

Down Electric Avenue – Where digital devices may take us

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‘Wearables’ belong to the fast-expanding group of internet-connected tools known collectively as Usage Based Devices (USB). The demand for ‘wearable’ health and wellness technology is expected to grow as new ideas and products emerge. Wearables can involve micro-sensors embedded in textiles, applied to the skin or integrated into consumer electronics that can be worn or carried as an accessory.

It follows that insurers take notice of what’s happening in USB and wearable technology because it could soon influence the business. Pricing, product design and even risk selection could be shaped by policyholders’ use of discrete devices that automatically track their biometric information. Insurers could modernise their transactions and processes on the back of health digitisation.

Many of the current applications for wearable technology are in health monitoring, mobile treatment and practical nursing. Sensors attached to the body or inside garments make it possible to track patients remotely and over extended periods of time, which is important for physical medicine and rehabilitation.

The most easily available wearable technology is fitness related gadgetry. The programmes use data, counted steps, burned calories and attained heart rates, gleaned from wearable fitness devices. Electronic fitness devices prompt users into activity while logging output data and physiological signs unobtrusively and with little or no personal input. Devices let users set goals and offer prizes when they achieve them. Wireless connectivity and simple interfaces help make digital devices user-friendly. Devices automatically upload data to the web where they may be analysed and shared on social media or manufacturer platforms.

Future applications could extend to monitoring breathing, heart rate and sleep, tracking hydration levels and calorie intake, recording movement, controlling therapy and pain management, and programming exercise. That might mean continuous monitoring of physiological cues associated with health.

It is likely that single-purpose activity monitors will eventually disappear in favour of integrated solutions or be replaced by smartphones operating as a hub linked to wearable accessories. Mobile phone functionality is already heading towards health and fitness tracking.¹ Some wearables manufacturers are leveraging the newest smartphone processors that were designed specifically to log movement and activity.²

Microfluidics — the manipulation of tiny amounts of fluid — now has the potential to provide home versions of medical laboratory tests and as a result is, perhaps, of greater interest to insurers. The technology allows for the results of blood, saliva and mucus testing to be run through a smartphone using a simple microfluidic adapter. In theory, any test could be performed using this technology, giving users detailed health feedback far beyond steps and calories.

Wearable technology could add to the increasingly important role played by big data in a life insurance context, collating health metrics for life portfolios, for example, just as 'black box' telematics is doing in motor insurance. Devices automatically upload data to the web where they may be analysed or shared on social media or manufacturer platforms. But much of this may depend upon consumers' philanthropy – sharing their personal data to create analytical tools that can help clinicians, researchers and insurers control healthcare costs.

People will only wear things with allure and many of the currently available products lack mainstream appeal. But as more and more people take personal control of their health and fitness, they will use devices to generate, store and share the results. And it isn't such a giant leap to imagine carriers using discrete devices to access policyholders' biometric information and digitized health data with their permission.

The consumer wearables currently available do not yet offer the life industry a significant alternative to its traditional, analogue risk selection tools. It is not clear if simple monitoring devices can help life and health insurers minimise risk but there is evidence that exercise is beneficial to health. People who maintain or improve adequate fitness were less likely to die from all causes and from cardiovascular disease.³ Low cardiorespiratory fitness is a strong independent predictor of cardiovascular and all-cause mortality.⁴ Cardiovascular disease, type 2 diabetes, obesity and cancer are drastically improved when physical activity and exercise form part of a medical management plan.⁵ Augmenting conventional underwriting information with digital data could see insurers sharpening their risk profiling process.

The changes coming in healthcare do not only revolve around USB devices. Digital healthcare accessed from the internet has the potential to improve treatment outcomes and create efficiencies. The starting point of electronic health records could be extended to include assisted healthcare, tele-medicine or the latest wearable technology.

Remote monitoring of physical functions does not have a long history but even 20 years ago the difficulty of integrating developing health technologies into traditional organisational structures was recognised.⁶ The insurance industry faces a similar challenge to respond to and exploit developments in digital devices.

Already, the data generated from USB technology is reshaping how life insurance is transacted. Some providers offer wearable fitness devices to policyholders for recording their physical activity. The idea is to promote fitness and wellness as an integral part of coverage, giving policyholders rewards in return for complying with set health goals.

This has great appeal because the information they get can help insurers to develop new products that improve their customers' health and increase loyalty. The negative physiological impact of a sedentary lifestyle and physical inactivity on health and physical functioning are well established.⁷ Regular physical activity not only promotes psychological wellbeing but reduces the risk of developing diabetes or hypertension or dying from cancer or heart disease.⁸

The potential for tech to revolutionise the insurance industry is clear but how it does so is completely in our hands. Martin Luther King stressed the need to adjust to new ideas in the face of challenge, describing sleeping through revolution and protecting the status quo as the: "great liabilities of history". Education reformer Ted Sizer said reforming momentous structures is hard because the status quo has special momentum – "things remain the same because it is impossible to change very much without changing most of everything".⁹

The question remains if these technologies will prove to be genuinely disruptive of life insurance distribution or even revolutionise underwriting. Changing everything means insurers must engage with software developers and create new roles for people with the skills to create a new generation of digital analytics.

Today, most consumer wearable technology may only appeal to a subset of the insurable population. To be universally adopted, USB tech must become low-profile and function in the background and concerns over data privacy must be allayed. To change insurance distribution, it must be harnessed to digital – read mobile – solutions. To revolutionise underwriting, the outputs from USB devices and other wearables must be correlated with the traditional selection criteria that they may, in future, replace.

It is easy to put off the inevitability of change but doing so allows the status quo to regroup according to blogger Seth Godin: “change almost never fails because it’s too early. It almost always fails because it’s too late”.¹⁰ To understand the potential of USB technology, work on this must begin now while the market is in its infancy.

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¹ <http://9to5mac.com/2014/03/17/this-is-healthbook-apples-first-major-step-into-health-fitness-tracking/>.

² <http://fittechnica.co.uk/fittechnica/2014/01/new-fitbit-activity-tracker-is-the-iphone-5s/>.

³ Blair S et al “Changes in physical fitness and all-cause mortality – a prospective study of healthy and unhealthy men” JAMA 1995;273:1093-1098.

⁴ Wei M et al “Relationship between low cardiorespiratory fitness and mortality in normal-weight, overweight and obese men” JAMA 1999;282(16):1547-53.

⁵ Durstine JL et al “Chronic disease and the link to physical activity” J. of Sport and Health Science v2 issue 1 (2013) 3-11.

⁶ Ball CJ, McLaren P (1995) “Telemedicine: lessons remain unheeded” BMJ 1995;310:1390.

⁷ Saltin B et al “Response to exercise after bed rest and after training” Circulation 1968;38 (Suppl.5):5-11.

⁸ Report of the Surgeon General “Physical activity and health – the link between physical activity and morbidity and mortality” Centers for Disease Control (1999).

⁹Sizer T (1984) “Horace’s compromise”.

¹⁰ Godin S (2008) “Tribes: We need you to lead us”.