



Wearables Weekly

Compiled by **Sarah Kunkle** and **Gillian Christie**

July 20 – 24, 2015

Your Body, The Battery: Powering Gadgets From Human “Biofuel”

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Researchers believe that the average amount of energy burned by human bodies is enough to power a smartphone, and are investigating how to practically harness this energy to power electronic devices. In 2013, a joint US-Chinese research team developed a fabric that generated electricity using the kinetic energy of human movement. Researchers from Australia and China produced a fabric capable of turning thermal energy into electricity. Other teams are looking into enzymatic biofuel cells (EFCs)— battery-like devices that can generate electricity by breaking down energy-rich chemicals in bodily fluids.

Wearable Technology Empowering Business

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— Enormous business potential —

25.7 million

smartwatches are expected to be shipped worldwide in 2015 (7)

\$6.3 billion

expected to be generated through wearable devices in enterprise settings this decade (1)



75 million

wearables are forecast to be deployed in enterprise settings between 2014 and 2020 (1)

Smartwatches

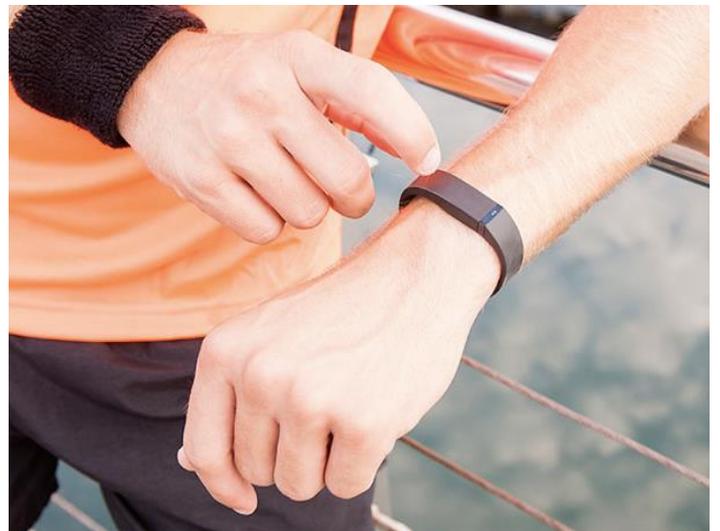
and “wellness in work” schemes are set to be the major drivers of early enterprise use of wearable technologies(1)

Recent reports by PwC, IDC, and Forrester have highlighted the tremendous potential for wearable devices in enterprise settings. These reports have emphasized the health applications of wearables – digital health startups raised \$2.3 billion in 2014 and estimates suggest that mobile health apps are set to generate \$23 billion by 2017. Although a Symantec report notes that privacy and security are central concerns to users of wearable devices, 70% of wearable users surveyed said they would accept data being streamed about them if it resulted in lower insurance premiums.

Can Wearables Really Keep Us Fit?

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Many wearables companies market their devices as vehicles to behavior change and improved health, but many of these claims have not been critically evaluated. Researchers at the University of Pennsylvania are investigating the effectiveness of fitness trackers. In a preliminary study, they found wearable devices and smartphone apps were all fairly accurate in tracking steps in a controlled setting, with the exception of the Nike Fuelband (which has since been taken off the market). Surprisingly, smartphones showered less variability than the wearable devices. Another main finding of the UPenn research is that devices alone are often not enough to change behaviors.



Other Health Technology Headlines:

[Penn Medicine tests continuous, wearable patient monitoring](#)

[Biketag is a smart safety sensor for cycling](#)

[US women's national team aided by Polar wearable technology in World Cup win](#)

[Teen girls get the coolest wearable out there](#)

[Garmin's Vivoactive fitness tracker isn't for everyone -- and that's okay](#)

[Lexus has built a car with a human heartbeat](#)

[Soho teen wins award from city for invention to help deaf people](#)

[The future of health rests on the Internet of near things](#)

[The history of mobile health: from cell phones to wearables](#)

[Wearable tech: Insights into the intellectual property rights](#)

[Designing wearables for people who don't like wearables](#)

[Apple Watch satisfaction is off the charts](#)

[Apple Watch snags 75% of global smartwatch market](#)

[Will Apple be the smartwatch saviour?](#)

We would be interested to receive your comments on our Weekly Wearables Newsletter!

Please contact Gillian Christie, Health Innovation Analyst, Vitality Institute at

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