

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 15
17th August, 2018

Table of Contents

Category/ News Heading	Page No.
Wearables	<u>3-9</u>
It sure looks like Apple is building custom chips to process healthcare data	<u>4</u>
Google rumored to be working on a health assistant for smartwatches called Coach	<u>6</u>
VitalConnect Launches VistaTablet to Further Focus on Growing At-Home Patient Monitoring Space	<u>8</u>
Mobile Phones/ mHealth	<u>10-14</u>
Adherium launches over-the-counter digital asthma inhaler add-on and app in the U.S.	<u>11</u>
Medtronic diabetes patient engagement program to offer game-based blood sugar tracking with rewards	<u>13</u>
Smart Home Devices & Appliances	<u>15-20</u>
Can smart displays replace smart speakers?	<u>16</u>
Best Buy acquires aging in place tech company GreatCall for \$800M	<u>17</u>
A year later, the team-up between Microsoft and Amazon finally comes to life	<u>18</u>
New Software Makes Smart Homes Even Smarter	<u>19</u>











Wearables

It sure looks like Apple is building custom chips to process healthcare data — August 14, 2018 (1/2)

Applicable Product Categories:

Wearables

 Technologies	Wearables (Device/Chip)	 Therapeutic Areas	Chronic Health Conditions (diabetes; heart rate)
 Applications	Remote Patient Monitoring; Quantified Self	 Geographic Focus	US / Global
 Segment Focus	Consumer/Clinical Grade	 Topics (News type)	Tech Innovation / Competitive Intelligence
 Companies	Apple	 Others	NA

ANALYST TAKE:

- **Synopsis:** As per a recent report from CNBC, Apple wants to build its own custom processor chips that could better understand health information collected from sensors to ultimately prolong battery life and enhance the performance of its products. The news is further validated, referring to a July 10 job posting for Apple's Health Sensing hardware team, which indicates the iPhone maker is looking for sensor ASIC (application-specific integrated circuit) architects to help develop ASICs for new sensors and sensing systems for future Apple products.
- **Industry Need:** Despite the possibility of wearables for monitoring individuals health, a majority of current wearables fall under consumer-grade wearables and are often deemed unreliable by healthcare professionals (against industry gold standards) for meaningful capture of desired health data. Lack of on-going innovation at the chip-level has limited the design and energy efficiency features around health wearables. This also inhibits much-desired attributes such as accuracy for wearable health monitors, seamlessness and battery life - hindering the progress into broader applications for healthcare use cases.

It sure looks like Apple is building custom chips to process healthcare data —

August 14, 2018 (2/2)









- **Value Proposition:** Historically, Apple has relied on third party chip-makers to design and supply components for its chips. By developing its own chips, Apple would be able to protect its intellectual property from other health developers looking to build new sensors. However, as Apple's spokespersons declined to comment on this news, it's not clear what the sensors would measure, but several job listings posted between June and August 2018, suggest it could be information from body vitals (leading to Apple's smartwatch application). One of the listings noted that the team wants to bring on an engineer who can "help develop health, wellness and fitness sensors," while another said the team was looking to keep working with optical sensors, which the Apple Watch uses to measure heart rate.
- Given the fact that, Apple already has a sizeable in-house chip design expertise and its sway with manufacturers - Frost & Sullivan views this as a strong competitive move to create the next-generation of health wearable smart-chips (IoMT Platform) that are energy efficient, more reliable and patient-centric. Furthermore, in the past few years the company has confirmed its continued commitment to position the Apple Watch as a quasi-medical device and differentiate from other competing consumer-grade smartwatch companies. Frost & Sullivan also anticipates that the custom chip strategy can be the means for Apple to realize its long-term commitment (with on-going research efforts) for building non-invasive blood glucose monitor for diabetic patients.
- Competitive Analysis – During May 2018, Qualcomm, one of the leading chip makers for wearable devices, was also reported to be working on a new processor platform for wearable devices. The company plans to replace its aging Snapdragon 2100 chip (that powers the majority of smartwatches today) with a new version called the Qualcomm 3100 by the end of 2018. Considering the on-going innovation spur around the wearable chip layer technology Frost & Sullivan predicts 2019 will be a milestone year for commercializing next-gen smartwatches, smart-glasses, and hearables among others with superior features and profound functionality for meaningful clinical applications. If companies such as Qualcomm and Apple manage to walk the talk on their promises, it will create a serious concern for competing chip makers in the wearable space.
- **Target End-User:** Healthcare consumers / patients, clinicians, hospital networks

