



Healthcare Market Updates



TMX	15
CHK	
AAPL	+2.35
PRTG	-0.14
AMZN	-0.73
TSLA	+1.08
AVGO	-0.87
SIRI	-0.65

Weekly Newsletter
Issue 17
31st August, 2018

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Wearables

Garmin introduces Vivosmart 4: Slim activity tracker with advanced sleep tracking through pulse oxygen sensor – August 30, 2018 (1/2)

Applicable Product Categories:

Wearable

 Technologies	Wearable (Device + App)	 Therapeutic Areas	Lifestyle and chronic diseases management (sleep disorders)
 Applications	Remote Patient Monitoring; Quantified-Self	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence, New Product Launch
 Companies	Garmin	 Others	NA

ANALYST TAKE:

- **Synopsis:** Garmin International, Inc., a unit of Garmin Ltd. (NASDAQ: GRMN), announced the Vivosmart 4, a slim, smart activity tracker that introduces a wrist-based pulse ox2 sensor. The Vivosmart 4 also introduces a Body Battery™ energy monitor that estimates the body's energy reserves, letting users know the optimal time for activity and rest.
- **Industry Need:** Sleep quality plays a critical role in your overall physical health. Insufficient sleep has major health and safety consequences for all age groups and may contribute to the development of significant chronic conditions. Based on industry estimates, about 100 million people globally suffer from obstructive sleep apnea (OSA), of which about 80% go undiagnosed in the early stage. For example, In America alone 40 million people do not know they have OSA conditions. Proper monitoring by wearable devices can timely diagnose and treat OSA and prevent related chronic health conditions.

Garmin introduces Vivosmart 4: Slim activity tracker with advanced sleep tracking through pulse oxygen sensor – August 30, 2018 (2/2)

- **Value Proposition:** The new Garmin® Vivosmart 4 activity tracker is anticipated to allow customers gauging their blood oxygen saturation levels at night to better understand their sleep quality. The Vivosmart 4 also introduces a Body Battery energy monitor that estimates the body's energy reserves, letting users know the optimal time for activity and rest. In addition to pulse ox, the Vivosmart 4 features Garmin's new advanced sleep monitoring which estimates light, deep and REM stages of sleep, along with movement throughout the night. Upon awakening, users can review their sleep stats in the Garmin Connect™ Mobile app. On the design and easy of use side, the Vivosmart 4 is a slim device and comfortable to wear at night. The above features make the Vivosmart 4 a fully-loaded smart activity tracker against competing products in the current market with a newly redesigned Elevate™ wrist-based heart rate sensor, new abnormal heart rate alerts, with up to 7 days of battery life between charges to enable wearables for activities such as walks, runs, cycling, strength training, pool swims, yoga and others.
- Pricing - The Vivosmart 4 has a suggested retail price of \$129.99.
- Frost & Sullivan finds the new function called 'Body Battery' on Garmin® Vivosmart 4 activity tracker more compelling that goes beyond product to provide a differential value proposition in the already commoditized activity tracking wearable device market. For example, the Body Battery number, calculated by crunching critical vitals such as stress, HRV, sleep and activity will provide evidence-based actionable insights to individuals who are at risk of developing sleep disorder conditions and empower them to practice self-health management. Frost & Sullivan believes, the sleep focused and outcome-based market positioning of Garmin® Vivosmart 4 will make the experience for the user more engaging and may increase the stickiness. However, future success will depend on subsequent clinical evidence to gain medical KOL's accreditation on quality/outcomes, and then finding the optimum marketing trade-off between mass and niche healthcare wearables.
- **Target End-User:** Healthcare consumers, homecare, fitness/wellness, sleep/behavioral health

WEBLINK: <https://bit.ly/2MFpt2Y>

Amazon scoops up top cardiologist in healthcare push – August 28, 2018

Applicable Product Categories:

Wearable

 Technologies	Wearable (Device + App)	 Therapeutic Areas	Lifestyle and chronic diseases management
 Applications	Remote Patient Monitoring; Quantified-Self	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	Amazon	 Others	NA

