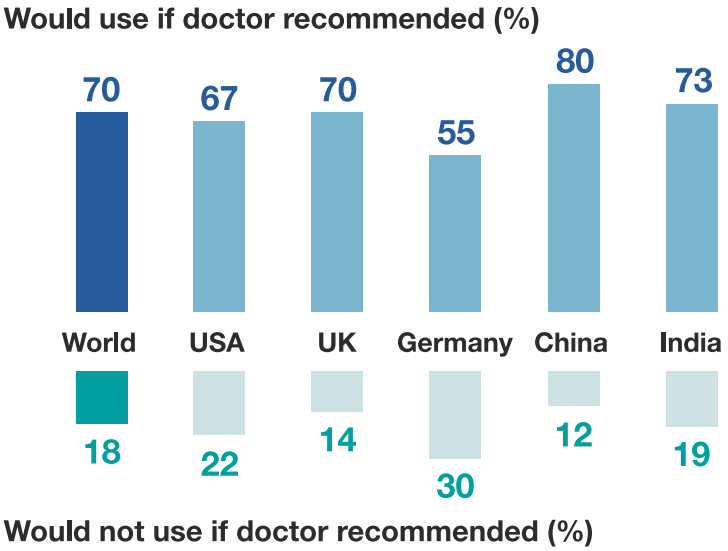

Figure 1

Source: Ipsos Global Connected Health Trends 2018
Base: 23,249 online adultss aged 16-64 across 28 countries May 25 – June 8, 2018

With all the potential challenges to success, there are examples of Connected Health that tick many important boxes:

- ☑ It meets a clear and real health need (both at an individual and a national health level)
- ☑ It is user friendly
- ☑ It is well regarded/recommended by experts
- ☑ It requires low involvement from doctors (it integrates seamlessly into current practice)
- ☑ It provides evidence of better health outcomes and is cost saving

For the thousands of devices and applications that make it to late stage development, or even to market, only those that can tick all these boxes will survive.

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References

1. *https://www.cnbc.com/2017/07/30/wearables-not-dead-but-need-focus.html*
2. *https://www.unicef.org/publications/files/SOWC_2017_ENG_WEB.pdf*
3. *Ipsos MORI: The Lives and Choices of Generation Z*
4. *'Ipsos Connected Health Trends 2018': https://www.ipsos.com/ipsos-mori/en-uk/connected-health-trends-2018*
5. *Topol review https://topol.hee.nhs.uk/*
6. *Digital Therapeutics Alliance: https://www.dtxalliance.org/*
7. *https://inews.co.uk/news/long-reads/google-deepmind-artificial-intelligence-nhs-royal-free-hospital-streams-app/*

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