

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 21
28th September 2018

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









Wearables

John Hancock Will Only Sell Interactive Life Insurance with Fitness Data Tracking – September 26, 2018 (2/2)

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	Clinical / Consumer Grade	 Topics (News type)	Business Model Innovation
 Companies	John Hancock Financial	 Others	NA

ANALYST TAKE:

- **Synopsis:** John Hancock, one of the oldest and largest North American life insurers, will stop underwriting traditional life insurance and instead sell only interactive policies that track fitness and health data through wearable devices and smartphones, the company said on Wednesday.
- **Industry Need:** The health insurance policies available today are aged and often fail to meet the personalized needs of individuals. As a result the health insurance industry even across developed markets is expected to see less than 1.5% growth during 2018. To ensure future growth globally a number of insurance companies are already providing data and digital-driven healthcare services to their policyholders to personalize experience and reduce the cost from potential claims. On the other hand, individual health data ownership and monetization are creating bigger ethical and regulatory debates. For example, today there are several wearables and apps collecting user data but not effectively monetizing them. The industry needs consumer-centric insurance programs that incentivize the individual for adhering to healthy habits and lifestyle.

John Hancock Will Only Sell Interactive Life Insurance with Fitness Data Tracking – September 26, 2018 (2/2)









- **Value Proposition:** The move by the 156-year-old insurer, owned by Canada's Manulife Financial Corp., marks a major shift for the company, which unveiled its first interactive life insurance policy in 2015. It is now applying the model across all of its life coverage policies.
- Interactive life insurance, pioneered by John Hancock's partner the Vitality Group, is already well-established in South Africa and Britain and is becoming more widespread in the United States. The company announced to sell this type of policy through its subsidiary [Vitality](#), finalizing in 2019 the conversion of its entire portfolio of policies to the new procedure.
- **How it works?** Policyholders score premium discounts for hitting exercise targets tracked on wearable devices such as a Fitbit or Apple Watch and get gift cards for retail stores and other perks by logging their workouts and healthy food purchases in an app. For example, John Hancock's U.S. life insurance customers can choose from a basic Vitality program in which customers log their activity in an app or website and can receive gift cards for major retailers after reaching their milestones, or an expanded program that offers wearable devices and discounts of up to 15 percent on premiums, among other benefits.
- Frost & Sullivan research suggests, interactive policy continues to gain popularity globally as it enables insurance companies to leverage individual data and then uses it to personalize premiums and discounts/rewards. For example, this week itself, Cardiogram (Health app developer) announced that it has partnered with Amica Life Insurance Company (Amica Life) and Greenhouse Life Insurance Company to offer \$1,000 of free life insurance in exchange for wearables data.
- During 2019, tech-savvy Millennials will overtake the Baby Boomer population. Entailing this, Frost & Sullivan anticipates such interactive policies will continue to gain popularity among employee health programs. Especially among employees who are already active are more likely to be attracted to the option of discounts if they meet predetermined goals. More importantly, with increasing burden of lifestyle driven chronic health conditions concepts such as wearable enabled reward-based preventive care and self-health management are getting popular among health systems and payers. However, till date, there is little evidence if such programs actually work. Frost & Sullivan strongly believes that, in the next 3-5 years, as wearable technology continues to evolve on clinical accuracy and noble healthcare applications, it will generate a radical disruption in existing care delivery / business model, and that disruption will generate winners and losers. For example, John Hancock's insurance unit head, Brooks Tingle mentioned that Vitality policyholders worldwide live 13 to 21 years longer than the rest of the insured population.
- **Target End-User:** Healthcare Consumers, Health systems, and Employee Health Programs

WEBLINK: <https://bit.ly/2OEZPZc>; <https://read.bi/2QaozIU>

Myant announces textile computing collaboration with Mayo Clinic – September 28, 2018 (1/2)

Applicable Product Categories:

Wearable

 Technologies	Wearable (Underwear with sensors) + Machine Learning	 Therapeutic Areas	Cardiovascular Disease (e.g. AiFb, heart-rate, stress, and sleep stages)
 Applications	Remote Patient Monitoring	 Geographic Focus	Global
 Segment Focus	Clinical / Consumer Grade	 Topics (News type)	Business Model Innovation
 Companies	John Hancock Financial	 Others	NA

ANALYST TAKE:

