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Wipe health woos with wearables

06 May 2016 | Features | By BioSpectrum Bureau

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Healthcare and fitness are the two segments where wearables are gaining increasing acceptance. Wearables fitness bands are becoming more and more desirable. From general-purpose devices like fitness bands that track steps, calorie intake etc to the more serious diagnostic devices, wearables are slowly getting integrated into the healthcare system.

Wearables for wiping worries

Wearable technology companies are addressing several different aspects most prominently lifestyle/active monitoring, smart watches that can connect with phone and provide notifications and medical grade monitoring of one's health.

"In an emerging economy like ours, remote diagnostics and medicine is a huge need. Wearable technology can help by taking most of the diagnostics out of hospitals and into the patient's phones," says Mr Anshuman Singh, founder, RetiSense, a start-up firm developing Stridalyzer, an injury-preventing running wearable (insole).

With innovation and advancements in wearable technology, specifically miniaturization of sensor technology, wireless communication technology, and wearable computational technology has made possible the development of small, light, durable, comfortable, safe and low cost wearable medical devices. "The miniaturization of wearable devices has also enabled clinical monitoring beyond the hospital area, in the home or during outdoor activities," said Ms Shivani Jaiswal, associate manager, IndustryArc, a market research and consulting firm.

At present majority of the companies are offering general purpose devices that offer activity tracking. (e.g. step counts, general estimate of physical activity etc). "However, we are starting to see more purpose-built products and services that fit particular scenarios such as specific fitness activities (running, swimming, golf etc.) and health conditions (e.g. diabetes, neurological disorders, chronic diseases) ," mentioned Dr Alick Law, director of marketing and business development, Sensoria. Sensoria designs, develops, and produces body-sensing wearable devices.

Its products include anklet and sensor infused socks that provides step counting, speed, calories, altitude, and distance tracking data as well as tracks cadence, foot landing techniques, and weight distribution on the foot as users walk and run;

and fitness bras and t-shirts with heart rate monitor that provides heart rate data.

Speaking on the similar lines, Mr Mohammed Hussain Naseem, co-founder and CEO-2mpower Health Management Services said, "Many wearable technology companies have mushroomed in the past one---year. Most of them are focusing on low hanging fruits - preventive care through quantification of data. However, many specialized companies are focusing on more urgent issues. They are developing wearable medical technology products for disease management, efficient medical measures and real time response during emergency situations."

2mpower is a technology company focused on preventive health management. GetActive is their current product which promotes physical activity.

Wearables: Fancy gadgets or serious health devices?
Most of the times wearables are seen as a cool, intelligent fashion accessory but can it evolve beyond that to become an essential part of healthcare? It can be asserts Dr Srinivasan Murali, CEO at SmartCardia, a spin-off from the Embedded Systems Lab (ESL), EPFL. SmartCardia's revolutionary wearable technology enables new fitness, gaming, wellness and medical applications.

He said, "While current fitness bands are for gadget lovers and early adopters, we will see a wave of products in the near future that would monitor more concrete health parameters, such as blood pressure, stress levels and would connect the users with specialists."

"The question shouldn't be whether they can become a part of the healthcare system, but rather how soon it'll occur. A lot of movement in the industry is already in place to service this exact gap, Mainstream wearable devices through sponsored wellness programs, and pharmaceutical and provider networks will leverage wearables to integrate with the other content and services around key solutions that go beyond prescriptions and pills to drive meaningful behavior change," said Mr Pratik Saraogi, founder and CEO at Oxstren Wearables, a start-up developing fitness accessories. Its product line include smart workout gloves, smart Wristwraps and smart headbands.

There are active research projects exploring the potential of these products to improve patients' lives. For example, recently Biogen and PatientsLikeMe's study to quantify physical activity of patients with multiple sclerosis (MS) between doctor appointments finds that wearables improve walking ability in MS patients.

"MS impairs the ability to walk for many people, yet we only assess walking ability in the limited time a patient is in the doctor's office. Consumer devices can measure number of steps, distance walked, and sleep quality on a continuous basis in a person's home environment. These data could provide potentially important information to supplement office visit exam," said Dr Richard Rudick, vice-president, value based medicine, Biogen, while releasing the study result.
Hopefully we will see more conclusive outcomes in the near future.

