Clarke's CES 2018 Report

By Clarke Stevens

Introduction

Welcome to my annual report on the Consumer Electronics Show (CES). I think this is about the 20th version, but it's hard to be precise with carbon dating. As usual, I walked every aisle of every venue on the show floor (with the exception of C-Space). This not only allows me to bring you pretty comprehensive coverage of the show, it also completely inflates my step count, so I can spend most of the rest of the year employing my "efficiency of movement" strategy and still keep up my average.

Once again, CES is setting new records. There were over 184,000 attendees. That puts us at about Worcester, MA on our city size comparison scale. There were about 3,900 exhibiting companies spread out over 2.6 million square feet of floor space. Notably, there was a ground-breaking ceremony for an expansion of the convention center that will add another 600,000 feet of exhibit space. That should be completed in 2021. I'm assuming the upgrade will include some electrical improvements as the Central Hall of the convention center was plunged into darkness for 2 hours on the second day of the show, highlighting the dependence of the $292,000,000,000 consumer technology industry on electricity. My thanks to Edison, Westinghouse and other electrical pioneers for driving the 21st century economy.

There were several key themes of this year's show. Here's what I think was most important:

- **Artificial Intelligence (including machine learning and big data analytics)** – Artificial Intelligence has been a research topic (and some may say the primary product) at universities for decades. The difference this year is that it is becoming a mainstream technology through products like Alexa, Google Home, and a number of gadgets that monitor sensors and make decisions.
- **Internet of Things and Smart Cities** – The Internet of Things (IoT) was big last year, but it's even bigger this year. Consumers can actually buy most of the IoT products they want now. However, there are still compromises in interoperability and user interfaces. These are the IoT problems that will be addressed in big ways in 2018. Smart cities and commercial products will drive much of the investment in IoT, while consumer products will drive public interest.
- **Voice and other non-keyboard interfaces** – Google is traditionally absent at CES, but they dove head-first into it this year with a major advertising campaign. Google employees were scatted in partner booths throughout the show, highlighting Google Assistant in other vendor's products. Alexa was omnipresent again this year, and other voice interfaces also staked claims. Look for solutions in 2018 that will help these siloed ecosystems cooperate in some way to the benefit of the consumer (See OCF). Gestures and cameras are also driving natural user interfaces.
- **Augmented Reality, Virtual Reality and Immersive User Interfaces** – Augmented Reality stole some attention from Virtual Reality this year as vendors focused on real-world

solutions that can be achieved with extra contextual information. Virtual Reality is still big but seems more suited to gamers and solving problems in virtual worlds.

- **Autonomous and Electric Vehicles** – CES has become the fifth largest auto show. There were fewer loud stereos and tricked-out cars this year (although still plenty) and more autonomous vehicles and thoughts around "mobility ecosystems." Also, there were many devices designed to obviate the need for walking.
- Other Topics
    - **5G Networks** – There's a lot of hope being placed on the promise of high-speed, wireless networks. More trials are planned in 2018.
    - **Health Solutions** – Health and wellness is a huge market that is perfect for IoT, data analysis and expensive equipment (with potential alternative payers in insurance). This market is big and growing.
    - **Education Technology and STEM** – The $292 billion consumer technology industry needs people to make it work. There are lots of tools available now to train and recruit this unsuspecting work force early and with their enthusiasm.
    - **Hyper-Personalization** – There are tremendous benefits for both customers and vendors in delivering personalized experiences to each individual. However, this comes with tremendous risks to privacy, security and safety. Look for innovative solutions this year aimed at controlling this balance.
    - **Robots** – CES is a technology show. What do you expect? There appears to be a worldwide effort to make robots seem ever more relatable. This is perhaps motivated by a robot strategy to lull you into complacency until they take your job. You might want to take a look at the STEM education products.

Cable Take

If you're a cable operator, things look pretty good right now. The world is becoming more and more reliant on the products we sell. However, this leads to potential commoditization. Here are some recommendations to keep the cable industry relevant:

1. **Keep the network best-in-class.** Our networks are a tremendous asset that is hard for competitors to duplicate, but they will try. 5G provides a tremendous opportunity for those who have licensed wireless spectrum, but a threat for those who don't. Whatever networks you have keep them best in class and leverage their strengths. For all cable operators, we have an advantage in scalable capacity and speed. For now…
2. **Look up the value chain.** While our networks provide a fundamental advantage, they don't attract many customers on their own. Cable needs to continue to offer higher margin products that are cable-branded and directly beneficial to customers. IoT, personalization and cloud services are all clear opportunities here.
3. **Keep your focus on the consumer.** Cable has a current advantage in its breadth of consumer interaction opportunities. We have a monthly billing relationship, a fleet of installers, and with IoT, we have direct insight into how customers want to live at home. We have the tools to provide what consumer wants (at home, at work, and around town) are better equipped than most anyone other companies. In order to capitalize on our advantages, we must maintain a high level of trust.

What was at CES?

The rest of this report is where I have fun. I find many amazing products at CES every year. I try to enthusiastically present the best of those to you in this report. I also find many products that test (and often cross) the bounds of credulity. Some of these products actually make it to market and later prove my skepticism wrong, but others prove me ohhh sooo right. This report is a labor of love and the products I choose to cover are made directly by me with essentially no supervision. My thanks to my employer (Shaw Communications) who continues to send me to CES and allows me to cover it in my unique way. I hope you find my report useful and (more importantly) you enjoy it enough to keep reading.

Artificial Intelligence, Data Analytics and Big Data

Intel chose "data" as the theme of their keynote presentation. It is fair to say this was also a major theme of the show. Here are some of the key things I found.

IBM Quantum Computer (with the Intel 49 Qubit Chip)

https://www.engadget.com/2018/01/09/this-is-what-a-50-qubit-quantum-computer-looks-like/

Since so many of you have fortunes tied up in Bitcoin (admit it, a technology and currency you don't understand), I thought it only fitting that I introduce this year's report with another technology you don't understand – the quantum computer. IBM had the world's first 50 qubit quantum computer on display. If my bible story history knowledge serves me, I believe that is a computer about 75 feet long. That is a big…hold on, that's a cubit! A qubit is a more of a quantum-flavored bit that is in a superposition of quantum states between a one and a zero. "That's a very fragile state," explained Jeff Welser, VP and Lab Director of the IBM Almaden Research Lab. I seem to remember using this explanation with my 7th grade math teacher about my homework with much less success.

Unlike a Von Neuman machine computer (what you are using), which basically does things one at a time, a quantum computer, using those qubits, can essentially test all solutions against a problem at once – a superpower previously only available to mothers.

The IBM quantum computer looks like a steampunk machine out of Jules Verne and takes up about 100 square feet of floor space. Most of that space, though, is required to isolate the quantum chip from thermal, electrical and magnetic noise. As part of this, the chip must be cooled to 10 milliKelvins – colder than deep space. Put another way, unless you are Jeff Welser, you are not winning this year's science fair.

Voice and Alternative User Interfaces

Using your keyboard is so last year. What started out as an engineering status symbol last year is now in your mother's house. Voice interfaces like Alexa are common, but CES exhibitors want to take it further with gestures, eye movement and brain waves.

Muse Brain Glasses

http://www.choosemuse.com/lowdown-focus/

There were several products this year to measure your brain waves. The Muse brain glasses are a good example. Paired with the Smith Focus app on your smart phone, the Muse glasses claim to help improve mental focus for better performance in sports, intellectual endeavors and life.

Garmin – Alexa in the Car

https://buy.garmin.com/en-US/US/p/591054

If you've ever wanted to talk to your car, Garmin is listening. More specifically, Alexa is listening through a new Garmin device. Your smart phone provides the Internet connection and the processing power, but Garmin provides the microphone and the window suction cup form factor. It's unclear what it will do when you yell at other drivers – especially once we get car-to-car networking.