WEBLINK: <https://bit.ly/2nKHNC0>

Google rumored to be working on a health assistant for smartwatches called Coach — August 17, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	Wearable (Device + App)	 Therapeutic Areas	Lifestyle and Chronic Health Conditions; Wellbeing and Fitness
 Applications	Remote Patient Monitoring; Quantified Self; Fitness and Health Coaching	 Geographic Focus	US / Global
 Segment Focus	Consumer / Clinical Grade	 Topics (News type)	Tech Innovation / Competitive Intelligence
 Companies	Google	 Others	NA

ANALYST TAKE:

- **Synopsis:** With the Pixel Watch closer to release, a new report has revealed that Google might be working on a health and fitness assistant for wearables called Google Coach.
- **Industry Need:** Increasing prevalence of lifestyle driven chronic health conditions across the globe makes concepts such as self-health management and preventive care a dominant concept to curtail surging healthcare costs. This trend places wearables in a sweet spot to track healthy behaviours and individual's well-being, empowering patients and care providers to continuously track critical health vitals. Additionally, as care delivery focus shifts from high-acuity to low-acuity settings (such as home care / telehealth) wearables-enabled solutions provide compelling patient-centric business models to monetize future opportunities.

Google rumored to be working on a health assistant for smartwatches called Coach — August 17, 2018 (2/2)









- **Value Proposition:** While the Google Assistant is getting better and moving beyond smartphones, Google is now reportedly in plans to expand its digital assistant to smartwatches targeting the wellness and fitness space. As per a Android Police's report, the company is working on a wearable health and fitness coach called "Google Coach" - Internally referred to as 'Project Wooden' and is touted to be an app for Wear OS, the operating system that powers Google Smartwatches and will expand the devices' existing monitoring capabilities to also include data-driven notifications and suggestions about diet, activity, hydration, and more.
- More importantly based on related media it is speculated that the upcoming Google Coach, is likely to bring a bunch of artificial intelligence (AI) applications to wearables running Google's Wear OS to offer some health- and fitness-focused features through Google Coach. For example, the Google Coach could help an average consumer to log his / her gym activities and receive future suggestions based on workout routines. Apart from tracking activities, it is said that Google Coach will help individuals to monitor their nutrition and recommend food accordingly through the new assistant. Google Coach could also provide with a weekly meal plan and shopping list through an email that can be used to stay fit. Likewise, it is reported that the digital assistant could access one's calendar data to see how many meals are required to be planned. Furthermore, Google is reportedly building conversational notifications to address notification overloads by serving a number of wellbeing features through the Coach assistant. There might be a single notification to incorporate your daily steps, water intake, and medication.
- The initial rollout of Google Coach could be limited to Wear OS, though features will work with phones. Eventually, the Coach assistant could reach other connected devices based on Google's platforms, including Android TV and Google Home.
- Frost & Sullivan views this as a continued commitment for Google to claim its share in the growing digital health and fitness space – a natural capability extension of its Google Assistant features in the healthcare arena. Having said that, Google isn't alone in enhancing Wear OS and companies such as Qualcomm are set to support the platform for its future against Apple's watchOS, some hardware-based features may also come with the rumored digital assistant. Given all the speculation and rumours, its unclear when Google will formally launch the Coach assistant. However, one thing is clear that the entry of Google in the Wearable fitness space will further intensify competition for current dominate players such as Apple, Fitbit, and Samsung among others.
- **Target End-User:** Healthcare consumers / Patients, clinicians, hospital networks

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

VitalConnect Launches VistaTablet to Further Focus on Growing At-Home Patient Monitoring Space — August 15, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	Wearable (Device + App)	 Therapeutic Areas	Chronic Health Conditions; multi-parameter vital signs remote monitoring
 Applications	Remote Patient Monitoring; Homecare; Quantified Self	 Geographic Focus	US / Global
 Segment Focus	Clinical Grade	 Topics (News type)	Tech Innovation / Competitive Intelligence
 Companies	VitalConnect	 Others	NA

ANALYST TAKE:

- **Synopsis:** VitalConnect, Inc., a leader in medical-grade multi-parameter wearable biosensor technology for wireless monitoring, today announced the launch of VistaTablet, which ushers in the next-generation of its Vista Solution platform for real-time patient monitoring.
- **Industry Need:** In the last few decades, modernization-driven lifestyle changes have created significant implications for physical and social wellbeing. Today people are living longer with poor health conditions at the cost of high medical care. These lifestyle driven chronic health conditions are creating serious concerns for government and health authorities globally. This creates a critical need for reliable wearables (vital monitors) and digital health solutions to enable home hospital programs as an affordable solution to healthcare that works for providers and patients.