- **Synopsis:** Canadian technology firm Myant has formed a strategic partnership with American non-profit medical centre Mayo Clinic and will subsequently license the institute's patented algorithms for heart monitoring and arrhythmia detection for its soon-to-be-launched SKIIN Textile Computing platform.
- **Industry Need:** As per WHO estimates, 7.3 million people die of cardiovascular diseases (CVD), particularly heart attacks and strokes every year globally. For example, heart disease has been the biggest killer in America since 1920 and involves spending of more than \$110 billion/year. However, among all the deaths caused by CVD, about two-thirds of them happen in out-of-hospital settings. This demands robust remote monitoring solutions such as wearables to promote preventive care practices. For example, as per a Mayo Clinic study (2015), digital health intervention among early-stage CVD population can reduce 40% relative risk and 7.5% absolute risk reduction in CVD events, hospitalizations, and deaths. This in turn is driving the demand for digital remote patient monitoring ECG solutions that seamlessly integrate with today's life.

Oculus, VRHealth partner to develop VR pain management, anxiety management therapies – September 28, 2018 (2/2)









- **Value Proposition:** The agreement gives Myant an exclusive licence to Mayo Clinic's proprietary heart monitoring and arrhythmia detection technology for use in smart clothing projects. Myant's SKIIN smart underwear will be released in early 2019, pending FDA clearance and Health Canada approval. Any financial interest gained by Mayo Clinic through the sale of Myant's SKIIN underwear will be used to support its work as a non-profit, funding education and research, as well as patient care.
- **How it will work?** The underwear integrates sensors around the waistband which monitor electrical impulses produced by the cardiovascular system. The company claims that these impulses contain a significant amount of critical information about one's health, physical state, and mental state. SKIIN uses these sensors along with machine learning to understand and analyze metrics like heart-rate, stress levels and sleep stages.
- The collaboration with Mayo Clinic aims to provide an additional layer of intelligence to the software. This primarily will yield accurate data relating to a wearer's heart rate, which could allow for the early detection of Atrial Fibrillation (AFib), a condition which may otherwise go unnoticed.
- Given easy of use and seamlessness being most desired consumer feature from next-generation wearables, Frost & Sullivan finds the textile computing (underwear as a wearable and Machine learning intelligence) concept for monitoring critical health conditions such as cardiac ones intriguing. Considering consumers' poor stickiness for majority of wrist wearables in the current market, Frost & Sullivan believe Myant's SKIIN smart underwear will be more natural choice for average consumer with possible cardiac health conditions. Additionally, Frost & Sullivan finds Myant's collaboration with Mayo Clinic on arrhythmia detection technology a big milestone for the company as it anticipates FDA approval.
- Having said that, Frost & Sullivan also recognizes the cardiac monitoring wearable space as already being crowded with leading clinical-grade devices, the future destine for Myant's SKIIN smart underwear heavily depends on FDA approval or similar clinical validation studies to justify its clinical efficacy.
- **Target End-User:** Healthcare Consumers, Health systems, and Employee Health Programs

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

Oculus, VRHealth partner to develop VR pain management, anxiety management therapies – September 27, 2018 (1/2)

Applicable Product Categories:

Wearable

 Technologies	Wearable (VR headset) Machine Learning	 Therapeutic Areas	Pain Management, Anxiety
 Applications	Remote Patient Monitoring	 Geographic Focus	Global
 Segment Focus	Clinical/Consumer Grade	 Topics (News type)	Business Model Innovation
 Companies	Oculus, VRHealth	 Others	NA

ANALYST TAKE:

- **Synopsis:** VRHealth has partnered with Oculus on a range of healthcare-focused virtual reality applications to be delivered via the latter's hardware. These will be built for the full-size Oculus Rift headset, as well as the company's scaled down and portable Oculus Go device.
- **Industry Need:** About 100 million Americans suffer from chronic pain; with annual healthcare cost of \$261–\$300 billion. The global pain industry pulls in more than \$50 billion in drugs per year with limited proven outcomes. Considering that people living with chronic knee pain do not receive adequate care, innovative wearable and VR based digital therapies with proven outcomes could empower patients to effectively treat chronic pain at the comfort of their home.