MyManu – Wireless Real-time Translation Ear Buds

https://mymanu.com

Earphones were big at CES this year. Apparently, the regulatory line between what IS and ISN'T a hearing aid has been relaxed. Manufacturers can now build devices designed to enhance your hearing without needing a specific license to do so. This goes beyond a volume control to include digital processing sound. Companies have even gone beyond this to do truly amazing active noise cancellation and live translation between languages.

Last year you could be considered a wireless headphone if you had a single wire between the left and right ear bud. This year, that connecting wire must also be gone. A "truly wireless" headset has two separate earpieces, each with their own battery, processor, microphone and ability to be individually misplaced. Normally, you'd expect something with this much processing power to be too large to fit in an ear – and you'd be right. While these earphones are amazing, most of them are still a bit too large and require the development of what I'd call "ear muscles" to hold them in. I'm expecting these amazing technological wonders to be smaller next year.

But let's move on to the awesome features. MyManu is a good example. MyManu ear buds are respectable earphones for music, but they shine as real-life implementations of Douglas Adams' Babel Fish. The Babel Fish is a fish that you insert in your ear and it allows you to hear any discussion as if you were hearing it in your own language. MyManu does this by providing translation in 37 languages (so far) and creating a network of people in a conversation. This a can be a local network in a circle of conversation, or a global conversation with people scattered throughout the world. The associated smart phone app can be used to converse with people on the street in a foreign country who might not have a set of the MyManu headphones. The ear buds last 6 hours on a charge and can be recharged in the included battery case (which can also charge your phone).

Mars – Ear-to-Ear Real-time Translation

http://www.thetechrevolutionist.com/2017/11/mars-earbuds-win-ces-2018-best-of.html

The Mars translation ear buds work with fewer languages but add a cool feature that lets you share one of your ear buds in order to translate between the one you have and the one they have.

Nuheara – Digital Silence

https://www.nuheara.com

The Nuheara earbuds focus on noise cancellation. They do an amazing job of cancelling ambient noise while allowing you to hear conversation clearly. I can imagine these being amazingly useful in a crowded restaurant or at a popular consumer electronics show.

Bragi

https://www.bragi.com/thedashpro/

Bragi's wireless ear buds have Alexa enabled through your smart phone. You can ask Alexa questions even when you're out of the house or not near your Echo. The Bragi Dash Pro is waterproof and will automatically identify and track various exercise activities.

Internet of Things and Smart Cities

The Internet of Things (IoT) was bigger than ever at CES this year. If you want to connect something to the Internet, it's pretty likely someone has already done it for you. It may still cost a lot, may have a terrible smart phone application and pose a threat to your kin, but you can probably find it. What we need now is a concerted effort to enable all of your IoT devices, regardless of manufacturer, in a way that's convenient and safe.

Open Connectivity Foundation

http://www.openconnectivity.org

Organizations like Open Connectivity Foundation (OCF) are doing just that. About 400 companies are currently on the OCF train including Samsung, Intel, Microsoft, Qualcomm, CableLabs, Electrolux and LG. Samsung announced that all their products will work with OCF by 2020. Products from Haier, LeGrand, Honeywell and several others were on display in the OCF booth. OCF is different from other standards organizations in that they are focussed on enabling interoperability of all devices regardless of manufacturer, operating system or communication method. Most important, though, is that OCF is doing this with a priority on security. Common definitions of resources are created that can be used directly or mapped to other ecosystems. OCF is the de facto way to make all connected products full citizens of the Internet of Things.

Intel Neural Network Processor

https://www.movidius.com/news/introducing-tensorflow-support-for-neural-compute-stick

The Internet of Things (IoT) is practically table stakes at CES now. Everyone is getting into the action. I'm currently working on an application that will use brain sensing technology to turn on a light bulb every time I have a thought. If you want that kind of computation in your life you're going to need some processing power. That's where Intel's new Movidius neural compute stick comes in. It has the computational power, I just need to figure out how to link the USB to my brain…

The neural compute stick is designed for machine learning applications and now features support for the popular TensorFlow tools.

Evone – A Connected Shoe that Detects Falls

http://www.e-vone.com/?lang=en

The E-vone shoe is packed with sensors. While this is becoming more prevalent in sports shoes, E-vone has focused more on the work show and shoes for the elderly. The E-vone shoe can be monitored by your boss, who can be alerted if you fall (or take too long on your break, I suppose). The advantages presumably outweigh the disadvantages. Elderly people can be monitored for falls or located if they wander off. These shoes come with a subscription. Yes, Shoes as a Service (SaaS).

Kohler – Voice-controlled, Lighted Mirror with Alexa

https://www.us.kohler.com/us/Verdera-Voice-Lighted-Mirror-with-Amazon-Alexa/content/CNT131300006.htm

In a product somewhat reminiscent of Snow White, Kohler has created a magic mirror that will talk to you. The Verdera voice lighted mirror has Alexa integrated and has lights embedded behind the glass. It works like a regular Alexa speaker when you ask it to answer questions and control your IoT devices. No details were provided on its ability to accurately assess who is the fairest of them all.

Moodo – Scents Dispensed

https://moodo.co/?ref=Google%3D_g_&CmpID=1034324296_&AgID=48939402417_&SL=__&_KW=_moodo_&MT=_p_&_Ad_=244646977884_&AdPos=_1t1_&_Device=_c_&D_Model=__&PLCT=_&Trgt=_&gclid=EAIaIQobChMIuZ-X25jn2AIVhmB-Ch2QVwuXEAAYASAAEgJvnvD_BwE

If you are one of those people who primarily communicate through smell, the Moodo is for you. Four scent canisters on the top of the device can be individually activated to create the scent for exactly the mood you want to create. Most of these moods seem to be associated with breezes or mists. I'd be more interested in moods like beef or pancakes. As an added benefit, the Moodo can be used to disguise smells. That way, when your wife comes home after you and your friends have a chili cook-off, she'll just ask why it always smells like lilacs after these things.

NeOse – Digital Nose

http://aryballe-technologies.com

…At least that's what she'll ask if she doesn't have a NeOse. The NeOse is a portable smell detector that can identify 30-50 common scents. Perhaps even in the presence of lilacs. Smell #43? "Larry"

Invi – Smell Repel Bracelet

https://invi.world

As long as we're on the topic of smells, we need to discuss Invi. Invi is a non-violent protection device that, you guessed it, uses smell. The Invi uses time-tested defense techniques previously only available to skunks – and, well, Larry. The Invi is a wearable that goes on your wrist. It has a secret compartment that contains patented stank. If you are attacked, just break the stink capsule and your attacker will be instantly repelled. He's also going to be mad, so prepare to get shot. Due to some technical challenges in the directionality of smell defense, it is likely to get all over you as well. I hear that a bath in tomato juice works to minimize the smell or at least make you smell like tomatoes. I don't recommend you bathe with your attacker.

Moen – Alexa-controlled Shower Temperature

https://www.moen.com/whats-new/innovation/u

After your tomato juice bath, you're going to want to take a shower. The Moen U shower is just the ticket. This IoT shower lets you set a desired temperature from your smart phone or Alexa. You just tell Alexa to set your shower to 103 degrees and you are notified when it's ready. I need one of these in the worst way, but it's still a bit pricey and requires re-plumbing your shower. There are also certain drawbacks like there are no longer physical faucets you can adjust. Still.

Kohler – Digital Plumbing

https://www.us.kohler.com/us/smarthome/content/smarthome.htm

I mentioned Kohler before in the context of their talking mirror, but Kohler has more. In addition to a voice-controlled shower (this one with integrated music), they also have a bath

that will draw itself at a particular temperature and a toilet with a heated seat that will flush if you wave your hand. It also features a bidet that can be controlled via Alexa. And now you have too much information.

FirstAlert - Alexa-controlled Alarms, OneLink using Wi-Fi mesh

https://onelink.firstalert.com

FirstAlert's OneLink is a Wi-Fi mesh network installed in your smoke alarm. Where Nest stopped with the creation of a talking smoke alarm, FirstAlert picked up designing a smoke alarm that is also an Alexa device. This is actually pretty ingenious since a smoke alarm is required by law to be in the rooms where you live. An Alexa mounted to your ceiling is convenient and out of the way.

