*"Reflections from CES: IoT, VR, Cars & Wearables"**

Internet of Things (IoT) was everywhere but the move to be in IOT brought out really amazing products. Telematics (technology in cars) was also dominant but it is still many years away from enabling autonomous driving. Virtual Reality (VR) demonstrations were popular but can make people nauseous. Fitness bands & apps were everywhere but difficult to relate to improved fitness. It's all exciting but cautious.

Wednesday, Jan. 13, 2016

Written By:

J. Gerry Purdy, Ph.D.
Research Director, MobileSolve Group, Inc.
Principal Analyst, AOTMP
gerry.purdy@mobilesolve.com
404-855-9494

Every year when I return home from attending the International CES, I am certain that it is the last time I'll go to one of the largest trade shows in the world. It's like a gigantic party with thousands upon thousands of guests but you want to only meet and interact with a small number of them. It's hard to set up the 'right' meetings. You can easily set up all the meetings you can possibly pack into the time you're at CES – from breakfast meetings starting at 7 am through evening receptions that last until late into the evening.

CES enables companies to send out press releases or requests to meet via email. They have over 20,000 media and analysts on their lists. An analyst like me checks off the areas in which I'm interested in following (out of 50+ areas). Then, the releases and invitations only go to the media that have indicated interest in those specific areas. Ready. Set. Go. The week before CES (the week after Christmas) I got well over 500 requests to meet at CES.

If I'm there for two days, I can accommodate, at most, 10-12 meetings in one day (or once per hour). I once tried to schedule 15 meetings in one day. I got behind and never recovered making a lot of people unhappy. So, in my 2.5 days at CES, I scheduled 25 meetings. I start my identifying 10 or so meetings with companies in which I want to meet and send out requests not waiting on the CES media blitz. I anchor them into my calendar and then 'fill in' with meeting requests coming from the media requests regarding mobile devices, IoT and wireless.

I had a full schedule by two work days before CES and made a couple of last minute adjustments to accommodate a change in meeting time requests. I got through around 15 meetings when I became ill with food poisoning, ended up in a local Emergency Room and had to cancel my remaining meetings (which are being rescheduled in calls over the next couple of weeks).

I'm sure scheduling is just as frantic for the PR agencies and vendor executives who want to meet with important accounts and prospects (usually via private, off the floor meetings) as well as meeting with the media. So, everyone is jockeying around up to and even through the show to maximize the outcome by the end of the show.

Meetings

I had a number of really great meetings at the show. Some of these companies were deferred to be phone calls due to my illness, but showed me interesting developments in mobile and wireless. They are listed in alphabetical:

- Beamr – Mark Donigan – They provide optimization technologies for mobile video streaming.
- Carii, Inc. – Denise Hayman-Loa – They provide community management for sharing privately for enterprises. I recently wrote about them in Mobile Letter. Our meeting was to discuss a number of new (unannounced strategies under NDA).
- CellControl – Jesse Hoggard - They provide solutions for consumers and enterprise in the distracted driver space. They showed their new ion-vehicle product that mounts on the window and assists in the limitation of mobile device use by drivers. They also provide parents and enterprises with analytics.
- Ericsson – Coleen Rosander - They continue to provide support for three main areas of new business beyond providing network services to wireless operators: 1) IoT (containers, global), 2) transportation and 3) healthcare. Their Cloud services is one of the fastest growing sectors.
- Future Robot – They have a portable robot that can help (for example) home security providers with 'mobile video security' in the home (rather than a video camera pasted on the wall).
- Giraffic – Chris Michaels - They make mobile video download quicker by opening up multiple download streams at the same time and then re-packaging them together. They show a 3x to 10x improvement in download of videos to mobile devices.
- HERE – The company is now co-owned by German automotive companies Audi, BMW, and Daimler. They were demonstrating some advanced navigation in traffic that discriminates by lane. Gives 'best routing' in real time for both road and off-road operation.
- Meridian AR – Robert Brown – They have done more to make Augmented Reality a viable business by providing their customers (major brands) with ways to integrate AR into their services and, thus, monetize AR via demonstrable benefits to major brands. In one case they can determine via AR is a product is counterfeit.

- Motorola Ventures –Met with Brad McManus to discuss their current investment strategy to focus on public safety and first responders. There are some exciting things happening in this arena.
- MyScript- Gary Baum - Coming to market this year with a total re-architecture of handwriting recognition. It is very clever how it works and will do an excellent job with not only handwriting but also math (great for high school math students and all of us who simply want to get the result by jotting down number or algebra), tables, graphs, drawings. It will work on iPads, Android and Surface Pro devices. This will get a number of product innovative awards.
- PrivacyStar – Jeff Stalnaker -The call intercept and routing company. I recently wrote about them. Our meeting was to discuss a number of new (unannounced strategies under NDA).
- Samsung Microelectronics – Ryan Smith – We discussed how flash is displacing the hard drive in most portable devices and with most of our data moving to the cloud that we only need to 'see' (occupy) the subset of our (gigantic) library at any one time.
- Systech – They are what I would call 'sleeper' company in IoT as they are working on a language that will facilitate the attachment of all IoT devices. If what they have catches on, it could be huge.

Internet of Things (IoT)

I would definitely call this CES the Internet of Things (IoT) centric show with additional focal areas on Virtual Reality (VR), telematics (technology in cars), fitness (bands, apps, devices, analytics) and robots & drones. Smartphones were present but typically as part of a new app or delivering communications, e.g. "our device communicates with your smartphone and then to the cloud."

