



Beyond Health Wristbands: A Vision Of Next-Generation Wellness Technology

Would you wear a fitness tracker? What if it could not only track your steps and your sleep habits, as today's wristbands do, but could integrate information about any chronic diseases, such as diabetes or hypertension, in a way that would objectively improve your health?

The wearable medical device market is still in its nascent days, but recent forecasts by International Data Corp. (IDC) show the global market for wearables rising from 19.2 million units in 2014 to 111.9 million units in 2018. While today's offerings are pretty basic in their functionality, we believe that these wearable devices in the future will bridge healthcare and consumer fitness. Already, the most innovative companies are beginning to position themselves for a future in which more personalized healthcare incorporates increasingly vast amounts of data from consumer technology.

We're not there yet, but investors are already paying attention to the space. Last year, venture capital firms poured \$458 million into wearables, an 80% increase over 2012. That investment should continue to grow as next-generation devices add medical technology, such as the ability to track blood pressure or glucose levels. New functionality should also expand the devices' appeal to more groups of people, and could potentially allow them to become covered by health-insurance plans.

That's the long term. In the shorter term, however, the devices remain more of a novelty than a necessity, and a number of factors could limit their appeal. For one, the main features of today's activity trackers, such as pedometers and calorie-expenditure calculators, are already being integrated into

The wearable medical device market is still in its nascent days, but recent forecasts by International Data Corp. (IDC) show the global market for wearables rising from 19.2 million units in 2014 to 111.9 million units in 2018.

smartphones, negating the need for a separate device. For another, the current technology tracks data, but does not directly translate that into an objective health benefit. The upshot: Without additional functionality, new users may simply leave the device in a drawer, just as the vast majority of new users of health and fitness apps stop using them after two weeks.

For usage of these devices to spread beyond their core consumer group, they will need to incorporate better design and functionality. Ultimately, different user groups will care about different things. Some may care about fitness, others about weight loss, and still others about cholesterol, stress or improved management of a chronic disease.

Beyond Health Wristbands: A Vision Of Next-Generation Wellness Technology was written by **Alex Evans**, a managing director in L.E.K. Consulting's Los Angeles office, and **John Westwood**, a managing director in L.E.K. Consulting's Boston office. For more information, contact medtech@lek.com.

The Rapidly Changing Market

The market for personalized medical devices today is competitive, highly fragmented and largely geared toward consumers, with current offerings – for the most part, simple wristbands – focused on the passive monitoring of basic activities. The devices by market leaders Jawbone, Fitbit, Nike and Basis can count steps, calculate caloric expenditure and measure sleep quality.

The convergence of consumer health and fitness products with new disease-specific devices is a major area of growth. Google, for example, is developing a contact lens that will monitor blood sugar and automatically log the data...

But the market is changing quickly, as the technology advances and as the line between these wearables and smartphones blurs. Today's market leaders may fall by the wayside or find themselves lagging, as new players enter the market and gain traction among consumers.

A plethora of new entrants, including Samsung, LG and Garmin are expected to introduce new activity trackers this year that will incorporate features like LED touchscreens that permit real-time access to step count and track calorie expenditure; smartphone integration that allows users to receive incoming calls and text alerts on their devices; and personalized goal-setting and feedback.

The Apple Watch (to be released in early 2015) includes biometric sensors and will be integrated with HealthKit, Apple's central repository for a user's historical health and fitness data, including heart rate, hydration level and blood pressure. Through WatchKit, Apple's new kit for developers, the company has opened up the platform for ongoing innovation in health and wellness-related apps for the Apple Watch.

In addition, though it's not exactly an activity tracker, the Wello smartcase is an iPhone case with built-in sensors to monitor a user's health vitals, including blood pressure and temperature. Users that want to measure their vitals on the Wello smartcase

– which is seeking FDA approval and will be marketed as a medical device – will need to place their fingers on case sensors. First generation products like Apple Watch and Wello are quickly generating interest from health-minded consumers and setting the stage for broader market acceptance as new technologies are introduced.