KooGeek – IoT System

https://www.koogeek.com, http://bit.ly/2y587W3

KooGeek is an Apple HomeKit compatible IoT control system. Among other interesting devices, it has a connected power strip and self-parking chairs that conveniently arrange themselves in a conference room.

Cosmo – Connected Helmet and Brake Light

https://www.kickstarter.com/projects/1215016782/cosmo-connected-the-first-connected-brake-light

Cosmo has graduated from Eureka park and now has a real product on the market. Their helmet brake light turns on when the rider decelerates and has a magnetic mount that allows it to be moved between helmets. It connects to your smart phone and will send out alerts (with GPS coordinates) in case of a crash. Cosmo is working on versions optimized for bicycles and horses. Yes, you can get a brake light for your horse (more horse technology to come later in the report).

Cocoon Cam – Smart Baby Camera

https://cocooncam.com/products/cocoon-cam-plus-with-lifetime-breathing-monitoring

The Cocoon Cam is the latest technological breakthrough in parent hovering technology. It allows you to literally hover above your baby in the form of a camera. It also monitors your baby's breathing and sends an alert if the baby cries. That baby is controlling you! I'm just sayin'.

Euveka – Smart Morphosizing Clothing Dummy

https://euveka.com/en

If you're not crash-testing cars or modeling clothes in a store window, your employment opportunities as a dummy are pretty limited. Well now there are new opportunities for

dummies who want to get in at the front end of the clothing business. The Euveka dummy is connected and can change its size to match any human dimensions. The tailor can take measurements, then emulate them on the Euveka morphosizing clothing dummy to create perfectly sized clothes.

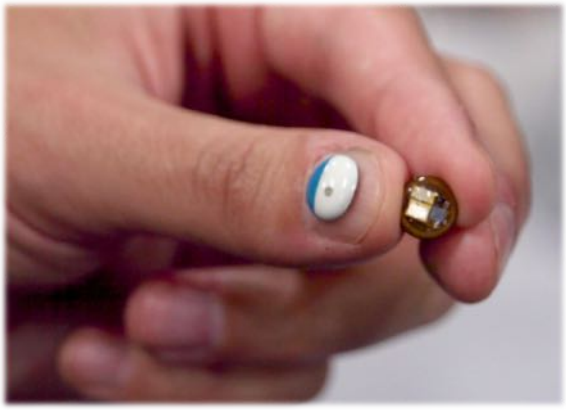
Electron – Electrify Your Bike

https://electronwheel.com/?gclid=EAIaIQobChMIiLC1jp7n2AIVUYF-Ch2CjgaLEAAYASAAEgJjzfD_BwE

If you like riding bikes, but don't particularly enjoy the pedaling part, the Electron is for you. Electron attaches to the wheel of a normal bike and makes it electric. Electron assures me this is one of the easiest ways to sound like you're healthy. It also connects to your smart phone to – I don't know – measure how many calories you could have burned?

UV Sense – No-battery UV Sensor

http://www.lorealusa.com/media/press-releases/2018/january/uv-sense



The L'Oréal UV sensor is a small UV sensor that sticks on your fingernail or watch band. It requires no batteries but uses near-field communication (NFC) to communicate with the app on your phone. It can tell if you've had too much sun that day and tracks UV exposure over time. Expect to see more sensors like this over time. Who wants to change a battery?

Neutrogena – Skin Cam

https://www.neutrogena.com/skin360-app.html?utm_source=google&utm_medium=cpc&utm_campaign=NTG-Brand-Skin360-BMM&utm_content=General&utm_term=%2Bneutrogena+%2Bcamera&gclid=CJGiooKg59gCFVWXxQIdLqMLxQ&gclsrc=ds

The Neutrogena Skin360 is a specialized camera lens that attaches to your smart phone and allows you to take disturbing close-up photos of your skin. It turns out that disturbing close-up photos of your skin are a primary method dermatologists use to figure out what that rash is or whether you might need to start wearing a L'Oréal UV sensor. In any case, this takes selfies to a new level.

Foldimate – Laundry Robot

https://foldimate.com

Last year, Seven Dreamers (that's the name of the company) demonstrated their "laundroid" that presumably folded laundry for you. I say "presumably," because the demo involved dumping a load of laundry in one cabinet, then removing it a few minutes later from another cabinet neatly folded. Clearly, it was either an automatic laundry folding machine or a sad use of interns.

This year, we got another laundry folding device in the Foldimate. The Foldimate is too small to contain a college-sized intern, so I think it actually is an automatic laundry-folding machine. You do have to kind of shake out the shirt and feed it to the pincers on the front. It currently folds pants, shirts, towels and pillow cases. I'll be impressed when it can fold a fitted sheet, because that is basically impossible. Maybe if we connected it to IBM's quantum computer…

Guardian – Water Value and Sub-metering Sensors

http://www.guardianwp.com

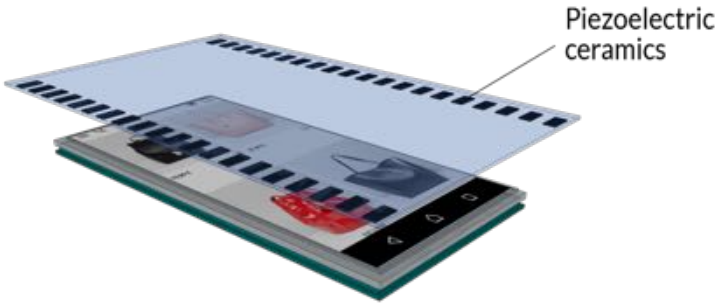
Water was added to the IoT at CES this year. Previously, CES considered water to be something to be passed out to attendees or used to void smart-phone warrantees. (Actually, I do recall a CES a couple of years ago where vendors seem to have been encouraged to demonstrate their products in fish tanks.) This year, however, IoT is being used to detect water leaks, measure water usage and turn water supplies off when those leaks are detected. Water flow is measured using a variety of methods including standard flow meters, sound, Doppler sensors and even optical sensors that watch the meter spin around. Guardian does sub-metering to measure use by individual tenants. Other companies are looking at home applications to detect leaks, measure flow to individual fixtures and turn off the water main. The H2know system can even detect which fixtures are being used by analyzing their "signature."

Looxid Labs – Virtual Reality and IoT Observation

http://looxidlabs.com

Looxid Labs uses virtual reality, eye tracking and brain wave measurement to track emotional response to various stimuli. Why do I get the feeling this project evolved when some graduate student surprised his office mate and said, "You should have seen the look on your face?" Well, now we can see the look on your face without the pesky cost of actual field research in the field.

Hap2U – Haptic Screen Overlay



http://www.hap2u.net

Speaking of sensory research, Hap2U has developed a haptic screen toolkit. Things projected on the screen can have textures. In the demo, the textures were "smooth" and "slightly unsmooth," but I was assured that more textures are in the offing.

RoboMart – Autonomous Mobile Produce Department

https://www.robomarts.com

The RoboMart is an autonomous vehicle that drives to your house to deliver fruits and vegetables (or other goods). You select the produce you want and the vehicle uses a complex system of cameras, scales and payment systems to determine if you are stealing. This is much better than the current system because why would you leave your smart house and deal with all that annoying human interaction?

Toyota – ePalette

Toyota has a similar idea called the ePalette, but it is meant as a flexible platform for everything from food trucks, to Uber to package delivery. The CEO of Toyota, Akio Toyoda (his real name), says his main goal is to transform Toyota from a car company to a smart mobility company. This is the envisioned future where car ownership seems quaint. The ePalette won the Engadget Best of the Best of CES award.

Velco – Connected Handlebars

https://velco.bike/en/

Velco's Wink handlebars make any bike smart. The handlebars connect via Bluetooth to your smart phone. Left and right lights guide your course without the need to look at your phone. Your bike can be tracked if stolen and the integrated headlights light your way. Your route is also tracked and logged so you can evaluate your workout. The handlebars will detect if you get in an accident and can report your location.