VitalConnect Launches VistaTablet to Further Focus on Growing At-Home Patient Monitoring Space — August 15, 2018 (2/2)

- **Value Proposition:** VitalConnect is the leading digital health patient monitoring company with U.S. FDA clearance for both hospital and in-home solutions. The company has gained a lot recognition in the healthcare industry for its VitalPatch biosensor which is one of the smallest and lightest FDA-cleared Class 2 medical device that measures eight vital signs in real-time. As per company's press release, the mobile interface of the new VistaTablet will offer healthcare providers and patients unprecedented access to vital sign data continuously acquired by the VitalPatch wearable biosensor regardless of patient location.
- The VistaTablet is a handheld mobile relay device that securely hosts and transmits the vital signs measured by the VitalPatch biosensor, presenting this data locally for the patient and to healthcare providers through the Vista Solution platform. The mobility of the VistaTablet supports timely remote analysis by caregivers for patients regardless if they are in the hospital or at home. The Vista Solution platform allows physiological data for all patients to be easily accessible through the accompanying cloud-based application or viewed directly on the VistaTablet.
- Frost & Sullivan views the launch of the VistaTablet device as a natural extension of VitalConnect's Vista Solution platform, enhancing capabilities beyond hospital walls and into growing home hospital programs and telehealth market applications. The combination of VistaTablet and the VitalPatch biosensor offer the company a unique competitive edge for providing a comfortable, medical-grade monitoring solution to enhance patient care compared to other competing solutions in the market.
- **Target End-User:** Homecare, Telehealth, Behavioral Health, Rehabilitation Programs, Clinical Trials, Employee Health Programs

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











Mobile Phones/ mHealth

Adherium launches over-the-counter digital asthma inhaler add-on and app in the U.S. — August 13, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	mHealth, sensors, TeleHealth	 Therapeutic Areas	Respiratory Disease
 Applications	Digital inhaler and app for asthma and COPD medication adherence	 Geographic Focus	US
 Segment Focus	Clinical Grade	 Topics (News type)	Care Delivery Innovation; Tech Innovation
 Companies	Adherium; Vitalus Health	 Others	AstraZeneca, Teva, GlaxoSmithKline

ANALYST TAKE:

- **Synopsis:** Adherium officially launched its digital inhaler add-on in the U.S., following the March 2018 510(k) clearance for over-the-counter (OTC) sales of the devices directly to consumers.
- **Industry Need:**
 - Amidst a growing focus on effective population health management through disease prevention, diagnosis and monitoring, there has been an uptick in investment in patient centric technologies enabling early screening, continuous disease monitoring and medication management, across the high acuity therapeutic areas such as cardiac, diabetes, orthopedic and respiratory.
 - Adherium joins the list of innovative start-ups disrupting the respiratory disease management workflow through effective dosage management and ensuring medication adherence through enhanced patient engagement and monitoring.

Adherium launches over-the-counter digital asthma inhaler add-on and app in the U.S. — August 13, 2018 (2/2)

- **Value Proposition:**









- The Adherium platform, named Hailie, consists of an attachable sensor with a smartphone app to assist asthma and COPD patients track inhaler use and provide medication reminders.
 - The FDA, in September 2017, had granted a clearance for the sensor's use with AstraZeneca's Symbicort aerosol inhalers. Over the counter sales were granted a separate clearance in March 2018 and in July, the FDA cleared the sensor for use with Teva's ProAir and GlaxoSmithKline's Ventolin and Flovent asthma inhalers.
 - Designed to improve medication adherence, Adherium's device attaches to a patient's inhaler and tracks the date and time that it is used. It then transmits this data to an app on a smartphone or tablet. Physicians can look at a patient's usage trends to tailor his or her treatment plan.
- Frost & Sullivan views this development as additional evidence of the ongoing convergence of the different healthcare segments such as medical device, pharma and digital health to achieve the goals of value based care and outcomes based reimbursements. The latest technological upheaval of smart sensor based devices to monitor disease will eventually become ubiquitous home based solutions geared at preventing hospital readmission through effective post discharge drug and interventional adherence.
- **Target End-User:** Patients, clinicians, hospital networks

