

SAND CHERRY powered by real results

CES 2018 – An Overview

January 9-12, 2018 Las Vegas, NV



The five most important trends you need to know from CES 2018 in Las Vegas, NV.

• Voice UI – Hey, Google!

• For the first time, Google came to CES and attended in only the way Google can – with force. Google Assistant or Amazon Alexa based voice UI integration was showcased in the vast majority of major device categories at CES. However, Google still trails in the voice assistant market to Amazon Alexa, which has almost 70% of the smart speaker market share; Google's significant physical presence at the show clearly demonstrated the company's commitment to closing this gap in 2018.

• The Smart City? – Future of IoT

• Smart Homes and the Internet of Things have been around for a while, but CES 2018 saw a spike in other 'smart' areas of living – <u>autonomous cars, smart cities</u>, and the goal of a fully connected life.

• Augmented Reality or Virtual Reality?

- The uses of VR headsets continues to grow, especially in <u>company training applications</u>, but this year had a jump in Augmented Reality overlaying screens, images, and apps on our real world views.
- Artificial Intelligence
 - Data, data, data. It's no good unless it can be used effectively. Al and machine learning, or the ability to make calculations as humans do, <u>need more data</u> to become effective in the many devices that are integrating Al into their algorithms.
- Where is 5G?
 - The technology is here, so why isn't 5G making a bigger splash with the connected world at CES 2018? It appears the <u>hardware is simply not ready yet</u>, but CES 2019 could prove to be the breakout year for 5G.

The dominating trend for 2018 was the rise of voice assistants as a user interface.

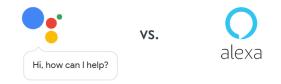
Sources: Appendix Slide



Google highlighted the importance of voice command integration in its CES debut.

Highlights

- "Hey, Google!" Google Assistant was plastered on advertising and displays around the convention to directly challenge Amazon Alexa in voice assistant race.
- However, they are still chasing the market leader, <u>Amazon Alexa</u>, as the voice integration of Alexa in devices was still extremely prevalent.



 Samsung's continued to push its Bixby platform with entry points in the <u>home via</u> <u>refrigerators and televisions</u>, while Microsoft's Cortana and Apple's Siri were notably absent from the floor.

Industry Insights

- DISH Network continued the voice assistant trend <u>by announcing Google Assistant</u> will be integrated into their devices for hands free viewing.
- Roku debuted the Roku Entertainment Assistant and integrated their voice assistant with Chinese TV company TCL under <u>their</u> <u>new licensing program</u> to gain customers over developing traditional Voice Assistant speakers.

CTAM Video Series

CTAM's Leslie Ellis interviews Patti Loyack,VP of IP Services at Comcast, on how Xfinity is <u>partnering to tackle the fragmentation problem</u> of the various voice assistant platforms that are controlling the connected Smart Home world.

Voice as a primary UI was integrated in almost everything at CES 2018.



The Internet of Things pushed beyond our homes to cars, cities, and full connectivity.

Highlights

- Connected cars were everywhere and the features ranged from simple improvements, like <u>Waze integration into Ford displays</u>, to some out of the box ideas like the <u>Toyota e-</u> <u>Palette</u>, a self driving car that merges Uber/Pop-Up Shop/Self-Driving into a Sci-Fi dream.
- Full connected living was discussed in this great CNET panel on <u>Smart</u> <u>Cities</u>.



 Industry consortium <u>OCF</u>, a leader in IoT standards, was present to demonstrate just how important the <u>interconnectivity of these</u> <u>devices</u> is in our connected world.

Industry Insights

- Comcast announced they will put smart home automation access into the hands of <u>15 million</u> <u>Xfinity customers in early 2018</u> at no additional cost, potentially transforming the smart home market and IoT adoption.
- With Comcast's acquisition of Stringify in 2017, they are looking to help simplify the smart home experience for customers who will average <u>50+ connected devices in the</u> <u>home by 2020</u>.

CTAM Video Series

Don Dulchinos, President of Smart Home and Away, discusses how the <u>full customer journey</u> of home, to car, to the city as a whole is integrated closely with the connection and content the cable industry continues to provide.