PetWalk – Connected Pet Door

https://www.petwalk.at/dog_door_instead_of_pet_flap?___store=at_en&___from_store=at_de

The Petwalk is an automated pet door that is actually a door rather than a flap. It opens when your pet with RFID (either a collar tag or an implant) shows up. The door (which is rigid and locks like a regular door) opens automatically and latches once your pet is through. It's not foolproof in keeping out burglars. For example, a burglar could steal the tag on your dog's collar, or your dog could be complicit in the crime. However, it's much more secure than a normal door flap and it can also be installed in walls and windows.

Pebby – Pet Camera Robot Ball

https://www.getpebby.com

Pebby is a robot ball (like the BB8) that is intended as a toy for your pet. It includes a speaker and microphone, so you can have a conversation with your pet through your smart phone while at work (if you need that sort of thing). There is also an integrated laser, so you can drive your cat crazy while you're at work (if you need that sort of thing). The Pebby can be rolled all around your house and the integrated HD video camera can capture everything – you know, for the ASPCA pet abuse trial.

Cauldryn – Heating Vacuum Bottle

http://cauldryn.com/?gclid=EAIaIQobChMIo8bv7Kvn2AIVDJ9-Ch0hPwjsEAAYASAAEgI5CvD_BwE

The Cauldryn is a thermos for the outdoor enthusiast that can be used to heat things as well as retain heat or cold. There are four temperature settings including boil and brew. The regular version uses a heating element that runs off a car battery. So, you know, bring a car. The mobile version has a USB rechargeable battery that can keep things warm (but not boiling or brewing) for the whole day. When the battery runs low, just plug in the USB charger. I recommend you find a current bush. Sorry.

Toto – Digital Toilet

https://www.totousa.com

The Toto digital toilet has been around for a while, but it's what you need if you find the Kohler toilet not to be invasive enough. The Toto toilet is full of surprises represented by buttons with icons that aren't always completely clear. Let me just say that it involves heat, air and water jets

cleverly concealed in a toilet seat. If you're adventurous, you can play a little game I call Toto roulette.

AiPoly – Grab-n-Go Store Automation

https://www.aipoly.com

AiPoly is the future of shopping – or as skipping the cashier used to be called, "stealing." At least it seems like stealing. You go into one of their grab-n-go enabled stores, take what you want, and leave. Presumably, their smart phone app identifies what you remove from the store and charges you for it. The app also allows for complete store inventory every few seconds (presumably for the managing store computer) and can warn you if you're about to pick up a gallon of expired milk. If you decide to use AiPoly, I recommend you carefully check to make sure your store is, in fact, an AiPoly store before walking out the door with your groceries.

Sproutel – Smart Aflac Comfort Duck

https://www.sproutel.com

The Sproutel My Special Aflac Duck is a plush robotic duck with the annoying Aflac duck voice. Initially, I dismissed this idea as a silly marketing campaign. I've since changed my mind. The Aflac duck is a comfort toy for children being treated for cancer. It responds to them and can be programmed with different emotions based on the child's needs using little medalions. It can also be "treated" along with the child during the average 1000-day hospital stay. The goal is to make the duck available to children nationwide during the winter of 2018-2019.

Remo – Over-the-Door Security Camera

https://remoplus.co/products/doorcam-worlds-first-over-the-door-smart-camera?utm_campaign=launch&utm_medium=cpc&utm_source=adwords&gclid=EAIaIQobChMIrJ72xa3n2AIVDol-Ch2-8g37EAAYASAAEgI3hvD_BwE

If you're a Kardashian who keeps your jewelry collection in a hotel room (or anyone in need of portable security), you may be interested in the Remo+ over-the-door-smart-camera. It is a fully tricked-out Wi-Fi security camera that is battery powered and installs just by hanging it over your door. It can detect motion, then send you alerts and videos regardless of where you are. It includes two-way audio so you can talk to visitors or would-be package thieves.

Siren – Diabetic Smart Socks

https://siren.care

You may not have a need for smart socks, but for millions of people at risk for diabetic foot ulcers they are a godsend. The socks monitor your foot temperature and activity to warn you of potential problems. A little attachment on the socks communicates wirelessly with your smart phone. The socks are washable and don't require charging. You can even get a subscription – Socks-as-a-Service.

Enhancia – MIDI Ring

http://www.oria.io

The Enhancia ring gives you motion control to modulate your MIDI (Musical Instrument Digital Interface) keyboard. The ring recognizes motions like a finger wiggle or tilt. These motions can be translated to MIDI modulation signals like vibrato, bending or volume without limiting your ability to play with both hands. It does not (as I assumed) control your fingers with MIDI.

ITRI – Handheld Pesticide Residue Detector

https://www.itri.org.tw/eng/Content/NewsLetter/contents.aspx?&SiteID=1&MmmID=617731531241750114&SSize=10&SYear=2017&Keyword=&MSID=744517657224557363

For those of you concerned about pesticide residue who want to quantify your fears, the ITRI handheld pesticide residue detector is for you. You place the device in water with your vegetables and it responds with a traffic-signal alerting system. Green for safe, yellow for questionable and red for, "throw in the furtherest direction." Alternatively, you could just wash your produce well.

Flic – Flic Hub for Multiple Buttons

https://flic.io/introducing-flic-hub/

Flic buttons are IoT buttons that can be programmed to do specific things. Previously, those specific things were tied via Bluetooth to a specific smart phone (one at a time). The Flic-hub stores the button configurations (up to 64) and connects the system to Wi-Fi so the buttons can be used by anyone. Additionally, an infrared repeater is available, so you can control your legacy TV and stereo equipment.

Ossia – Forever Battery

http://www.ossia.com/cota/

The Ossia forever battery is a AA battery that charges via the Ossia Cota wireless power ceiling tile. In other words, you can charge the batteries in your remote control at a distance of several feet while the remote sits on your coffee table or under your couch cushions.

TAPPLock – BT Fingerprint Padlock

https://tapplock.com/?gclid=EAIaIQobChMIk7yCtbrn2AIVFIN-Ch2RCwBsEAAYASAAEgKYYfD_BwE

TAPPLock is a padlock that is unlocked with a fingerprint. Up to 500 fingerprints can be enabled. You can also provide temporary and time-based access to unlimited users with the smart phone app and Bluetooth. If you're getting close to the 500 fingerprint limit, you might want to consider the reason for having a padlock. However, the TAPPLock does provide logging information so you can see who has accessed the lock and when.

Neobear – Globe with AR

http://www.neo-bear.com/8-neobear-ar-globe.html

The Neobear globe is an interactive augmented reality globe. It is a regular globe with an AR "magnifying glass" in the form of a smart phone app. The globe gives you an interface to select locations and the app does the rest. NeoBear also has an AR Magnifying glass in the form of round screen computer that overlays a camera view of what's under the magnifying glass with meta information about anything identified. For example, you might magnify a beetle and get all sorts of beetle facts. This is a very cool way to learn about the earth.

GNM – Digital Infrared Heated Clothes

http://www.grahope.com/index.php/Home/Index/trappings

As an avid outdoorsman, I can advise you to wear layers of clothing when you're going to places with unpredictable weather – or, I could tell you to forget about that and buy graphene heated clothing. Graphene infrared heated clothing can be temperature controlled through a Bluetooth smart phone app. GNM has chosen a stylish vest as their heated clothing format of choice. However, you will be happy to learn that you can also get the technology in a heated oil painting format if you want to use graphene to warm your home. Sounds like a great way to heat the Louvre.

Philips – Smart Sleep Mask

https://www.usa.philips.com/c-p/HH1600_02/smartsleep-wearable-sleep-improvement-system

There were several companies at CES that claimed to be able to improve the efficiency of your sleep through various facial appliances. Some use brain waves. Others use lights and sound. All of this is managed through a smart app. One thing is for sure. If you are trying to sleep by going to bed in a dark room, you are doing it all wrong. I'm using the Philips SmartSleep wearable as a representative example.