Oculus, VRHealth partner to develop VR pain management, anxiety management therapies – September 27, 2018 (2/2)

- **Value Proposition:** Backed by Facebook, Oculus is one of the clear leaders in consumer-grade VR devices. As such, partnering with the established hardware maker and software publisher gives VRHealth a substantial platform for its healthcare-targeted offerings. VR-based distraction therapies are certainly not commonplace, but they do have [published evidence of efficacy](#) across certain patient groups. Yesterday's deal could play a role in their wider adoption.
- VRHealth has deployed its products to a number of hospitals and sports medicine centers, and previously partnered with AARP on an application that allows seniors to receive therapist-guided physical therapy without needing to leave their home. The company claims that, virtual reality has the power to ease the pain of chemotherapy treatment, create a seamless environment for physical therapy exercises, and train children with ADHD to focus their attention. VRHealth CEO, Eran Orr, believes that by applying the effects of VR, the healthcare industry has the potential to improve many lives and aid doctors in providing personalized and comfortable experiences for their patients.
- Frost & Sullivan views the Oculus and VRHealth collaboration as a win-win for the industry to further drive best of breed technology convergence for targeted healthcare applications. Given current treatment limitations and opioid crisis related to pain killer drugs, such digital therapies are anticipated meet some of the critical industry needs. Unlike other industries, application focus and market position are considered more critical for success beyond the technology novelty in healthcare. The two VR companies are planning pain management offerings designed for mothers experiencing pain in labor and for cancer patients undergoing chemotherapy, as well as another for general anxiety management before and after surgeries, according to an announcement.
- **Target End-User:** Healthcare Consumers, Health systems, and Employee Health Programs

WEBLINK: <https://bit.ly/2N6EGFz>











Mobile Phones/ mHealth

Autonomous AI diagnostic startup IDx scores \$33M – September 27, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	mHealth Platform, AI	 Therapeutic Areas	Diabetic Retinopathy; Other Age related eye conditions
 Applications	AI based autonomous diagnostics platform	 Geographic Focus	Global
 Segment Focus	Clinical Grade	 Topics (News type)	Care Delivery Innovation
 Companies	IDx	 Others	8VC, Optum Ventures, Alpha Edison, Heritage Provider Network

ANALYST TAKE:

Synopsis: IDx, the AI based diagnostic platform provider, which, in April 2018, received De Novo clearance for its autonomous (able to diagnose without clinician assistance/ advise) diagnostics tool, IDx-DR for diabetic retinopathy, has received additional funding of \$33 million led by 8VC with participation from Alpha Edison, Optum Ventures, and Heritage Provider Network.

Industry Need:

- AI driven diagnostics and clinical decision support platforms are fast emerging as an effective enabler of health outcomes with a number of systems aimed at early diagnosis of a medical condition getting financing and FDA nods this year. Other recent examples include Viz.ai, Zebra Medical Vision, and Proscia.
- Recent Frost & Sullivan analysis, [Artificial Intelligence Market—Key Application Areas for Growth in Healthcare IT, Forecast to 2022](#) has revealed that growth opportunities around clinical grade AI applications that promise to help end-users optimize patient outcomes with evidence-based decision support will be accelerated, as majority of global patient population suffer from one or more chronic conditions and contribute trillions of US dollars to global GDP.

Autonomous AI diagnostic startup IDx scores \$33M – September 27, 2018 (2/2)

Value Proposition:









- IDx plans to utilize the funding to further develop additional diagnostics systems and to commercialize its recently approved diabetic retinopathy platform IDx-DR.
- The company's key focus is to augment its core platform on which it could add additional diagnostics functionalities as and when they're approved. The next two AI algorithms which will use the company's platform will be around age-related macular degeneration and glaucoma.
- Frost & Sullivan believes that AI-powered health solutions primarily allow healthcare enterprises to predict, automate, and prescribe evidence-based care decisions. However, AI-powered health solutions from technology maturity and real-world applicability standpoint are still in their infancy. This is expected to change in the near term as democratization of AI is made possible by big IT companies who are offering cost effective cloud infrastructure support to modular and specialty specific vendors, striving to help end-users, mainly hospitals, to embrace precision diagnosis and treatment. That being said, pricing for AI solutions remain critical as end-users are often not convinced to dedicate additional budget for such IT capabilities. A cost effective approach with clear evidence for potential ROI for both parties will help sustain the future market growth.
- **Target End-User:** Hospitals; Clinical Laboratories; Primary Care Centers

WEBLINK: <https://bit.ly/2QfE02O>

Aiming To Revolutionize Medical Ultrasound, Butterfly Raises \$250 Million At A \$1.25 Billion Valuation — September 27, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	Smartphone; Ultrasound-on-a-chip	 Therapeutic Areas	Diagnostic Imaging
 Applications	Ultrasound-on-a-chip technology enables portable scans with smartphones	 Geographic Focus	US
 Segment Focus	Clinical Grade	 Topics (News type)	Care Delivery Innovation
 Companies	Butterfly Health Network	 Others	Investors – Fidelity; Fosun Pharma; Bill & Melinda Gates Foundation; Jamie Dinan

ANALYST TAKE:

Synopsis: Butterfly Health Network has secured additional \$250 million in new funding round for commercialization of its handheld, smartphone or tablet-connected full-body ultrasound device, Butterfly IQ.