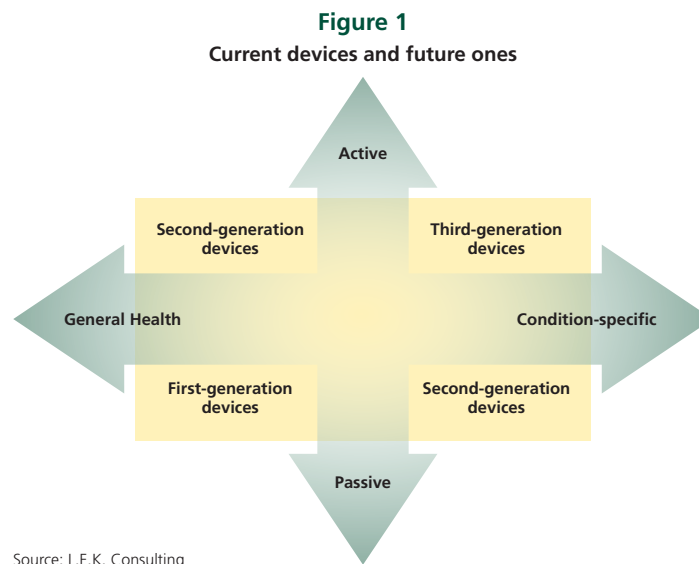
The second-generation products will be more advanced across multiple dimensions. New innovations such as the ability for wearable devices to automatically track caloric intake or receive personalized exercise and diet recommendations are top of mind for next generation developers. While such a breakthrough would generate large consumer demand, many industry observers believe the development and testing cycle will take some time before this technology is available to the general market.

Fit-tech companies like Airo Health and GoBe had previously announced plans to develop these products but nothing has materialized yet.

Advances are happening simultaneously in the MedTech market. There, activity trackers will move from promoting general health and wellness to tracking condition-specific measurements with a particular application for patients suffering from chronic diseases, such as diabetes or hypertension. The convergence of consumer health and fitness products with new disease-specific devices is a major area of growth. Google, for example, is developing a contact lens that will monitor blood sugar and automatically log the data for both patients and their physicians to access.

Unlike the first-version consumer devices, these next-generation MedTech devices likely will attract greater FDA scrutiny and will need to be able to demonstrate their reliability, safety and efficacy. If they succeed, the new devices could be covered by health insurance, opening up a new wave of buyers who currently wouldn't spend \$100-plus on a consumer device. Both traditional pharmaceutical companies and innovative MedTech companies like Proteus Digital Health are developing enhanced connectivity that could help large populations of patients and other stakeholders with chronic diseases better manage their diseases. A number of companies are researching measuring electrodermal activity as an indicator of stress.

The first-generation devices are passive and geared toward general health, and have a relatively small market potential. Second-generation devices will combine more active monitoring (such as caloric intake) or condition-specific monitoring (glucose monitoring for diabetics, for example), and should attract far-greater numbers of users. Ultimately, third-generation devices will be both active and condition-specific (see Figure 1).



Eventually, third-generation activity trackers will be multipurpose, combining the best of the functionality from both the consumer products and the MedTech ones. These next-generation devices would allow consumers to monitor their own individual wellness goals and to share their vitals with their physicians to develop personalized care plans with an emphasis on preventive medicine. While the technology isn't there yet, we believe that these products will display the following characteristics:

- **Personalized.** The next-generation activity trackers will measure health vitals and make personalized recommendations for improved performance. The information they provide must be not only accurate, but actionable, driving continued consumer engagement with their devices.
- **Real-time.** Information from the devices will be analyzed in real time and transmitted seamlessly to the user's physicians, who will be able to incorporate this new source of data into an individualized health plans.
- **Fashionable and ergonomic.** Not all consumers want to wear a fitness band, which doesn't suit their style,

particularly when dressed up. Version 2.0 activity trackers will move beyond the current fitness bands; they may be embedded in "smart" clothing, or designed as contact lenses, eliminating the fashion conundrum.