Peleton – Digital Group Workout Treadmill

https://www.onepeloton.com/tread?gclid=EAIaIQobChMIiOCNy7_n2AIVDJJ-Ch3sIgP3EAAYASAAEgJmPPD_BwE

I'm assuming you've heard of Peleton since it is impossible to watch TV or ride the subway in many cities without seeing their ads. As I understand it, people typically go to gyms to exercise, be with friends, and get yelled at by "coaches." With Peleton, you and your friends can get yelled at in the comfort of your own homes. This has been done to date via video and a connected bike platform. Now Peleton has expanded beyond bikes to a fancy treadmill form factor that can be digitally adjusted to add variable levels of pain to the yelling.

Roadie – GPS Tracker on Multiple Global Networks

https://www.invoxia.com/us/en/gps-lpwan-tracker/roadie

The Roadie is a new model for tracking. The roadie has a GPS and a Wi-Fi network connection. The tracker's position is communicated via Wi-Fi in most major US cities. Unlike traditional Bluetooth trackers, Roadie is a subscription service. When you buy the tracker, you get 3 years of service. After that, you can subscribe on an annual basis.

Digisole – Auto-lacing Smart Shoe

https://www.kickstarter.com/projects/141658446/digitsole-smartshoe-the-worlds-first-intelligent-s

Digisole makes a smart shoe. It can track your activity and includes a tension tightening system, so you don't actually use laces to tighten it. You can also heat the shoe with integrated lights. All of this, of course, is controlled from your smart phone.

CWD Sellier – iJump Connected Saddle

https://heelsdownmag.com/?p=12143

No species should be left behind in the IoT revolution. The new ijump saddle from CWD Sellier brings horses (at least jumping horses) in to the mix. The iJump is an attachment that connects to a normal jumping saddle in order to measure such things as air time, steps before jump and symmetry of gait. I've quickly added it to my list of things I will never need – OK, I sort of want to measure my symmetry of gait.

TechnoBAM – Massive Scale Mosquito Zapper

https://www.iotmosquitotrap.info/en/

Mosquitos are a nuisance and TechnoBAM is out to do something about it. The IoT mosquito trap simulates humans by rhythmically breathing out CO2 and then vacuuming up near-sighted mosquitos that are stunningly ignorant of what humans looks like.

Geo Sentinel – Alzheimers Watch

https://www.geo-sentinel.com/wp-content/uploads/2018/01/GEO-Alzheimer-Watch-EN.pdf

The Geo Sentinel Geo Alzheimer's Watch is an IoT assistant for Alzheimer's patients. It gives them tools they want (like a wrist phone, messaging, email, an SOS button and vital signs measurement) and tools they don't want (like runaway detection and a band that can only be opened by a caregiver with a key). Caregivers can't be everywhere at once and if there's one thing I've learned about old people, it's that they don't like restrictions. The Geo Sentinel is a nice IoT compromise that gives both patient and caregiver more control and simultaneously more freedom.

Parkmatch – Uber for Parking

https://www.parkmatch.eu/en/

Parkmatch is Uber for parking. When you register for the service (as a parking space owner or a parker), you get a special Parkmatch remote. That remote can digitally memorize the remote for your garage. Once your parking space is verified, you can offer it for rent. A buyer chooses your space for the times you specify as available. The payment is handled online like Uber. The user's Parkmatch remote is loaded with your garage opener signature for a limited time. All transactions are insured. While I like the idea, I'm a bit dubious. I don't want anyone to have access to my private garage attached to my house. A multi-tenant garage opens all your co-tenants to risk. A private detached garage that contains no valuables is a pretty small market. However I do like the idea of making money from your car with Uber and its parking space with Parkmatch at the same time.

BoxLock – Connected Box for Packages

https://www.kickstarter.com/projects/196013167/boxlock-home-smart-padlock-for-protecting-deliveri

One thing they never mention on all those video doorbell commercials is that your only recourse against package theft is to yell at the thief or provide potential identifying information. I assume most thieves attempt to conceal their identity and are unlikely to heed your calls to stop when they are walking off with your new flat screen (assuming you are even watching them in real time). It makes sense to remove the temptation. BoxLock is a lock that can be opened with the scan code on your package when it is delivered. The package is then placed in the box and the padlock is re-closed. At that point, you are notified that your package was safely delivered, and the lock was re-locked. It works with packages from all major carriers and you can provide temporary scan codes to friends who are delivering things while you're out.

Bagel Square – Digital Tape Measure

https://www.bagel-labs.com/product/bagel-smart-measure-black/

Bagel square is a connected digital tape measure that uses three methods to capture measurements (ultrasonic, wheel and tape/string) through Bluetooth to your smart phone. You can even identify measurements with voice notes and store them on your phone.

Augmented Reality, Virtual Reality and Immersive User Interfaces

Augmented reality outshined virtual reality this year and 360-degree cameras started becoming more practical.

Linkflow – 360 Neck Camera

https://www.kickstarter.com/projects/467094941/fitt360-the-first-360-neckband-wearable-camera

The Linkflow 360 camera is a 360-degree camera that you wear around your neck. It looks a lot like the neck mounted wireless earphones that LG makes. I like the idea, but I'm a bit skeptical that the results will be what you want. I suspect this will introduce shoulders as the index fingers of 360-degree photography, blocking most of your view. There is no front-facing camera, so that direction has to be constructed by stitching a couple of side views together from cameras mounted on a flexible frame. It may be great, but my money's on the more predictable GoPro Fusion 360 solidly mounted on a helmet on the top of your head.

Google Earth VR

https://vr.google.com/earth/

Google Earth VR is a virtual reality version of Google Earth. It allows you to virtually visit locations all over the globe and see them by just looking around. You can look around, fly over, or browse locations. It looks like the content is essentially the same as in regular google earth (e.g. the height of building feels like a 2D photo on 3D paper rather than perspective of an actual 3D building) but it appears to be augmented with some 3D photos.

XYZ Printing – Color 3D Printer

https://www.xyzprinting.com/en-US/product/da-vinci-color

The XYZ Printing 3D color printer is an actual PLA plastic 3D printer, but it uses a specially modified PLA that is a bit absorptive. Special CMYK color inkjet cartridges are then used to color the outside layer of plastic. This isn't perfect as the resolution of the color process is somewhat limited by the thickness of the plastic layers, but it's a good start. So now you can create your own action figures – for about the same price as a 75" OLED TV.

Miliboo – Smart Couch

https://intotomorrow.com/a-smart-couch-from-miliboo-at-ces-2018/

Miliboo has created what they claim to be the first smart couch. It is smart in the sense that it has various other smart appliances glued to it. These include a tablet that works as a remote, a Qi wireless charging armrest, an embedded subwoofer, and under-couch color lighting. In my opinion it's missing a few important technologies like the keep-the-dog-out-of-my-spot feature or the cloak-of-invisibility feature that ensures an uninterrupted sit.

Samsung – MicroLED Modular TV

https://news.samsung.com/global/samsung-unveils-the-wall-the-worlds-first-modular-microled-146-inch-tv

The new Samsung microLED modular TV is a pretty amazing innovation. We've seen similar things at sports stadiums where giant televisions are created by gluing panels of light bulbs together. That works well when you're viewing hundreds of square feet of area from hundreds of feet away, but it degrades significantly when you're up close. Samsung's microLED panels, however, can have pixel densities smaller than OLED. Because the LEDs

are inorganic, they last longer than OLED and don't require filters. The best part, though, is that the modules are potentially easier to manufacture since small modules can be created and put together to create giant TVs. The technology is not yet commercialized, but this is a promising concept in televisions that may change the industry.

Intel Studios – Largest 3D/AR Studio

https://www.engadget.com/2018/01/08/intel-studios-paramount-partnership/

Intel is branching out in interesting ways. They just completed a project with Paramount Studios to create the world's largest Virtual Reality studio. The studio is similar to a traditional sound stage in the sense that there is both a stage and sound. After that, they differ quite a bit. Think of a stage surrounded by a giant jungle gym – and at every conceivable point on that jungle gym, a camera is mounted. There is no area for cameras to maneuver or craft services donuts to be set out because the cameras shoot in every direction. There is also no need to maneuver cameras physically, because all the shots are from virtual cameras – non-existent cameras that are virtually created by combining the shots from the stationary real cameras. This enables new filming techniques that were never possible before because they relied on outdated concepts like real cameras and the laws of physics.

