

The image shows a large exhibition hall at CES 2018. A massive cylindrical projection screen dominates the center, displaying a vibrant, abstract, purple and pink digital pattern. Below the screen, a crowd of people is gathered, looking at a futuristic white car. The background features other exhibition booths, including one for Toyota. The overall atmosphere is high-tech and innovative.

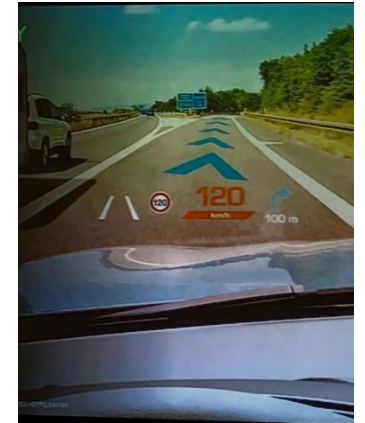
CES 2018 (v.1)

Chick Foxgrover
EVP, creative technologies & innovation

4's

CES 2018 – Year of convergence/integration

- Physical - Virtual Convergence
- Intelligence, Integration and Interoperability: creating an age of composable services
- Interfaces for intelligent computation in more contexts
- Advanced tech: Steady improvement, clearer use cases, closer to reality
- Revolutionary potential but just getting started: Cognitive and AI, Blockchain, 5G
- Experimentation is the path to innovation



CES 2018 – Year of convergence/integration

CES is a (very big) trade show for and aimed at the ecosystems of suppliers, designers and manufacturers of consumer electronic products of all kinds.

It is not especially about marketing, but marketers too have followed on, to divine the future of communications through the lens of existing and new devices with which we are enthralled. **Consumer technologies are such an important driver of economic effects throughout our lives today.** CES is an important signal as to where we are headed as consumers and a society.

Our media habits have been so transformed by the PC, the web, and the mobile phone, that we monitor each twitch of the digital device and platform ecosystem for clues to possible new

behaviors that might contribute to a disruption in our media universe, and also more positively to better more engaging marketing. And **keep our client's brands present in consumers minds as new digital addictions arrive.**

The bigger context of technological advance of course is about the effort to unlock value, for the economy, for society, for individual consumers.

For marketing communications professionals, CES gives us a change of perspective and longer view. While on the look out for the next big thing, gadget or medium, it's an opportunity to change perspective.

CES is full of unproven but inspiring experiments and new human machine interfaces.

Marketers too must commit to more experimentation. **CES can direct us to where we should invest our time and imagination.**

CES 2018 wasn't about any specific product category but about how **the physical and digital world are converging** through more detailed digitization of reality, and new ways of integrating information into the physical world.

Use cases are emerging in many enterprise domains and technologies composed in new solutions available through mobile devices, voice interfaces, visual AR overlays and more.

CES 2018 – Year of convergence/integration

CES is still about gadgets even when the gadget is thousands of pounds. Technology conference speakers are now fond of calling **cars mobile devices**.

But also our needs and intentions are exercised and experienced through the software that runs on our gadgets, apps, social platforms, etc.

The software, the interface layer, is at the center of our focus now. It is the **gadgets that have to keep up and strive to be a part of digitally-driven life**.

And the software begs for a **unifying operating system**. It will be the operating system that will be the gateway to integrating digital life and the reason Google and Apple can still catch up with Amazon.

We can see this already in the smart speaker market where non-captive brands like Sonos will speak Alexa, Google Assistant and Siri giving us a glimpse into the nature of the near future competitive market.

The overriding theme for 2018 was a very adult focus on **the software and device designs that enable integration convergence and governance**:

- Voice interfaces that call on numerous other services to provide answers
- Edge computing bringing computing to the device level to take advantage of the fast wireless technology rolling out in the next few years (5G)
- Blockchain promising to bring strong security and privacy digital life

- VR, AR that allow physical space to be a canvas for information
- IoT driving smart homes, smart shopping, coordinated autonomous transportation, all connected a level up into smart cities
- AI cognitive systems managing the scale and pace of automation

All working towards a future of better human well-being through the promise and responsibilities of human-machine partnerships.



CES 2018

Brands in the age of "composable" products and services

New devices – new interfaces – new experiences.