The hope is that as the devices become more sophisticated – not only monitoring steps taken or sleep patterns – they could truly become tools

to manage patients' health. At some point, as the technology advances, they could become not merely consumer wearables, but FDA-approved devices that could be prescribed by doctors and covered by health insurance.

The Future Of Wearables

Today's wearables are fairly simplistic, but we believe future devices will become far more complex – and offer increasingly powerful direct marketing opportunities. The ability of these devices to bundle and analyze increasingly large amounts of health and consumer data, and their integration with mobile phones' location-based information, will yield new opportunities for businesses to reach increasingly empowered consumers. Might someone who wears a wristband choose to subscribe to a service that offers tips on nutrition and exercise? Could a triathlete receive not only meal plans for the training period, but texted food shopping lists for purchase at a local grocery store, or delivery via a subscription food delivery program?

Grocery retailers, nutraceutical marketers, health clubs, medical providers, medical device manufacturers, and others along the health and wellness continuum may all find that their existing business models are ultimately enhanced – or upended – as the wearable device market expands. Savvy business executives will want to start thinking today about the potential for new tie-ins and new service opportunities.

The following questions are a starting point for sorting through the thorny issues:

- What might wearable devices mean for my business?
- How will increased adoption of wearables change the way my business communicates with existing consumers – or prospects for new ones?
- Are there new services that wearables enable? Or new product offerings that my business could now introduce?
- How can the data from these devices help my business to more accurately target the best consumers? Or to come up with the products and services that those consumers truly want?
- Will my business need to upgrade its technology in order to take advantage of these new opportunities? And if that's the case, what is the smartest, and most cost-effective, way to do so?
- Would a partnership or acquisition be helpful? If so, what gap in the company's ability to tap the wearables market would it fill? Is such a deal necessary? And what is the best way to think about that decision?

As these wearable devices gain more users, and as the technology advances to include more functionality, their impact could be profound in better health and longer lives among large populations, and perhaps even a slowing of rising healthcare costs. And as they spread, they could provide yet another new way of interacting with consumers, and the most savvy businesses will want to be ready for that upheaval before it occurs.

Editor's Note: *Beyond Health Wristbands: A Vision Of Next-Generation Wellness Technology* was revised in September 2014 to reflect current market conditions.

INSIGHTS @ WORK®

L.E.K. Consulting is a global management consulting firm that uses deep industry expertise and analytical rigor to help clients solve their most critical business problems. Founded more than 30 years ago, L.E.K. employs more than 1,000 professionals in 21 offices across the Americas, Asia-Pacific and Europe. L.E.K. advises and supports global companies that are leaders in their industries – including the largest private and public sector organizations, private equity firms and emerging entrepreneurial businesses. L.E.K. helps business leaders consistently make better decisions, deliver improved business performance and create greater shareholder returns.

For further information contact:

Boston

75 State Street
19th Floor
Boston, MA 02109
Telephone: 617.951.9500
Facsimile: 617.951.9392

Chicago

One North Wacker Drive
39th Floor
Chicago, IL 60606
Telephone: 312.913.6400
Facsimile: 312.782.4583

Los Angeles

1100 Glendon Avenue
19th Floor
Los Angeles, CA 90024
Telephone: 310.209.9800
Facsimile: 310.209.9125

New York

1133 Sixth Avenue
29th Floor
New York, NY 10036
Telephone: 646.652.1900
Facsimile: 212.582.8505

San Francisco

100 Pine Street
Suite 2000
San Francisco, CA 94111
Telephone: 415.676.5500
Facsimile: 415.627.9071

International Offices:

Beijing
Chennai
London
Melbourne
Milan
Mumbai
Munich
New Delhi
Paris
São Paulo
Seoul
Shanghai
Singapore
Sydney
Tokyo
Wroclaw

L.E.K. Consulting is a registered trademark of L.E.K. Consulting LLC. All other products and brands mentioned in this document are properties of their respective owners.

© 2014 L.E.K. Consulting LLC