ANALYST TAKE:

- **Synopsis:** Amazon hires star cardiologist Maulik Majmudar as it broadens its involvement in the health care industry. Majmudar was a founding member and chief clinical officer of Quanttus, a venture-backed medical wearables startup. He was also a lecturer in the Harvard-MIT Health Sciences and Technology program.
- **Value Proposition:** Amazon has been broadening its involvement in healthcare and building up its healthcare group with people knowledgeable about both the medical and regulatory challenges in the space. It is not clear how Amazon will employ Majmudar or whether he will be involved in the three-way venture between Amazon, J.P. Morgan and Berkshire Hathaway or even Amazon's clinic for employees.
- Given the recent development, Frost & Sullivan speculates a possible boon or ban implication for wearable solution providers;
 - Ban - Amazon's decision to hire a cardiologist could point to a greater role in population health management and development of products (white labelling wearable devices) that can monitor chronic conditions like high blood pressure or irregular heartbeats.
 - Boon - It could also point to more investment in the area of employee health.- which would open a possible collaboration opportunity for wearable OEMs to partner on possible employee behavioural health programs for the member pool of Amazon, J.P. Morgan and Berkshire Hathaway.

WEBLINK: <https://bit.ly/2CfSRrZ>



Mobile Phones/ mHealth

New Tech Uses Smartphone Camera to Determine Whether Mosquitoes Carry Disease, Biopesticide – August 30, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	Fluorescence Imaging, Camera	 Therapeutic Areas	Vector Borne Disease Management
 Applications	Nucleic acid diagnostic platform utilizing fluorescence signals through smartphone camera	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Tech Innovation
 Companies	University of Texas	 Others	NA

ANALYST TAKE:

Synopsis: Researchers at University of Texas have come up with a novel diagnostic tool which instantly determines if a mosquito belongs to *Aedes aegypti* species, which carries the infectious diseases such as Zika, dengue, chikungunya and yellow fever.

Industry Need:

- Changing environmental patterns, urbanization and insecticide resistance has led to mosquito borne infectious disease to be a global health problem, no longer limited to tropical regions. As per the researchers, the *Aedes aegypti* species has led to three times increase in such vector borne diseases in the US
- Certain estimates suggest nearly 50% of the global population is at risk of mosquito fuelled diseases and hence, easy-to-use field mosquito surveillance technologies such as this could be extremely useful in identifying high risk areas and taking appropriate preventive measures.

New Tech Uses Smartphone Camera to Determine Whether Mosquitoes Carry Disease, Biopesticide – August 30, 2018 (2/2)

Value Proposition:

- The novel solution uses loop-mediated isothermal amplification (LAMP) and oligonucleotide strand displacement (OSD) probes, which amplify the targeted nucleic acid from the macerated mosquitoes of the *Aedes* species. It also identifies if the mosquitoes have had any contact with the endosymbiotic bacteria – *Wolbachia*, which has been found to limit the pathogen transmission and reduce overall burden of dengue, malaria, etc.
- As per the research, release of *Wolbachia* infected mosquitoes is used as an effective biocontrol measure to limit vector-borne diseases. Correct and timely determination of *Wolbachia* infection in *Aedes* mosquito population is crucial to reduce the burden of mosquito borne diseases, so that the populations without such infection could adequately be dealt with preventive measures. However, current diagnostic methods such as immunoassays offer low specificity and sensitivity and other techniques such as PCR and spectroscopy require heavy instrumentation, thus, limited to centralized laboratories, making it time-consuming and cumbersome to timely identify the high risk mosquito populations.
- The system is being touted as cheap and quick with a 98% specificity and 97% sensitivity in identifying *Ae. aegypti* mosquitoes using a cellphone imaged LAMP-OSD test.
- Frost & Sullivan believes that while the solution is still under development, it has significant growth potential if adequately commercialized with the correct prototype and value proposition. Companies who could look at ways to integrate the test apparatus with their existing solutions, could reach out to the market with innovative commercialization models like a public-private-partnership or a value based contracting with governments or municipal corporations and healthcare authorities across the world where such vector-borne diseases are a major menace.
- **Target End-User:** Governments, municipalities, local health authorities