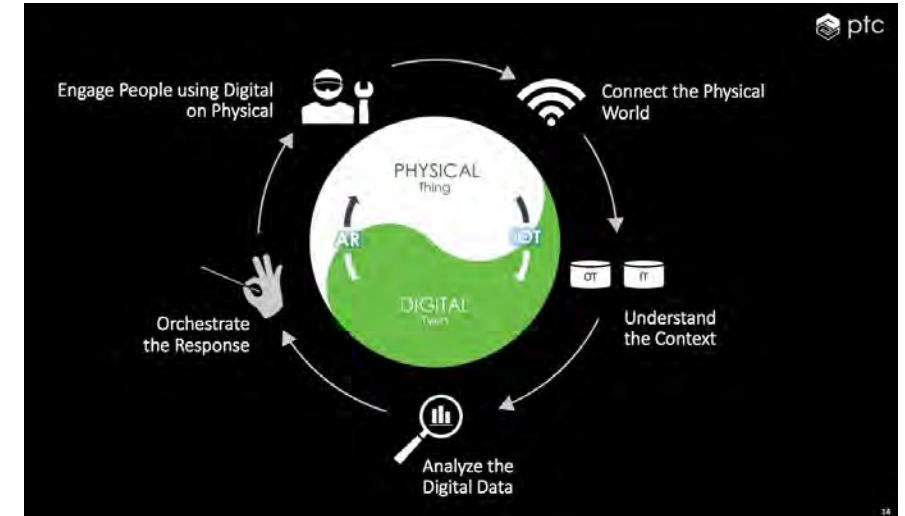
Although the digital age has paradoxically made us time-starved, many new technologies promise to relieve us of many time consuming everyday tasks like driving, chores requiring direct attention to supplies and groceries, even choosing products, services and entertainment.

The trick for **brands will be to be seen as contributing to these convenience delivering utilities.**

New interfaces like voice activated systems are direct, conversational and immediate that will require new design strategies to access the opportunities they allow.

Brands may find new connections through sounds, distinctive visual cues, and utility plug-ins.

"Embeddable" and "connectable", and "composable" may be new core brand attributes for the physical-digital systems life styles of the near future.



CES 2018 -Take-Aways for Agencies

- New interfaces that are intentional, multi-sensory and/or prediction-driven like Voice and others like Haptical/Touch, and Gestural through AR and VR, are driving innovation and product ecosystem convergence and will be critical to new forms of creative brand communications.
- Use case for advanced technologies are developing today in professional and industrial gaming and education. **Creativity in information design, presentation aesthetics will be vital** and will become the building blocks of persuasion marketing and brand-building differentiation in the future.
- More direct experience with new tech and consumer oriented tools will create opportunities for social and casual entertainment.
- **Voice interfaces are enabling direct experience of being in-the-loop** in the increasingly connected environment of systems formerly known as "home", "car", "office", "travel" etc.
- AR, VR and voice enable virtual overlays bringing the virtual computed world into the physical world, any space can be a blank canvas. Creative skills for new tech, 3D interactivity and other experience designs are already scarce. Look for opportunities to develop and exploit expertise in promising new technologies and media.
- In the past, marketing communications agencies committed little time or investment to the experimental and development side of new technologies. Investing now in the arts of experience design will bring more creativity and marketing ideas earlier into the life-cycle of new technologies.



DAQRI Design guidelines and tools

Voice technology



Sonos One – with Alexa and soon others

Last year voice assistant tech surprised everyone with **Amazon Alexa's ubiquity at CES 2017** and at CES 2018 that trend continued with more voice-integrated products of all kinds: toilets, AR glasses, thermostats, showers, mirrors, in-car assistants, everyone's speakers, etc.

Not to be outdone again, Google bought out every available space to present "Hey Google."

Voice is cited (along with security) as the biggest driver of smart home technology and this demonstrates the desire and need for a unifying interface to the connected world of intelligent machines.

But it is still very early days for a technology typically used for a limited set of discrete tasks. Voice assistants must handle and deliver information sequentially and while this is really helpful when you need your hands and eyes for something else, it can be a frustrating experience beyond very specific tasks.

Another conversational interface, chatbots, are looking like failures with Facebook shutting down its "intelligent" assistant M, which required a lot of human intervention. It may be sometime before conversational interfaces get sophisticated enough to be very intelligent beyond a well-known sequence of tasks.