WayRay – Heads-up AR driving

https://wayray.com

WayRay changes the dynamics of how teenagers drive by allowing them to look through their screens at the road rather than looking at their screens and driving only by using their limited grasp of "the Force." WayRay has created the first holographic AR heads-up display to keep your eyes on the road while giving you extra contextual information about your drive. So far, it's not in real cars, but they're looking for partners.

Omron – Ping Pong Robot

https://www.omron.com/innovation/forpheus.html

Omron has created a ping-pong-playing robot. It's actually pretty good. This means it's able to accurately track the ball, understand its trajectory, position its paddle correctly in real time and hit the ball in the right direction with the right amount of force to get it back in play. This means

the Omron engineers are either demonstrating the agility and processing expertise of their robots, or they just have a really hard time making friends.

Luka – Reading Robot for Kids

https://www.youtube.com/watch?v=s3ED08N19lY

Luka is a reading robot for your kids. It teaches kids to love to read. It can read in a handful of languages just by taking a picture of the page and parsing the words. It will likely perform better reading its own specially designed books with clear fonts and coloring, but it's also supposed to read your existing library – probably with less emotion and context. It encourages kids to love reading and with its smart phone app can issue messages from you to remind them to brush their teeth and other things. In fact, I imagine it can do a lot of parenting things just as well as you. Maybe you can send it to parent-teacher conferences or school plays. It can probably form loving, life-long bonds with your children. But you probably have nothing to worry about.

GoPro – Fusion 360 Wi-Fi Camera

https://shop.gopro.com/cameras/fusion/CHDHZ-103-master.html

The new GoPro fusion 360 Wi-Fi camera is essentially a couple of GoPro cameras glued back-to back with fisheye lenses that can capture a complete globe of video images. Their motto is, "Shoot, then point," because you are capturing a sphere of images and you can choose the shot during editing. In addition to the spherical imaging, the camera features great, built-in image stabilization. Voice control allows you to control the camera without putting your finger in the middle of the shot.

Noveto – Audio Zones Through Active Noise Control

http://www.noveto.biz

Noveto uses active noise cancelling technology and precise photo ear placement to create virtual headphones. Only you can hear the sound intended for you. Those around you don't hear it even though it is just bouncing through the air. The only thing harder than doing this is finding a good use case for doing it. Headphones are wireless, cheaper and more effective. And now, you can even adjust the amount of ambient sound they let in, so you can actually talk to each other.

Black Box – VR Workout System

https://www.blackbox-vr.com

The Black Box is a virtual reality workout system. You go in to a virtual gym and virtually work out, then your avatar gets virtually ripped. I'm just kidding. Actually, you go into a virtual gym via a VR headset and really work out with more interesting equipment than the variable resistance handles you really have… and you actually could get ripped. I can see certain drawbacks to exercising while wearing a VR headset. I can anticipate real-world objects that aren't represented in the virtual world suddenly causing real-world problems. Also, I'm not sure you can really share a VR headset after sweating all over it.

Solos – HUD Sports Sunglasses

http://www.solos-wearables.com

The Solos sunglasses are a heads-up display that can be used by athletes to see augmented reality data while they're working out. This might include heart rate, workout time or cat videos. Whatever you need to see.

TimeScope – Travel Though Virtual Time Kiosk

https://timescope.co

TimeScope is another augmented reality experience, but instead of traveling through space, you travel through time. This requires a lot in the area of content development as non-real-time environments must be created using old photographs and historical context. However, it is anticipated to be used in controlled environments like museums, or near historic sites. This is probably as close as we're going to get to a time machine for now.

Yaw – Portable VR Motion Simulator

https://www.kickstarter.com/projects/346206518/yaw-vr-compact-portable-motion-simulator

Yaw is a perfect example of what happens when you leave engineers unsupervised for too long. It's basically a snow saucer in a big bucket that's fixed with rollers to simulate movement in virtual reality. Think of it as a portable Disney World. The experience is pretty effective even though all

you're doing is tilting in various directions. It's almost as fun to watch someone doing it as it is to do it yourself.

Fingertip Labs – Dial/Button Connected Through Smart Phone

https://www.o6app.com

Fingertip Labs has created a Bluetooth button/knob that can be used with most anything your phone can do. It basically turns physical actions like button presses and knob twisting into interfaces for your phone. This works great if you're controlling lights or volume, opening window shades, or scrolling through email. It's not as useful as a touch screen, but it is good for times where you need to rely on tactile feedback, like while driving.

Autonomous Cars, Foldable Scooters and Drones

Things with motors have become commonplace at CES. It started with cars (primarily as conveyance for stereos), but it has gone far beyond that now. Scooters, motorcycles and luggage have joined the party. All of it is now connected in the motorized Internet of Things.

ForwardX – Luggage that Follows You

http://www.forwardx.com

ForwardX makes luggage that follows you around. It uses cameras and sensors to follow you and avoid obstacles. There is also a bracelet you can wear that will vibrate if your luggage gets separated from you. This is a great way to keep your family together in the airport, but I'm guessing it can only hold one kid.

ModoBag – Drivable Luggage

http://modobag.com

The ModoBag does the ForwardX one better and turns the luggage world upside-down by being a suitcase that can actually carry you. It works like a little motorcycle with handlebars and pegs that fold out. I tried it out and it had no trouble carrying me over concrete and carpet. It has a top speed of 8 mph and can travel up to 6 miles on a charge. It can also charge two USB devices at once. All that horsepower only takes up 20% of its capacity, so you can actually use it as a suitcase if you want.

EyeSee – Inventory Drone

https://eyesee-drone.com

The EyeSee is a special purpose drone made of Styrofoam. Its special purpose is inventory in warehouses. Basically, it's a flying barcode scanner. It can be given a specific flight path to scan

up and down warehouse storage shelves and identify every palette. I suspect it was invented when somebody brought a drone to work, then tried to justify it. It will all be detailed in my forthcoming book, *Innovation Through Getting Caught*.

Tennibot – Tennis Ball Collection Robot

http://www.tennibot.com

The Tennibot is another special purpose robot. It is basically a robot vacuum cleaner that sweeps up tennis balls. Wait, I feel an innovation coming on. If we take a Tennibot and glue on an Omron ping-pong robot with a little bigger paddle, we've got the perfect tennis companion – an opponent that will not only play tennis but will fetch all the errant balls. This will be a case study in my other upcoming book, *Laziness, the Father of Invention*.

Hensoldt – Anti-Drone Jammer

https://www.hensoldt.net/solutions/air/electronic-warfare/xpeller-counter-uav-system/

One of the drawbacks of the drone craze is a massive proliferation of drones. There have already been many news stories of drones causing trouble. Some hang out near airports putting flight paths at risk. Other drones just get together at night and loiter near shopping malls. I'm pretty sure some of those Ecovacs Winbots are hanging out near intersections and washing people's windshields without their permission. Hensoldt has the solution. They blast specific jamming frequencies in drone-free zones. This disorients the drones and they wander back home and tend to avoid the area in the future. This is certainly an improvement since shotguns are apparently against my neighborhood covenants.

Segway-Ninebot – miniPlus

http://eu-en.segway.com/products/segway-miniplus

The newest Segway transporter is the miniPlus. Like the original, it has two wheels and is guided by leaning. Unlike the original, the handlebars stop at your knees. This makes it more portable as you can pick it up and carry it to your office. It also keeps your hands free, so you can read text messages and catch your fall (caused by reading text messages). If you get tired of riding, you can hop off and the miniPlus will follow along behind you. The miniPlus will go up to 20 km/h and has a range of 35 km.