At present, the major market is for activity trackers. The real value add to the consumer would come when we have wearables that can track medically accurate information, helping in preventing health risks (such as cardiac issues) and allowing personalized medication and treatment.

Growing popularity of wearables
The fact that nearly every month there is a new wearable in the market says something about the growing fascination for these wonder gadgets. Many factors are spurring the growth of these health devices. Consumer awareness of healthy and active lifestyles is one of the major factor why everybody want to wrap their wrist with these health bands.

Dr Murali said, "Activity tracking and having a healthy lifestyle is picking up. There is a strong need for health monitoring devices that could help the users monitor regularly their health conditions, such as sugar level or blood pressure."
As per Ms Jaiswal, "The growing popularity of wearables are increasing caused by following reasons like health consciousness among people, increase in health consumer behavior among people, greater health trend to move from hospital care to home care and subsequently to personal care and so on."

Also, increasing lifestyle diseases that demand continually monitoring of the vital stats also fuel the demand for these wearable. "With heart disease and diabetes remaining two of the major causes of death globally, keeping a healthy and active lifestyle has never been more important. Our UP bands helps people better understand their health and well-being by tracking sleep, activity, and nutrition along with clear tools - through our UP app and Smart Coach system - to help them take action and live better," said a Jawbone Spokesperson.

The fact that most of the wearables, especially wrist bands also makes for a very good looking accessory could also be one

of the reasons that people are drawn towards it.

This is a hype cycle, when people are intrigued and experimenting this new technology. The benefit it provides today to an individual is limited and utility is "good to have." It has no real urgency for adoption, says Mr Naseem.

Consumer Traction
An Accenture survey (Accenture Digital Consumer Tech Survey 2014) found that more than half of consumers (52 percent) are interested in buying wearable technologies such as fitness monitors for tracking physical activity and managing their personal health. The survey of more than 6,000 people in six countries - Australia, Canada, India, South Africa, the United Kingdom, and the United States - showed that many are also interested in buying smart watches (46 percent) and Internet-connected eyeglasses (42 percent).

Among the six countries, consumers in India were most interested in buying fitness monitors (80 percent), smart watches (76 percent) and Internet-enabled eyeglasses (74 percent).

"Wearables are selling as an 18 billion dollar business. We have companies like Garmin, Fitbit and Jawbone doing extremely well. A lot of people now are getting health conscious so people are buying devices. For some people it is becoming a social statement, and people want to show off their bands. But we do see the trend changing, said Mr Chirag Jagtiani, founder and CEO at Fitkat Inc. Fitkat is an activity tracker that tracks your steps, calories, water intake and is also a ct as a pill reminder.

The Wearables are being successfully used in home healthcare, remote patient monitoring (RPM), fitness and sports etc among others.

"I think adoption has been steadily increasing. Momentum has picked---up in countries like US and some parts of Europe. InternetofThing (IoT) is a big opportunity and wearables are an integral part of this revolution. Consumers are intrigued, experimenting and assessing the utility. As companies in wearables space, we need to give more tangible reasons its adoption to consumers," said Mr Naseem.

Market research reports are very bullish about the wearables industry and pegged it to be the next billion dollar industry in the years to come.

Trends: Present and future
Wrists band undoubtedly at present are synonyms with the wearables but moving on to the future we will see different forms of these wearables and the future of this space will involve more than just a wrist band.

"Technology is fast changing in the wearables market. The next generation devices would be patches that can stick on different parts of the body and obtain clinical parameters, such as the ECG. We will also see electronic skin tattoos that a user could wear for a week or so using an adhesive, and would hardly notice even the existence of the patch. We will have sweat sensors that could provide many of the data that we usually obtain using blood tests today," said Dr Murali.