But **the voice-app model, like Alexa skills** that a number of marketers have tried, may in certain contexts **allow for helpful brand experiences that will create positive relationships.**

In the meantime, the brands that own that experience are fighting for dominance and the manufacturers like Sonos are thinking their success may lie in being open to all major players. The operating systems own that relationship first, and brands will need to know how to find the integration points in the developing interaction.

VR: Moving forward

A unique experience medium with strong mental and emotional engagement, VR platforms are still maturing. More experiences are working their way into the world.

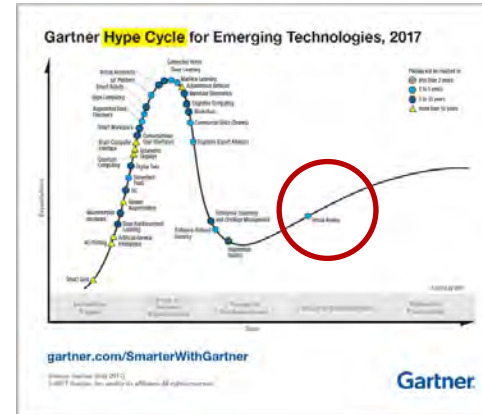
Challenges:

- Consumer dropoff after few uses (like first wave of wearables)
- Isolation, no social/sharable experiences
- No entertainment or gaming hits to drive mass adoption

Encouraging signs:

- Arcades
- Social shopping
- Training at work
- Facebook Spaces potential
- 360 cameras driving UGC
- HTC Vive Tetherless headset

Now on the Gartner plateau of enlightenment!



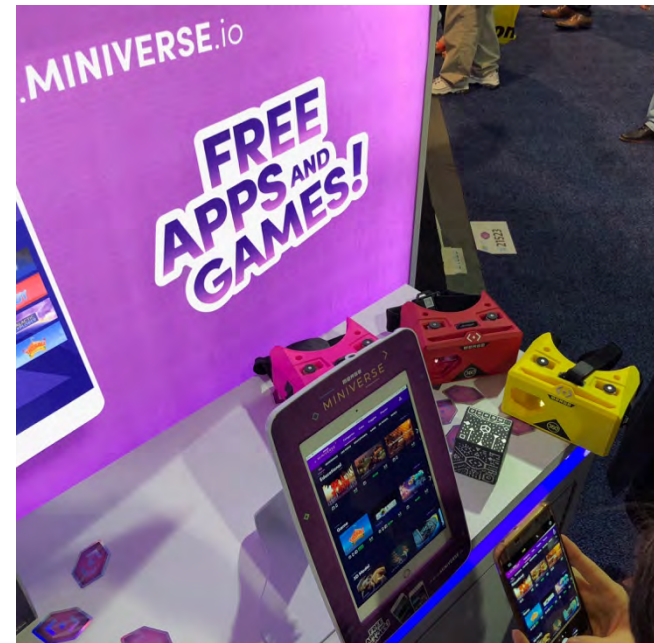
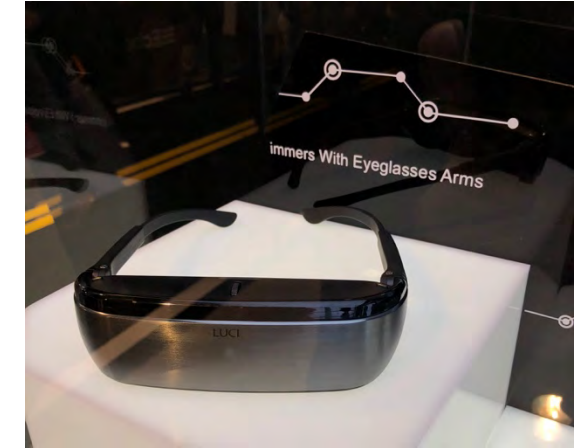
The VOID - arcade "holodeck"

Village in China for mixed reality startups



HTC Vive headset with Neurable brain computer interface

VR: New headset designs and use cases



AR: Poised for growth

- Apple’s ARKit and Google’s ARCore have made AR native up to a billion mobile phones
- Human in the loop for IoT

“AR creates business value in two broad ways: first, by becoming part of products themselves, and second, by improving performance across the value chain—in product development, manufacturing, marketing, service, and numerous other areas.”