Industry Need:

- Ultrasound is a multifaceted scanning technology capable of being used across a variety of disease areas. However, high costs, technological complexities and lack of portability are crucial factors limiting the future growth potential. Additionally, ultrasound imaging depends heavily on the user's skills, limiting usage to skilled professionals.
- In line with this, various portable ultrasound scanning systems have been developed over the past few years including the Philips Lumify, Clarius Mobile Health, GE and Mobisante which take care of the access and affordability part of the puzzle.

Aiming To Revolutionize Medical Ultrasound, Butterfly Raises \$250 Million At A \$1.25 Billion Valuation — September 27, 2018 (2/2)

Value Proposition:

- Butterfly health's handheld ultrasound system, Butterfly IQ, which received FDA clearance in October 2017, is being priced at around \$1,999, the lowest when compared to some other portable systems available in the market which range between \$5,000 to \$10,000. Traditional ultrasound machines, on the other hand, cost anywhere between \$50,000 to \$100,000.
- The company charges an additional monthly fee for a software which refines the ultrasound images and offers seamless integration with the cloud. The monthly fees are pegged at around \$35 for individuals and \$100 for groups.
- The company uses an easy-to-manufacture semiconductor chip rather than the piezoelectric crystals used by traditional ultrasounds which enables the low price. Additionally, the chip based technology enables a single probe to produce all three — linear, curved, and phased — ultrasonic wave patterns, thereby further lowering its costs.
- Frost & Sullivan analysis finds that Butterfly's portable ultrasound system is among the very few startups (except the big names such as GE and Philips) in this space to have successfully raised a funding in excess of \$250 million at one go. This reflects investor confidence in the chip based technology owing to its definitive cost advantage. While the system has been pre-booked in high quantities, it will be interesting to see how the company offers seamless connectivity over its integrated software platform so as to offer true advantages of a portable system enabling early disease detection and remote diagnosis.
- **Target End-User:** Hospitals; Laboratories; GP Clinics

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









Smart Home Devices & Appliances

E.ON partners with Microsoft to offer smart home service – September 25, 2018

Applicable Product Categories:

Smart Home Appliances

 Technologies	IoT, Sensors, Appliances	 Therapeutic Areas	NA
 Applications	Smart Energy Monitoring	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	E.ON, Microsoft	 Others	-









ANALYST TAKE:

- **Synopsis:** The US software giant will provide cloud technology to German utility E.ON to manage energy usage throughout homes.
- The energy market for smart homes is slightly more advanced and this model serves as an example for healthcare delivery as well. Collecting insights from the sensors, wearables, health monitoring devices and other sources of information, and having the data sent over the cloud to be processed and to generate insights, which will then be presented to either the residents themselves, their caregivers and doctors, or all of them. But this being healthcare, challenges and regulations around patient privacy need to be considered when developing such models. Microsoft's Azure cloud and IoT service lines already serve many healthcare companies' needs, and makes them well versed with the needs of this complex industry.

WEBLINK: <https://bit.ly/2xg0RTQ>

Amazon Releases 10 New Alexa-Enabled Devices for Your Home and Car – September 23, 2018

Applicable Product Categories: Smart Home Devices and Appliances

 Technologies	IoT, Sensors, Appliances	 Therapeutic Areas	NA
 Applications	Smart Appliances	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	Amazon	 Others	-

ANALYST TAKE:









- **Synopsis:** As covered in the previous issue, Amazon releases 10 new products – the 3rd Gen Echo Dot, Echo Auto (car), Echo Show (tablet), Echo Plus (light bulb), Fire TV Recast, Amazon Basics Microwave, Ring (security camera), Echo Sub bundle, Echo Link (music), Amazon Smart Plug.
- Frost & Sullivan believes the smart plug may be an interesting product – allowing dumb appliances or electronic devices to be made ‘connected’ (not smart), allowing remote control through Alexa. This product is in line with those offered by 3rings, Evermind, etc. and can have impact in the smart home for aging-in-place / senior care market –for example, remotely monitoring that the elders switched on the coffee machine in the morning lets loved ones know that they are OK – this is not a functionality offered / positioned by Amazon (yet), but by the others do. The other products don’t necessarily have a direct healthcare impact, but from a portfolio perspective are bold moves to begin to cover the entire gamut of interfaces, locations and markets – voice and touch screen (either preferred depending on usage scenario), music and TV (entertainment), home or auto (location) and appliances control.