WEBLINK: <https://bit.ly/2PU0uXF>



Smart Home Devices & Appliances

Naked Labs' body-scanning mirror might be the smartest thing in the CNET Smart Home – August 24, 2018 (1/2)

Applicable Product Categories:

Smart Home Mirrors

 Technologies	Sensors, Cameras	 Therapeutic Areas	NA
 Applications	AI, 3D Scanning	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Tech Innovation, Competitive Intelligence
 Companies	Naked Labs	 Others	-

ANALYST TAKE:

- **Synopsis:** “The Naked Labs Body Scanner is a combination smart mirror and scale that produces frighteningly accurate 3D renderings of your body that you can track and scrutinize on your phone.” At \$1,400, it is a super-expensive product, but one that is promising from a health perspective, when considering smart mirrors in the home!
- Frost & Sullivan acknowledges that no ‘smart mirror’ effort existing today (including Kohler) even attempts to look at personal health (HiMirror looks at skin health, but nothing beyond, and more from a cosmetic perspective). Their focus remains on making touchscreen mirrors that work as displays for weather and other daily information. In that respect, Naked Labs is a pioneer; the potential applications of the technology include personal healthcare, research and personal training, but even clothing. However, widespread adoption will require (a) significantly lower prices, and (b) additional features beyond just health – like the smart display mirrors being currently developed – a consumer cannot be expected to have a smart mirror and one by Naked Labs.

Naked Labs' body-scanning mirror might be the smartest thing in the CNET Smart Home – August 24, 2018

- Within healthcare, these mirrors can be a great value addition for obesity management, and also within chronic disease management.
- Per World Health Organization estimates, obesity has tripled since 1975 – in 2016 1.9+ billion adults were overweight, of which 650 million were obese. With obesity, chronic condition risk factors increase, therefore understanding individual's patterns of obesity and designing custom workouts as well diet plans can help control the condition.
- Chronic disease management efforts also require patients to have healthy workouts, and a great tool to monitor progress can be weight loss, not just actual weight statistics, but metrics provided by the Naked Labs mirror which provides information on body fat proportion and distribution.
- From a research perspective, the data can be useful to better understand correlation between body fat localization and specific disease conditions, and possibly much more.
- In the future, just as smart watches are being used by insurance companies to motivate users to exercise and stay healthy, a model could be designed around providing chronic disease management patients premium discounts based on their progress as measured by technologies such as this mirror (thought this has several unanswered questions around data sharing, privacy and ownership, as well as true ROI for insurance companies).

WEBLINK: <https://cnet.co/2wCciGb>

Satellite TV company Dish teams up with Indepanda for senior care, entertainment – August 29, 2018

Applicable Product Categories:

Smart Televisions

 Technologies	Sensors	 Therapeutic Areas	Senior Care
 Applications	Telehealth / Entertainment	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	Indepanda, Dish	 Others	-

ANALYST TAKE:

- **Synopsis:** The partnership essentially means, “Dish’s voice remote will now be compatible with Indepanda AnyTV Companion.”
- Several seniors still depend on television for entertainment, and is a great tool that seniors are mostly familiar and comfortable with, and may prefer not learning how to operate laptops, smartphones or tablets. Frost & Sullivan agrees with the view taken by Dish and Indepanda – providing solutions that are simpler to operate and use are a must for seniors. Instead of operating multiple remote controls, (one for the Indepanda system, and another for Dish), there’s a single one to use, that can be operated through voice as well. A physical remote is still needed for seniors who are used to it, while voice is as yet an evolving technology. Indepanda’s existing solutions around medication and program schedule reminders, and support to schedule medical appointments are definitely a value add.

WEBLINK: <https://bit.ly/2ooHNyT>