Jim Heppleman, President/CEO PTC speaking at CES 2018

USE CASES ACROSS THE VALUE CHAIN					
DESIGN	MANUFACTURE	SELL	SERVICE	TRAIN	OPERATE
Collaborative Design Review	Maintenance Work Instructions	Virtual Product Companions	Service Manual & Instructions	Job-specific Training	Head-up Display
Digital Design Review	Performance Dashboards	Augmented Brand Experience	Service Inspection & Verification	Safety & Security Training	Augmented Operator Manual
Augmented Interface	Operator & Assembly Work Instructions	Retail Space Optimization	Remote Expertise	Expert Coaching	Augmented Interface

MIA: Magic Leap



Vuzix AR headset with Alexa



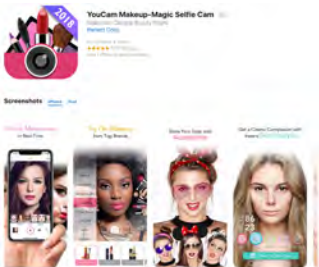
AccuVein



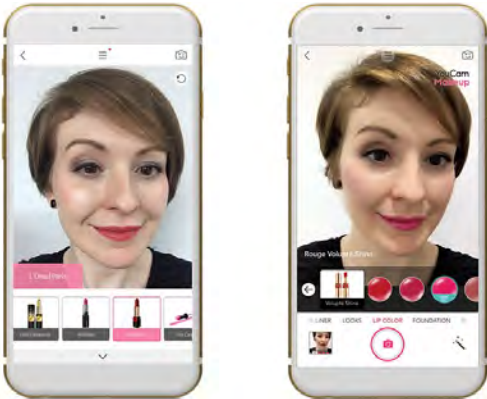
Heads-up driving directions overlay



Better ways to manage machinery in the factory



L’Oreal smart mirror app



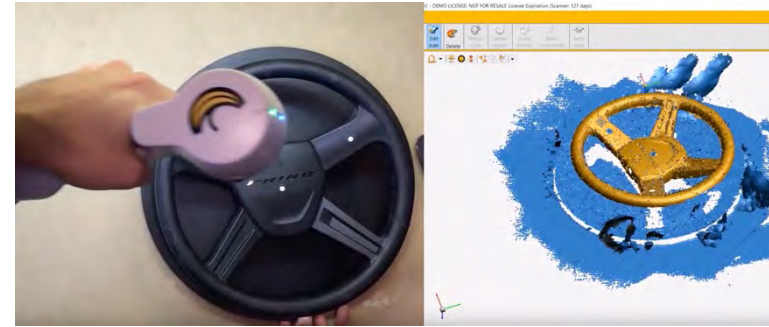
Digital Twins

Digitization of
the physical
world comes
back around
again through 3D
printing

The world of
"digital twins"



Startup Peel 3D
volumetric scanner
within reach at \$6000



Lulzbot 3D printer
making parts for
more Lulzbots

Announced at CES,
Intel Studios
extraordinary
volumetric capture
space



A 3D camera for your
phone

Connected smart home environments: IoT comes to life and voice becomes the interface of the everyday

Samsung, Sony, LG, home furnishing firms and many startups demonstrated connected home environments and appliances.

Voice and app controllers figured prominently, with Alexa in the lead, Google making a good show. Microsoft Cortana showed up. Samsung with its very successful phones, TV and appliances presenting their own eco-system based on SmartThings and AI assistant Bixby.

Microsoft Cortana Thermostat from Johnson Controls



Samsung Project Ambience



Samsung connected spaces exhibits

The CES Auto Show

The new futuristic car exhibits at CES are always an exciting part of CES, perhaps more so for a New Yorker with a 18-year-old car.

The convergence force is strong in the auto industry.

An industry looking at the very possibility of the end of car ownership is furiously innovating, much of the **advanced technology** being developed today going into prototypes and experiments in autonomous transportation of all kinds.