Bell Helicopter – Air Taxi Ride

http://www.bellhelicopter.com/company/innovation/ces-2018?gclid=EAIaIQobChMInJO1od3n2AIVAdVkCh2lgwC-EAAYASAAEgLH8vD_BwE

Okay, let's be honest. The Bell Helicopter air taxi ride is just an amusement park ride with less amusement. Bell hasn't announced an air taxi service or any particular new technology. It wasn't even a helicopter ride. It's just a concept that basically kicks our flying car fantasies a bit further down the road.

Volocopter – Intel Autonomous Air Taxi

https://www.volocopter.com/en/

The Volocopter featured in Intel's keynote, on the other hand, is real and actually flew on stage. In a video, we saw that Brian Krzanich even flew in one in real life in a warehouse. The dream is still alive.

Smacircle – Most Compact Foldable E-bike

https://www.smacircle.com

The Smacircle is a lightweight, foldable electric scooter. It's made of carbon fiber and folds up into a little backpack (about 12 by 20 inches) that I'm pretty sure fits under an airline seat. It weighs in at just over 15 lbs, travels at up to 20 km/h and has a range of about 20 km. It connects with your smart phone and charges in about 2.5 hours.

Health

There were many medical, health and wellness devices at CES this year. In addition to virtual health clubs through companies like Peleton, there seemed to be an obsession with motion sensors scattered from your head to your shoes. Even more prevalent, were devices to clear your air, clear your skin and clear your mind so you can sleep more efficiently. I'm not sure all the sleep technologies were being honestly investigated, but they were very popular.

Whill – All-terrain Motorized Wheel Chair

http://whill.us/model-m-power-wheelchair-personal-ev/

This year, Whill showed a new model in their line of connected all-terrain electric wheel chairs. The new Ci has a more compact frame and can make tighter turns but is still has a 2" ground clearance and can climb a 10 degree slope. It travels up to 5 mph and has a 10-mile range. It connects via Bluetooth to your smart phone and even has a USB charging port. It comes in

several colors and has a range of accessories. If you need an electric wheel chair, this is the one you need.

Helite – Personal Hip Airbag

https://www.helite.com/airbag-senior

Hip injuries are a common and deadly risk for seniors. Helite intends to protect your elders with airbags – personal airbags. You just strap one of these babies around your waist and if it detects a fall, it will inflate before you hit the ground - theoretically. The video only shows a test inflation on a young person standing up. I'm less confident that it will effectively detect a fall or not accidentally inflate when your grandkid scoots closer to you on the couch. I'm also not confident that it will actually prevent injury. However, it will certainly make grandma the talk of the senior center. I'm not saying folks will intentionally tip her over, but people are curious.

Omron – Connected Blood Pressure and EKG Sensor

https://omronhealthcare.com/wp-content/uploads/Omron-Healthcare-CES-Blood-Pressure-Monitor-EKG-Fact-Sheet.pdf

Omron has added to their series of connected blood pressure meters with the descriptively-named "Blood Pressure Monitor + EKG." It can monitor AFib and high blood pressure in one device. It synchs via Bluetooth with the Omron Connect mobile app to track and share heart data with your doctor. It will be FDA cleared and available at retail in late 2018.

Solable – LaVie UV Water Purifier

https://www.lavie.bio/home

The Solable LaVie UV water purifier is a bottle in a bamboo box with UV light. You put in normal tap water, expose it to the UV lights in the box and voila! (It is a French company.) The water is now mineral water – or is it? Let me stress that I am not a chemist and may be wrong, but just thinking back to high school chemistry, I'm a little skeptical. No chemicals were added or removed in this process, so all that can happen (according to sources I checked online) is that some chemical reaction is stimulated by the light or some things in the water are killed. Indeed, the fact that viruses and bacteria are killed by UV light is well-established, but I didn't see any evidence that UV-A (or UV-B or UV-C) will remove or break down chlorine (or heavy metals, salts, or petroleum products) except the report commissioned by Solable (which I nerdishly read in its entirety) and referenced on their web site. So, the bad news is that I'm not seeing any validated evidence that the LaVie does more than kill bugs (that weren't already killed by the chlorine) in your water and leave you to drink their carcases. The good news is that your tap

water was probably already pretty safe due to the chlorine, filtering and other things done by your water treatment plant.

Ph Technical Labs – Smart Reading Glasses

http://phtl.com/dynafocals/

I was excited enough about the promise of smart reading glasses from PH Technical Labs that I sought out their booth (which was hard to find). I imagined magically modifying glass that would track the focus of my eye and mold itself into the proper thickness for reading. Indeed, their smart glasses do adjust for reading, but the only adjustment is the angle of the bridge support on your nose. So that thing where I lower my head and stare over the top of my glasses like a deranged old man – they automate it. I am soooo disappointed.

Orcam – Artificial Vision Glasses

https://www.orcam.com/en/myeye2/

Now the Orcam MyEye2 glasses were not a disappointment. These are glasses for the blind. While the lenses are basically pointless, the MyEye uses the glasses as a convenient mounting platform. The device is about the size of your index finger and houses a small camera and speaker. When you look at something, it attempts to identify it and do what eyes do. Then it announces what it "saw" through the speaker. If you look at the page of a book or newspaper, it snaps a picture and reads it too you. It's a bit of a superpower because you can snap the picture in an instant and have the page read back to you at any reading rate. If you "look" at money, it will give you the denomination. If you look at a shirt, it can tell you the color. If you look at a face, it can tell you who it is, or if it's a stranger. Of course, it also has a barcode/QR reader, so you can scan products and have them identified or get the USDA analysis. It also recognizes several helpful hand gestures. For example, you can point to identify specific areas of a newspaper to scan. If you lift your arm and look at your wrist, it will tell you the time – no watch necessary. There are tons of features that can be added. I have an app on my smart phone that recognizes objects. I'm sure this will be integrated soon.

Education

Education was a major CES topic, especially where STEM (Science, Technology, Education and Math) is concerned. There are so may cool ways to learn now, I almost want to do it over. It seems robots are coming for those teaching jobs and there's a good chance your kid's best friend will be a robot.

Botly – Coding Robot

https://www.learningresources.com/product/botley-the-coding-robot-2936.do?gclid=EAIaIQobChMIgL-pgOPn2AIVgX5-Ch32YAOhEAAYASAAEgJw5_D_BwE

Botley is a coding robot. Like many STEM toys he teaches critical thinking and coding concepts. Unlike many of these products, Botley doesn't have a screen or require a smart phone. This means you can get your li'l engineers into coding before they can actually read. Botley uses the paradigm of obstacle courses to teach STEM principles. It's pretty brilliant.

Picoo – Sensor Stick for Outdoor Games

http://www.picoo.nl

So, let's suppose you're a misguided parent who for inexplicable reasons isn't grooming your child for a life in engineering. Picoo has something for you. The Picoo is a handheld electronic gaming platform… No, hear me out!

…that gets your kids out in the sunshine. Basically, it's a handheld stick that looks something like a relay baton. It contains color-changing lights, sound, vibration and it's totally networked. It's also a programmable platform that stores many games and can be infinitely updated. Think of tag where when you tag someone and their Picoo buzzes and vibrates. Or imagine "tag" where nobody knows who is "it" because it's only communicated to them through a little vibration. Basically, any outdoor game you played as a kid can be turned into a better outdoor game with Picoo. The bad news is Picoo isn't quite available yet. Originally it is expensive and will only be sold to commercial outdoor gaming companies – in the Netherlands. I can't imagine that restriction lasting long, though. This is too great of an idea to keep from the masses of neighborhood kids.

Other

This final section is for things that didn't really fit in other categories were otherwise pushed to the end of the report. Also, you're almost finished.

WiCharge – Long Range Wireless Power

http://www.wi-charge.com

Wi-Charge is another wireless charger. This one is different in that it doesn't use Wi-Fi frequencies or even radio waves, it uses lasers. From what I can tell, it uses lasers in the infrared (heat) spectrum and focuses them on "receivers" that are primarily just solar cells. It

also claims 100% efficiency in electrical transmission between the transmitter and receiver. I learned that this is impossible on my first day of physics, so something doesn't add up. I'm also curious about how they focus beams on multiple receivers. My guess is that it's sort of a repurposed Led Zeppelin laser light show device that aims and fires on each receiver for a short period of time, then cycles to the next one. If you get a WiCharge, do me a favor. Turn off the lights, put on some Zeppelin and tell me what you see – for science.