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

Wondrwall Launches Affordable Intelligent Smart Home Concept – September 20, 2018

Applicable Product Categories:

Smart Home Appliances

 Technologies	IoT, Sensors, Appliances	 Therapeutic Areas	NA
 Applications	AI	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Business Model
 Companies	Wondrwall	 Others	-

ANALYST TAKE:









- **Synopsis:** “Aimed at electricians, smart home installers and the developer market, Wondrwall says its easy to fit system is the world’s first learning smart home modular system.” Using AI, machine learning technologies, the system adapts to the residents’ habits and preferences.
- Frost & Sullivan acknowledges this as the very approach we advocate for truly ‘smart’ home systems (vs. connected ones). Wondrwall achieves two main objectives – installation support for over 100 sensors (Zigbee, independent of WiFi) and smart switches (with WiFi support) which is a noted challenge in this developing market. And the second, enabling the home to be truly smart, or even intelligent, to adapt to user preferences. This approach can have significant applications in the aging-in-place market, and also to monitor their wellbeing: any deviation from routine can signal a fall or adverse event in the short term, or developing health conditions in the long term (number of bathroom visits each night decreasing / increasing, for instance, may warrant a health checkup).

WEBLINK: <https://bit.ly/2QdXzs5>

Hippo Insurance Services Provides New Customers with Notion Smart Home Sensors to Prevent Disasters and Save on Insurance Policies – September 20, 2018

Applicable Product Categories:

Smart Home Appliances

 Technologies	IoT, Sensors, Appliances	 Therapeutic Areas	NA
 Applications	AI, Insurance	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Business Model, Reimbursement / Insurance
 Companies	Hippo Insurance, Notion	 Others	-

ANALYST TAKE:

- **Synopsis:** “By installing and utilizing the complimentary Notion kit, Hippo customers will also receive a Smart Home discount on their home insurance policy, helping reduce their premium.” This is in line with some trends noted in the wearables section of this issue, or health insurance policies.
- This is not necessarily the first type of risk-reducing initiative by a property and casualty insurance firm –AXA France had provided similar discounts and rebates, and even a renting model for smart home security products. Frost & Sullivan has viewed this as a replicable model for health insurance, whereby residents monitoring their own health and being ‘in-charge’ of managing it better helps them stay healthier and reduces insurers’ claims costs. UnitedHealth Insurance, Aetna, John Hancock (as also Discovery Group in South Africa and Generali in Europe) are testing variations of this concept, and even some life insurance companies are following suit: also leveraging the data they collect on patient health, with their consent and promise not to increase premiums. We believe the insurance companies are even slower than healthcare to adopt technology, but this is the right way forward to reimbursements to trickle in for smart health products.

WEBLINK: <https://prn.to/2Q9k7tW>

Other Interesting Articles

When available, other interesting articles will be covered here in short.

News Title	Link	Remarks
New Amazon Store Promises 4 Stars or Better for Every Product Sold	https://for.tn/2xJoRzL	With another physical store in New York, Amazon promises to sell even smart home appliances with added benefits for Prime members. With this, it is opening up another sales channel to reach customers especially for them to 'touch and feel' products before they buy.
Amazon Alexa outage: Voice-activated devices are down in UK and beyond	https://bit.ly/2QZOSTH	Design Takeaway: What should a user do when internet connectivity is lost / servers are down – how can they make an alarm stop if Alexa won't respond?
The Smart Home IoT Market is Looking to Make an Impact Well Beyond Convenience	https://bit.ly/2QbWLUH	Besides Google, Amazon, even Ikea has entered the smart home energy market.
Alibaba Announces Smart Mobility Initiatives with Partners	https://bit.ly/2zBj9RT	After Amazon (Issue 20), and Subaru (Issue 16), Alibaba now links cars and homes, the smart way.
Alexa-powered Amazon houses may be closer than you think	https://bit.ly/2R5nYJS	Amazon's Alexa Fund invested in "Home design and prefabrication company Plant Prefab": another route to reach mass markets (apart from tying up with home builders).
Lockbox for fridge keeps medication and alcohol away from kids, wins hackathon	https://bit.ly/2OcUM5d	GE-sponsored hackathon has some great innovation ideas for smart home appliances.