Nissan



Mercedes

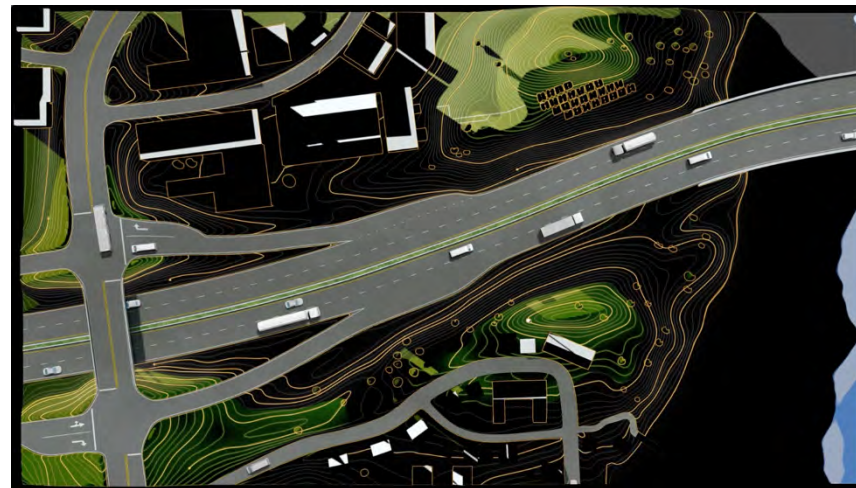
From inside the car to the traffic space around the vehicle, integrating proximity and bio sensors, visual recognition, 5G wireless communications, even brain interfaces for drivers, the real-time digitization of moving in space.



Toyota

AUTONOMOUS DRIVING: Monitoring the environment

Cars see around them through
computer vision



Cars communicate with each other
and the traffic through sensors and
"cooperative driving" – showing
Honda Swarm and Volvo

AUTONOMOUS DRIVING: Monitoring the environment inside the car

Harman "Mood Roof"



Guardian in-car passenger monitoring



Nissan demonstrated futuristic brain-to-vehicle interface. Another example of augmenting human abilities but far from ready

New TVs

Unbelievable 8K resolution was shown by a number of manufacturers and 4K TV prices are falling and selling well. TV can now produce 90% of human perceptual range. OLEDs produce real blacks that make a real difference.

TVs now though are so thin and beautiful that they really do enhance their surroundings. If you haven't looked lately, now is the time to upgrade.

But the story coming out of CES 2018 was **mostly about TV integration with the smart home and voice interfaces.**

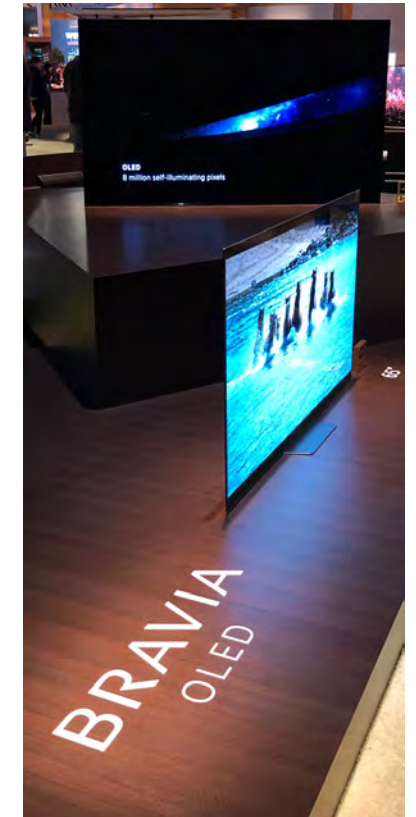
Samsung 8K



Beautiful TCL TVs



LG 8K

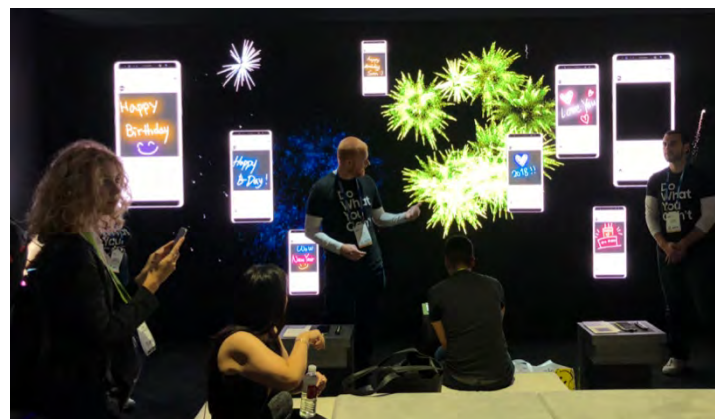


Sony OLED

Best exhibits at CES



Extraordinary Samsung coordinated video wall experience



New Netflix TV show "Altered Carbon" space on the show floor, looked like a real exhibit