Wearable blood glucose monitors is another possibility that can surge in the coming future. "The blood glucose monitors are becoming extremely important as persons suffering from diabetes are increasing. Therefore, as the diabetes prevalence rate becomes high across the globe with expensive diagnosis, it is contemplated that wearable blood glucose monitors will be adopted at mass level," said Ms Jaiswal.
"We can speak for Jawbone and we can clearly say that the UP platform and hardware continue to grow globally - People love the design and feel of UP, which is a huge competitive advantage for us. People care about it making a difference: we are the only platform delivering Insights and behavior change helping people not just see their data, but understand it, and use it to change their behavior. And stepping into the future, we will see more multi-sensor devices like UP3, that take the sector and these devices to another level - We have over 1000 granted or pending patents and no other company matches our expertize around multi-sensors," said Jawbone's Spokesperson

As per Mr Saraogi, primary wearable devices will act as central connectors for all kinds of devices and information. Today the smartphone is a de facto wearable device-a central hub for accessories and data gathering. In time, smart watches and smart glasses will emerge as key primary devices, acting as a central collection portal for different wearables. Allocations of these hubs may serve to gather and host specific data, as in the Medical field, or serve more broadly as integrating hubs, like the Apple Health Kit.

He further added, "Secondary wearable devices will be intended to capture specific Action or measurement, data that can then be funneled back into a primary Wearable device for more comprehensive context, analysis and, ultimately, Actionable insight. Examples of secondary wearable devices include shirts, Shoes, helmets, fitness bands, badges and more. These

secondary devices will be companion devices to primary wearables-and as secondary devices become more prolific and on point, the quality of data will improve, making the entire Wearable ecosystem more powerful, more impactful and more actionable."

The future of technology is wearable and there is no doubt about that. However the form factor will undergo a lot of iteration over the years. "I see the biggest scope of such integrating with textile. Clothes are something we will always wear and be passionate about. So when such technologies start being incorporated into textiles then there will be a dramatic rise in acceptability of such products," said Mr Aanan Khurma, co-founder at Observe Design Inc.

Observedesign is a healthcare innovation start-up focused on reducing healthcare associated infections in hospitals with innovative design and technology solutions. Its integrated platform allows healthcare facilities to observe, record and analyse the adherence to infection control protocols in their facilities.

Most apparel brands like Ralph Lauren and Under Armour are realizing this opportunity.

Ralph Lauren has launched (available for $295) PoloTech Shirt, which works with an iPhone or Apple Watch to put real-time workout data in the palm of your hand. Created exclusively for use with the shirt, the PoloTech App offers live biometrics, adaptive workouts and more. The shirt seamlessly melds modern innovation with an iconic look that is unmistakably Polo.

Similarly, Google and Under Armour are also working on connected clothing. This space as we know it going to change dramatically.

Market in 2020
Global wearable medical device market is growing at a CAGR (compounded annual growth rate) of 21.3 percent from 2014-2020 and is estimated to reach to $ 41,368M by 2020 says IndustryArc.

Industry is positive that Indian wearable industry which is in infancy at present will get mature over the next five years. "In India, the market is just opening up, and by 2020 we will have 3 or 4 big players in the field of wearable health monitoring," said Dr Murali.

By 2020, wearables would start getting mainstream adoption. "We will see various devices (e.g. smart watches, smart shoes, smart clothing) being adopted by consumers, and various services (e.g. payments, security, personal identification, healthcare diagnostics, etc) will be offered by all major industries," said Mr Singh.
Indian market is lagging by seven years in wearable space as compared to the US. But the main reason for this is the current UTILITY of wearables is minimum on solving burning issues. "It's used more for behavior change, which has high resistance in countries like India. By 2020, as wearables come in mainstream, adoptions will be at a very high pace, similar to mobility," said Mr Naseem.

As with most of the trends wearables growth will dependent on the economy. A lot of which depends on how industries, GDP, and how our economy shapes in this defining moment. "As of now, the wearable tech market is limited to the higher income strata of the Indian market, as compared to a 25 percent adoption rate in the US but the combination of the growing awareness, cheaper production, Costs, flash sales, only point out that this can turn into the next frenzy with a CAGR higher than E-Commerce!" concluded Mr Saraogi.