WEBLINK: <https://bit.ly/2weBdi2>

Medtronic diabetes patient engagement program to offer game-based blood sugar tracking with rewards — August 13, 2018 (1/2)

Applicable Product Categories:

Mobile Phones

 Technologies	mHealth apps, Healthcare gamification	 Therapeutic Areas	Diabetes
 Applications	Patient engagement through gamification	 Geographic Focus	Global
 Segment Focus	Clinical Grade	 Topics (News type)	Care Delivery Innovation
 Companies	Medtronic	 Others	NA

ANALYST TAKE:

- **Synopsis:** Medtronic launched a new patient engagement program that aims to use game-design elements to encourage people with diabetes better track their blood glucose levels for improved health outcomes.
- **Industry Need:**
 - With the rise of eHealth and mHealth, the healthcare industry has been developing mobile applications and telemedicine to bridge the gap between patients and care givers. However, these technologies have been found to lack the capability of bringing about a behavioral change in patients.
 - Gamification techniques have been found to have a major impact in bringing about this fundamental change in behavioural aspects. Healthcare games are capable of engaging and motivating patients through the disease treatment. It also promotes health lifestyle and preventative care.
 - Game mechanics, such as competitions, leader boards, quizzes, challenges, and game points interest the patients, and engage them by providing users short-term or immediate value in the form of rewards or points.

Medtronic diabetes patient engagement program to offer game-based blood sugar tracking with rewards — August 13, 2018 (2/2)

- **Value Proposition:**

- Medtronic's Inner Circle program focuses on helping patients spend more time in an optimal glycemic range of 70-180 mg/dL, by providing personalized challenges and achievements. It also includes a public forum for tracking progress and sharing management strategies.
- This is part of Medtronic's patient engagement strategy for users of its diabetes management products such as MiniMed 670G insulin pumps or Guardian Connect CGMs.

- Frost & Sullivan research finds that stakeholders across the healthcare ecosystem such as pharma and medical device companies, and non-profit research organizations are partnering with mobile game companies to incorporate gamification in to its ecosystem. In future, gamification approaches can be used by insurers and reimbursement companies for assessing and measuring overall customer wellness. Virtual reality (VR) and augmented reality (AR) in particular, are emerging technologies that can energize gamification of healthcare. For further success in the industry, these healthcare games should be capable of easily being integrated into healthcare services. They should also be regulated by the region specific medical data security and patient privacy protection regulations to avoid data theft.

- **Target End-User:** Patients, pre-diabetics

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










Smart Home Devices & Appliances

Can smart displays replace smart speakers?

– August 16, 2018

Applicable Product Categories:

Smart Speakers and Appliances

 Technologies	Smart Speakers	 Therapeutic Areas	NA
 Applications	AI	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Tech Innovation, Strategy
 Companies	NA	 Others	-

ANALYST TAKE:

- **Synopsis:** A new trend of the smart display is emerging – screen + speaker.
- Frost & Sullivan believes that in the long term, an average smart home will feature a smart display device, as well as smart speakers – possibly enabled by a single voice assistant (either developed by one a single entity such as Google, or with partnerships such as Microsoft + Amazon), as the goal will be customer convenience. However, in the short term smart appliance manufacturers such as LG and Samsung are already integrating their digital assistants in their products, while adoption of smart speakers is high owing to lower prices. A gradual integration / partnerships between the two would be the way forward – having multiple virtual assistants in a single smart home may become frustrating in the long run, although some homes feature an Alexa as well as Google Home today, to bypass challenges posed by each system.

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

Best Buy acquires aging in place tech company GreatCall for \$800M – August 15, 2018

Applicable Product Categories:

Smart Home Devices

 Technologies	PERS, Senior Safety Solutions	 Therapeutic Areas	NA
 Applications	AI, IoT	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	Best Buy, GreatCall	 Others	-

ANALYST TAKE:









- **Synopsis:** Best Buy paid \$800 M to private equity firm GTCR which previously acquired GreatCall, an older player in the aging-in-place market in the US.
- Frost & Sullivan believes that Best Buy was looking at better serving the growing elderly population for a while – last year it targeted this market with smart home product installation services for caretakers of the elderly, and in late May, it announced the health monitoring service (Assured Living, covered in Issue 4). This acquisition cements its commitment and position to target the aging-in-place market. Neither is this the last move by Best Buy for this market, nor is it the only tech company targeting the space. We should expect more such announcements before the end of this year – however a crucial question remains to be answered: who pays for these products and associated services? In this case, so far, it has been the consumer (caretakers, children or the seniors themselves), but that limits the growth potential of this market. If evidence can be brought to light, that these services actually reduce healthcare costs, health insurers may reimburse / offset some costs of these solutions, but that will definitely not be in the short term.