Best exhibits at CES



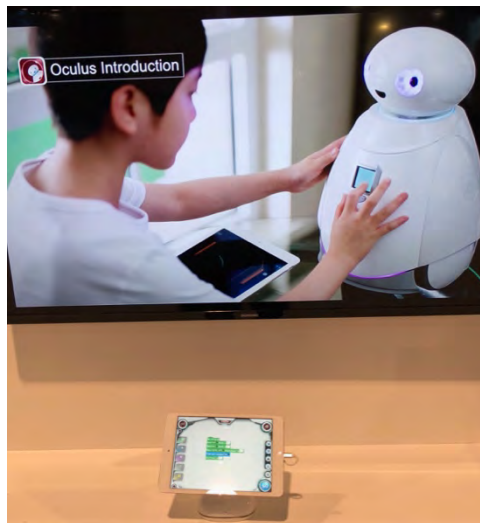
Beautiful curved TV wall from LG



Intel experiences

Robots!

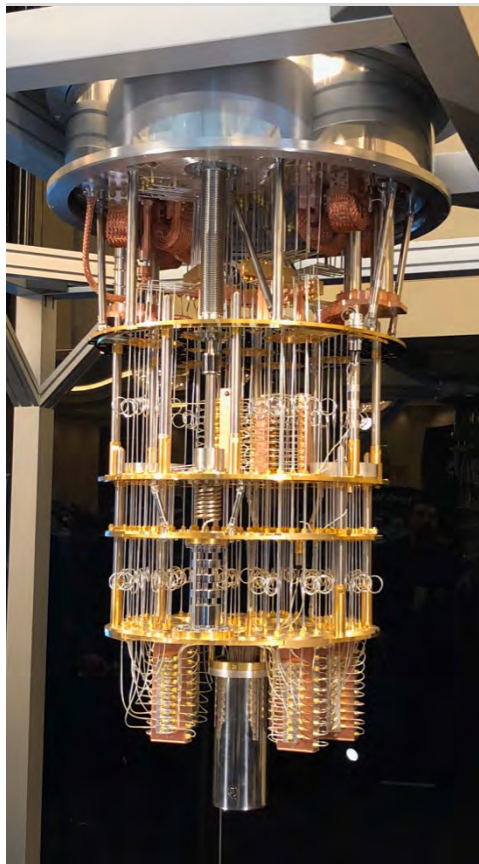
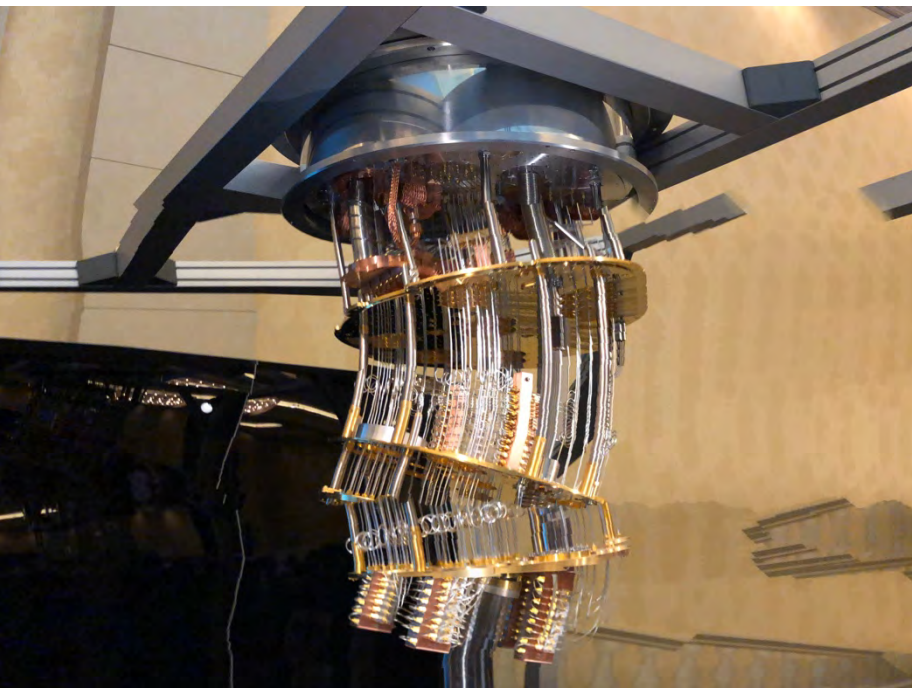
Games, Work Learning, Relationships



IBM Q Quantum computer

Quantum computing, in the press now, boasts strange powers to manage extraordinarily complex math that has the reality-bending power to bring many of the dreams we have for AI, data sciences, security, etc. to life.

