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## **The digitised employee – can wearable technology help create a healthier, more productive workforce?**

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This year may be the year of wearable devices, judging from the buzz at the International Consumer Electronics Symposium (CES) last month and next week at Mobile World Congress. With the ability to place microsensors virtually anywhere, technology is more wearable than ever, and individuals are embracing technology that moves with them through their daily lives.

Taken together the global market for smart glasses, activity monitors, and smart watches could reach \$3bn in 2014. While the use cases for smart glasses aren't yet developed enough to outweigh the aesthetic concerns for the average consumer, innovators are rapidly working on apps to make them more useful, if not irreplaceable.

They have enterprise potential in heavy industries such as manufacturing and oil and gas where a worker in the field might benefit from hands-free access to instructions, maintenance guides, videos or live interaction with a remote trainer or team. Yet, in the near term, the rationale for widespread adoption of smart glasses in the enterprise doesn't exist yet.

If the eyes are the windows to your soul, the array of wearable tech devices suggests the wrist may prove to be the door to your health. The increasing number of fitness bands and activity monitors are becoming more sophisticated, with the ability to measure the intensity of activity and even distinguish the type of activity and provide feedback on not just level of activity, but form and efficiency.

Other devices now monitor blood pressure and blood oxygenation among other indicators. All of these technologies can communicate with apps on the most sophisticated "wearable" most people use – the smartphone.

How can the enterprise benefit from this pervasive consumer technology?

As we consider the possibilities gained through the digitisation of the physical world, we can't overlook the potential benefits from digitisation of the employee. And while a more specialised application of the technology of fitness bands has some value for timework studies and better understanding employee interaction patterns, the best near-term opportunity for companies to use these consumer devices might be to improve employee health and wellness by using wearables in concert with the social media and other technologies the workforce already uses.

The large presence companies like United Healthcare Group had at this year's CES supports the potential for integrating consumer technologies to impact population health and healthcare costs. Companies will benefit from digitisation of the employee. Those that provide health insurance, as in the US, can negotiate lower premiums for a healthier employee population. Others will pay less as a share of employee health expenditures. All companies will benefit from reduced employee absenteeism and lost productivity associated with poor health.

Of course, neither healthcare technology nor employee wellness programs are new. Traditional wellness programs have often been less effective than expected or haven't yielded sufficient return on investment. What is different now is the convergence of factors – cheap, unobtrusive sensors, mass adoption of sophisticated mobile devices, ubiquitous wireless broadband access, an ageing population, and reforms that are addressing costs and shifting more financial responsibility to individuals. All of this is creating a unique opportunity to integrate wearable devices and other technologies to improve wellness and manage illness.

What might this look like?

In 2011, Progressive Insurance, a US-based insurance company, launched a program whereby a consumer could receive a personalised, often lower, rate on their auto insurance if they installed a small device, the Snapshot, to monitor their driving behaviour. While self-selection may be part of the answer, these drivers also had the benefit of greater awareness and information about how their driving affected their safety and the price they paid. Many modified their behaviour as a result.

Imagine if employees could get a lower health-insurance rate by demonstrating a healthful lifestyle. Unlike the Progressive example, many individuals are already using these devices. Companies can experiment with these workers to develop programs and tools that provide greater transparency into how individual choices affect health and incentives and support for individuals to improve their own health.

Predicting an individual's health over time, and understanding how to improve it, requires creating a profile that reflects a person's behaviours throughout the day, their movement and physical activity, their eating patterns, their socialising, etc.

The data that really predict long-term health, and give indicators about how to affect it, do not reside in the electronic health record (EHR). A more predictive program would draw data from employees' activity monitors, credit card or grocery club records and social media. Where we go, what we do, what we buy – these all change our health profile.

One lesson from the fitness industry relevant to companies seeking to improve wellness (or productivity or effectiveness) is that accuracy doesn't matter; changing behaviour matters. So it is less a question of finding a device/application combination that can capture every movement and every bite and accurately translate them into calories out and calories in, than it is to find a combination of device and data and social platform and incentives that spur employees to move around more, to eat more healthfully and to build connections with each other.

Many grocery stores, airlines, hotel chains and other vendors have demonstrated that people will share information to get better service or save money. A trusted third party – not the employer and not the insurer or other payer – would have to handle the aggregation and analysis of data.

But this is already the norm for most employee-wellness programs. The key difference being that, in the case of a comprehensive health-profile program, this third party would be aggregating a much higher volume of personal data than the typical employee self-assessments – possibly vital signs, activity patterns, physical location, schedule, detailed buying habits – thus requiring an incontrovertible policy of data privacy and security.

Of course, it's not about the technology. Time and again, from the first attempts to introduce telemedicine back in the 1920s to the EHR, the healthcare industry has found that technology itself is not the answer, or at least not the limiting factor. Many innovations that should have driven down costs didn't, either because of structural issues in reimbursement or poor execution or lack of alignment with incentives – healthcare technology companies continue to build better mousetraps without necessarily understanding the mice.

Ultimately, the opportunity for companies to improve employee health and wellness has to revolve around the individual deciding to make changes to his or her own lifestyle and then actually doing it. The difference now is that mobile technology and analytics provide the tools to engage and enable the individual, and rising individual responsibility for healthcare costs provide more financial incentive than ever before for individuals to understand and improve their complete health profile.

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