WEBLINK: <https://bit.ly/2OHI9M4>

A year later, the team-up between Microsoft and Amazon finally comes to life – August 15, 2018

Applicable Product Categories:

Smart Speaker

 Technologies	Smart Speakers	 Therapeutic Areas	NA
 Applications	AI	 Geographic Focus	Global
 Segment Focus	Consumer Grade	 Topics (News type)	Competitive Intelligence
 Companies	Amazon, Microsoft	 Others	-

ANALYST TAKE:









- **Synopsis:** Integration between Cortana and Alexa finally seeing light of day, after a year since first announcement.
- Frost & Sullivan believes the integration with a stronger player such as Amazon (for its advanced AI, and a larger ecosystem of partnerships) is beneficial for Cortana, which is mostly limited to Microsoft's computer systems, thus providing a larger audience. Increasing the reach of smart devices that can be controlled using voice interaction, not limited by partnerships it itself has, i.e., leveraging Amazon's partnerships, is actually helpful for Cortana (and also for Alexa). This allows users to have one more control point (you may be working on your laptop and don't have to be near the Echo device, for example).
- This partnership is line with the two companies' strategies: "Alexa everywhere" (better compete against Google), and newer audience for Cortana.
- A partnership between two rivals signals the times of change – collaborations and partnerships are key to success, even if with a rival, and this is especially true in the healthcare sector today.

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

New Software Makes Smart Homes Even Smarter – August 13, 2018 (1/2)

Applicable Product Categories:

Smart Home Appliances

 Technologies	Smart Home Devices	 Therapeutic Areas	NA
 Applications	IoT, AI, Analytics	 Geographic Focus	US
 Segment Focus	Consumer Grade	 Topics (News type)	Technology Innovation
 Companies	U.S. Department of Energy's (DOE's) National Renewable Energy Laboratory (NREL)	 Others	-

ANALYST TAKE:

- **Synopsis:** New software for personalizing smart home equipment, while gaining efficiencies in usage and therefore savings on energy bills.
- **Industry Need:** Simply connecting smart home equipment is a challenge, personalizing them is another layer of complexity which most users will not even bother to try. Automation, that goes a step further than just automating tasks, by performing them intelligently with an end goal in mind (in this case, saving on energy bills), is the need for 'true' smart homes.

New Software Makes Smart Homes Even Smarter – August 13, 2018 (1/2)

- **Value Proposition:** NREL's new software needs users to first provide it with their priorities about living in the home, which are used as baseline preferences and all devices adjusted automatically – for example, air temperature, hot water, low energy bills and low environmental impact. The software was tested using actual weather data, and provided 5 to 40 percent energy savings (most falling in 10-15% range).
- This is best explained by the quote in the article, “Deciding when you should turn on your lights seems reasonably intuitive, but how should you control your water heater to reduce your utility bill and use solar energy from your solar panels, without risking your hot shower? Having automation that's built in, that has an understanding of what's required to keep people happy, is definitely not something that's on the market now.”
- Frost & Sullivan argues that the term ‘smart home’ is a misnomer – we live in an age of the connected home, where most appliances and devices are simply connected to one another. In order to make them work together, the user must specify the rules and codes (e.g., “switch on lights at 6 pm everyday”). Software like these will allow us to enter the age of a true smart home, where the home makes some decisions by itself (‘switch on lights based on ambient day light levels, sunset timing and weather conditions’). An intelligent home, would be one that takes this a notch higher –instead of this software asking for user preferences, the intelligent home learns ‘real’ user preferences over a period of time and takes actions accordingly. Note, through this evolution – the effort level for the resident drops, while the home software picks up the burden. In that sense, this software (focused only on energy equipment), is a step in the right direction. However, we should expect an evolution towards integration of more equipment (entertainment, home appliances, wearables, etc.)
- **Target End-User:** All smart home residents, especially those concerned over energy bills.

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