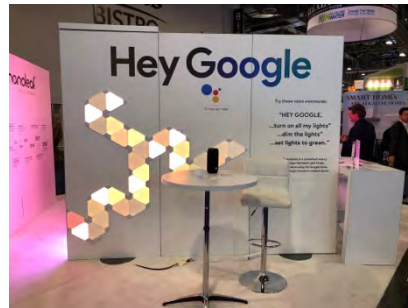
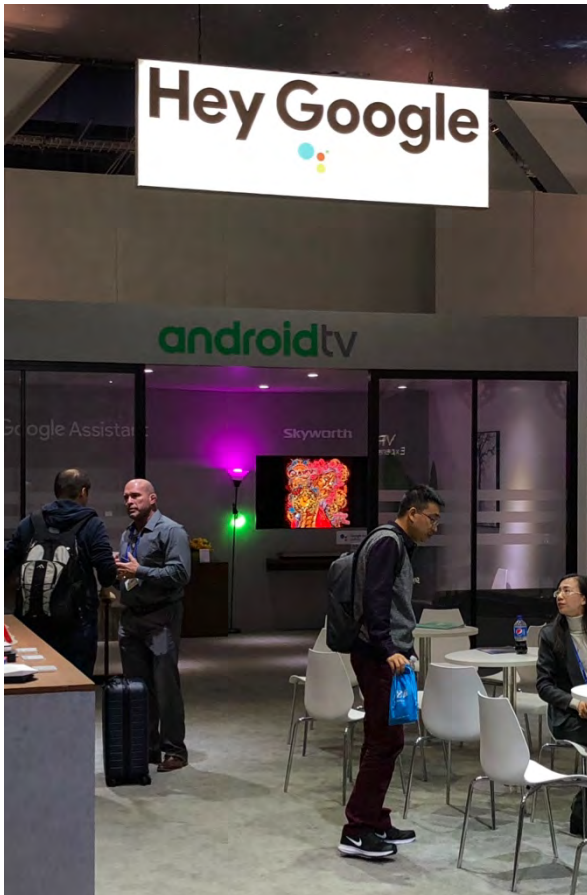
IBM brought its current design to CES for us to see along with a number of their uber nerds to explain it.



Google buys out CES in 2018

Last year at CES, Amazon Alexa surprised and ruled with announcement of many partnerships in many categories.

Google took no chances that would happen this year and "Hey Google" signs were everywhere.



Recode / Dan Frommer



All kinds of Drones



Random CES Goodness

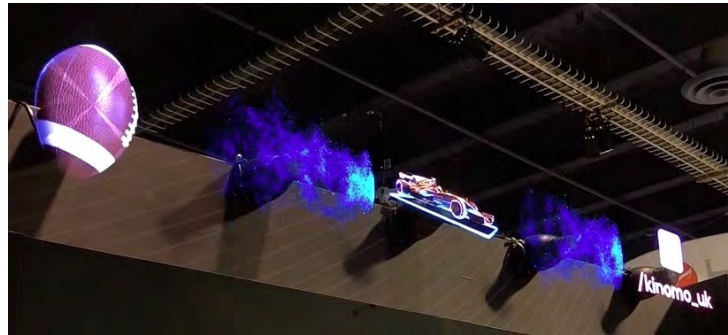


Electric scooter folds for stowing and seat becomes roller case



Garmin Alexa for cars

VR-TimeTravel
Experience the past with VR tours
Think "Field trip to Mars" for everyone.



Kinomo Holograms

Flir Thermal Imaging
<http://www.flir.com>



Razer Project Linda. Gaming mobile phone becomes trackpad for laptop

CES 2018 - another year ends



See you next year!