IoT included many things that you'd sort of expect to see at CES: connected toys, connected appliances for the home, home security, sensors for the field and body sensors. But, I was surprised at how many almost unimaginable things were announced as part of the IoT theme of the show including, but certainly only a small part of the total: (listed in alphabetical order)

- Aroma Care – Wi-Fi enabled oil diffuser – control sent via app
- Emfit – sleep tracker
- Feel – Fitbit for your emotions
- Focus 1 – Headband to control appliances via thought
- Foobot – Air monitor and app
- GameTraka - GPS wearable trackers designed for use in outdoor contact sports, including football, basketball and soccer.
- Grush - A smart toothbrush –let you know how many brushes you're making of your teeth, again through the toothbrush app.
- HnterFan – Wi-Fi connected ceiling fans – control them via the app
- Human Charger – Beat jet lag
- Hydrao- A smart shower head: lets you know how much water you're using while showering via the shower head app
- Innovative Cor – UTC climate control app
- iSwimband – alerts parents and supervisors if someone is in danger of drowning
- OneCook – Connected pressure cooker

- PerfectBlend – Connected coffee maker – auto blend via the app
- Petcube – watch, talk and play with your pet remotely
- ReliefBand – This is an FDA-cleared device for the drug-free treatment of nausea and vomiting associated with morning and motion sickness.
- RippleMaker – burns images on top of latte from app
- Skully AR1 – AR in a motorcycle helmet
- SmartQsine – a pad placed in the refrigerator to report status of items placed on the pad.
- TempTraq – Patch to record and communicate body temp over time
- Thermo – Wi-Fi connected thermometer
- Triby – Voice control of appliances in the kitchen
- Varoowell – Auto adjusting bed
- Vyoocam – Camera for our glasses, e.g. the dash cam for your head

Some of these will amaze you and drive you to think, "Wow, I could use that!" while others will conjure up, "Who could possibly use this?" What I got out of all of this is that just about anything in your home could eventually be connected via either (short-range) Bluetooth or (long-range) Wi-Fi, and they will all be controlled via an app operating in your smartphone.

The IoT movement is powered by much lower sensor cost and much lower communication cost. Many devices can be made 'IoT ready' within a dollar or less and communication cost much lower than that for low bandwidth communications.

Home networking and security systems are moving from a proprietary system of devices and communications to a central hub with a myriad of modules that will work in a plug and play environment. The user will communicate with their smartphone to the hub and from there though the home wireless gateway to the Cloud. While this migration is happening, the transition is slow because the integrated, single vendor solutions are way out in front from a market perspective. It will take a few years for this market to completely turn around.

Proprietary vendors will have to learn to accept homeowner purchased devices that easily plug into the proprietary service's hub as well as, in the near term, offer better solutions at more affordable packages.

<u>Virtual Reality (VR)</u>

I don't typically cover consumer gaming or VR. However, there was so much about it everywhere you went at CES, it was hard to ignore. For those of you who haven't worn a set of VR goggles, what you see when you put on the goggles and run a VR enabled app is an emersion of you in the environment, e.g. a game or visual tour. The one I tried was what I would see if I were standing on the moon looking back at the Earth. You can look up and down and move around. There is likely going to be some major developments primarily in software that can be automatically downloaded into the Major players include Oculus Rift (owned by Facebook), PlayStation VR, Samsung Gear VR and others.

It's important to realize that these new fancy VR goggles are really just a special kind of display. The actual computing of the VR images is done in a desktop computer with a high end graphics cards (Nvidia GeForce 970 or AMD Radeon 290) that can re-position the images you see as you turn your head while wearing the goggles. There are some simple, less impress solutions like the one Google has created called Google Cardboard that uses special lenses to view an image on a smartphone display. And, Sony's PlayStation VR does the graphics in the game unit. But, the Oculus and most other VR units require plugging them in to expensive graphic processor units.

There is a real hidden danger here in that some people get nauseated from wearing the goggles primarily due to the slight delay between moving your head and seeing the adjusted image. One company, ReliefBand as mentioned above, has developed a solution that can counter nausea in VR as well as for morning sickness which could be the biggest benefit of all.

Telematics & Autonomous Cars

It's simply amazing to see so much technology coming in to cars so quickly. Normally, new products can take five or more years to get into the factory production line, but every major auto manufacturer has made technology a major focus which has brought new products into the auto market much quicker – sometimes in a year or less. Notice that Chevrolet now provides a Wi-Fi hotspot in most models this year. It's still going to be many years before we'll see fully autonomous cars drive themselves around, but Super Cruise Control will provide a good start by letting you take your hands off the steering wheel while driving on the highway.

Closing Comments

CES is always a busy but often worthwhile show. It's really a number of individual shows on various topics all packed into one. Thus, the auto show is in North Hall, major consumer electronics in Central Hall and so forth. Fitness band companies and fitness services was held in the Sands Convention Center. I am going to write an entire column about this category in a near term future Mobile Letter. You'll likely be surprised to hear my predictions about this category.

The International CTA organization has been producing CES since 1967. Shows often come into existence, grow rapidly and then even quicker die off. The Spring and Fall Joint Computer Conferences (SJCC and FJCC) followed by COMDEX both went through that cycle. CTA has been smart to create new shows within CES and when they are no longer popular, simply remove them and replace them with others. That gives them a greater chance of being around 25-50 years from now. While wireless technology makes it easier to communicate, there will always be a need for people to get together live once and a while.

* Republished with permission by AOTMP.

If you would like to receive this newsletter directly, send your contact information to subscribe@mobilesolve.com or go to www.MobileSolve.com.

Disclosure Statement: From time to time, I may have a direct or indirect equity position in a company that is mentioned in this column. If that situation happens, then I'll disclose it at that time.