MyLiFi – LiFi Lamp

https://www.indiegogo.com/projects/mylifi-light-design#/

The MyLiFi lamp is a normal LED desk lamp that has a LiFi transmitter attached to it. LiFi is a way to transmit digital signals over light. It has a couple of limitations. First of all, it is line-of-sight, meaning there needs to be a visibly clear path (or optical reflection) between the transmitter and receiver. This is advertised as a security feature. The second problem is limited distance as the integrity of the signal degrades rapidly in air. So, the benefit of MyLiFi is a wireless transmission through about three feet of air to a one-inch target receiver. So LiFi doesn't replace Wi-Fi so much as it replaces an Ethernet cable. One claimed benefit of MyLiFi is a digital "detox" period. I think they mean a radio frequency reduction because you're still transmitting digital data. You are simply not transmitting it via your personal Wi-Fi device. You're still receiving all the wireless signals being sent by the cell phone company, your power lines and your neighbor's Wi-Fi – and you've added optical frequencies. If you're serious about limiting your radio frequency exposure, I'm afraid you'll have to go to plan B – tin foil hats.

HP – AMP BT Speaker Printer

http://www8.hp.com/us/en/printers/amp.html

HP has created an ink-jet printer that is also a Bluetooth speaker. I'm not sure why either. Like most Bluetooth speakers, you can use it to play music or act as a speaker phone connected to your smart phone. So why just "print out" when you can "rock out?"

CamToy – Dog Companion Robot

https://www.indiegogo.com/projects/laika-an-interactive-companion-for-you-your-dog-dogs-robot#/

Why should humans be the only ones to enjoy the benefits of a companion robots? CamToy is rectifying this injustice with Laika, a companion robot for your dog. It's sort of like a Roomba, but it's provisioned with a camera, a microphone, a speaker, and a treat tosser. You can now play with your dog while you're supposed to be working. You can also put it in an automatic mode where Laika will play with your dog for you. C'mon, your dog doesn't know the difference.

Atari – Pong Coffee Table

https://www.maxim.com/gear/pong-coffee-table-2017-12

If you long for the halcyon days of the late 70's when you could boogie with abandon and relax with friends and a game of Pong, you're in luck – at least with the pong. You can now get the Table Pong coffee table and express your digital prowess with only a handful of monochrome pixels. The new Table Pong even lets you do it in three dimensions – far out.

Furrion – RV with Hot Tub and Helipad

https://www.furrion.com/services/design.html

If you need a place to host your Pong table, I recommend the Furrion RV. It comes with a hot tub, a helipad, and a helicopter (sorry, you have to buy the Pong table separately). How much does it cost? I'm not sure. I just know that I can work out a deal for you once you pay my 6-figure finder's fee.

Poloroid – OneStep Analog Camera

https://us.polaroidoriginals.com/products/onestep2-polaroid-camera?gclid=EAIaIQobChMIpdfVp-nn2AIVxmV-Ch1OlAR8EAAYAiAAEgJRnfD_BwE

I don't know if Polaroid has given up, but this year they featured an "updated" OneStep camera called the OneStep 2. It is the same Polaroid film camera you remember using during your Pong days, updated with a USB rechargeable battery. You point, shoot and shake while your image comes to life. I keep mine next to my analog alarm clock with flipping digital numbers.

Life Fuels – Sports Drink Mixer Bottle

https://www.lifefuels.co

The Life Fuels bottle automatically mixes flavor stored in three cartridges in its base into your water. Because… Yeah, I got nothing.

Ark – Lexip 6 Dimensional Mouse

http://www.lexip-gaming.com/en/

The new 3D gaming mouse from Lexip lets you control 6 degrees of freedom in your games and VR experiences. In addition to moving it on the table, you can tilt it left/right or forward/back. On the side there is a joystick the handles up/down.

Short Edition – Short Story Dispenser

http://short-edition.com/en/

The Short Edition machine is a short story dispenser. Because… that's where short stories come from? It's actually an outlet for short story writers who contribute stories to the project. A consumer can select stories of 1, 3, or 5 minutes, then select a mood and a story will be dispensed. An online version is available at the link.

Pro-Ject Audio Systems – Wireless Vertical Turntable

http://www.pro-jectusa.com/en-us/homepage/pro-ject-audio-systems/turntable/vertical-turntable-line

If you need more retro equipment to go with your Polaroid OneStep 2, you should check out the Pro-Ject Audio Systems turntable. It's a turntable that mounts vertically on your wall and lets you play your vinyl the way it was meant to be played. Apparently, suspended from your wall spinning vertically. I assume you would want to do this because you can't appreciate the vastly superior audio technology of today unless you compare it to the sad, noisy, low-fidelity recordings of the past and pretend to like them. (Sorry, I have graduate degrees in sound frequency digital signal processing and don't get the retro vinyl movement.)

Magnesphere – EMF Chair Cage

https://www.davincimedicalusa.com/magnesphere

If you think noisy audio recordings sound good, you might also like sitting in the Magnesphere EMF chair cage. I think this product is meant to replace those precious radio frequencies you lost when you did the digital detox with the MyLiFi lamp. I have to admit, though, I'm always fascinated by the imagination that results from the combination of a bad idea and an impressionable customer base.

Hairmax – Laser Hair Stimulation

https://hairmax.com

I suppose you also want hair. Supposedly, you can grow hair by heating up your head with the Hairmax. I was told that several people have purchased it, so it must work. Some of those people, it turns out, are less enthusiastic. One customer agrees that it makes your hair fuller – like a hair dryer makes your hair fuller. Who am I to judge? I'm just saying that if you want to build a business that is taken seriously, I wouldn't start with a claim to grow hair.

Hushme – Voice Privacy Mask

http://gethushme.com

The Hushme voice privacy mask is a ridiculous solution to a common problem that works just as advertised. It is a mask (as featured on Bane, Batman's nemesis) you strap on to keep your cell phone conversations private and clear in noisy or quiet environments. It connects to your phone as a Bluetooth headset. The earpieces work just like you would expect. The mask, however is sound insulated and wraps around your face to keep your mouth inside an isolating sound chamber. It's quiet in there, so you can have a normal conversation and the person on the other end of the phone call doesn't hear all the noise around you. Meanwhile, the people lurking around you can't hear you or read your concealed lips. But what about when you're in a quiet place and people are eavesdropping? No problem. You can select from several masking noises and those are played from speakers on the outside of the mask. You can choose from Darth Vader sounds, monkey sounds, minion sounds and several others. You can also use it as a Bluetooth speaker. It works very well, you just have to have a lot of self-confidence.

BeyondZero – Freeze Liquor

https://www.bzice.com

A drink "on the rocks" isn't really cold if you drink it too quickly, but it gets watered down if you take your time. You really need frozen alcohol, but it freezes at -173 degrees Fahrenheit. Well, that is no longer a problem. The BeyondZero is a special freezer that lets you freeze liquor. Now your drinks can come in interesting shapes, generate fog AND not get watered down. Don't touch the ice with your tongue.

Rocking Bed

https://rockingbed.com

The Rocking Bed is a full size adult bed that literally rocks. Not the cool kind of rock with shredding guitars (that might be a little hard to sleep through), but like baby cradle rock (which it turns out is also hard to sleep through). Apparently, the inventor thought of this when he was on a cruise ship

and slept really well. I tried it and can't imagine it improving my sleep. I suspect he had his "great sleep" after a couple of BeyondZero drinks.

Conclusion

Well, you've reached the end of the report. You were probably supposed to be doing something else with your time, so I'll let you get to your explaining. I'm off to my rocking bed.

You can reach me at my work (clarke.stevens@sjrb.ca) or personal (cstevens63@yahoo.com) email.