Fragmentation, solving for many devices on various platforms, is a hot topic with IoT integration.

Sources: Appendix Slide



Augmented Reality emerged as a cost effective addition to the Virtual Reality world.

Highlights

 Augmented Reality, or a composite view of our technology and user reality, continued to make a leap forward with the <u>Vuzix Blade AR</u> <u>Glasses</u> with Alexa integration.



 AR gained traction at CES 2018 as a customer friendly alternative to expensive and clunky VR headsets as companies like Apple, Facebook, and Google all met with suppliers of AR wearables.

Industry Insights

- Far beyond just gaming applications, companies are using Virtual Reality to train <u>everything</u> from surgery to working on an oil rig.
 - See how retail giant Wal-Mart is using <u>VR to train</u> <u>customer service</u> representatives in tough environments such as Black Friday.



CTAM Video Series

Check out this <u>video</u> to see Duncan Potter – SVP of Global Marketing for ARRIS talk about what we aren't thinking about in VR v. AR like using the technology for quality of life issues such as pain mitigation or anxiety relief.

How can you use Virtual Reality for internal training purposes?



Machine Learning and AI are transforming the effectiveness of the data we produce.

Highlights

- Artificial Intelligence is always growing. In fact, over 70% of our YouTube suggestions are based on AI. At CES, it was being worked into everything from <u>laundry folding</u>, to your <u>fitness workout</u>!
- LG shows how seamless this application can be with their ThinkQ AI homes.



Industry Insights

- IBM Watson is using AI for video enrichment, metadata tagging, and better recommendations in search and discovery.
- See how data is utilized in advertising in this <u>great interview</u> with CEO of Brightline, Jackie Corbelli, on their new <u>DataCast</u> to get an accurate digital measurement of advertisements across all screens and how the FAANG (Facebook, Amazon, Apple, Netflix, Google) companies are performing in television.

CTAM Video Series

CEO of Nest, Marwan Faraz (former CTO at Charter and Adelphia), talks about how <u>Nest is</u> <u>tapping into Google's massive AI</u> and machine learning databases to always keep their growing suite of home devices learning.

Do you have your data working for you in a meaningful way?





5G promises a significant shift in consumer connectivity, but is it here yet?

Highlights

- 5G, or fifth generation wireless, was <u>expected to make a big splash</u> at CES 2018 with networks set to go live by 2019.
- However, the <u>hardware was not yet ready</u> for display at CES 2018, and the coming year will be critical as the roadmap for 5G continues to unfold.
- The advantages of 5G continue to be appealing, including better reliability, high bandwidth, and as Qi-Lu, COO of Baidu states, the <u>low-latency will be critical</u> for the rise of the autonomous car that was so prevalent at CES.
- See what CTO Hans Vestberg of Verizon had to say at the <u>5G panel at CES</u>.

Industry Insights

 Still wondering how broadband and 5G will interact with one another? <u>This Forbes</u> <u>Bytes Chat</u> breaks down how cable companies and wireless carriers will interact in the age of 5G.



CNET Video Series

Car manufacturer, Byton, unveils their entry into what might be the largest market for 5G connectivity – the automotive industry. They released their <u>EV concept car for release</u> in late 2019, and it looks impressive.

2019 promises to be a huge year with 5G – as a company, are you prepared?

Sources: Appendix Slide



List of Sources and News Regarding 2018 CES Coverage

VIRTUAL ASSISTANTS	loT	AR v.VR	AI & MACHINE LEARNING	5G
<u>CTAM – Xfinity</u> <u>Fragmentation</u>	<u>CTAM – Connected</u> <u>Living</u>	<u>CTAM – Arris SVP</u> <u>Video on AR</u>	<u>CTAM – Nest CEO</u> <u>on Google Al</u>	<u>CNET – Byton 5G</u> <u>EV SUV Concept</u>
<u>Google v. Alexa</u>	Autonomous Cars	<u>Virtual Reality v.</u> Augmented Reality	Artificial Intelligence & Machine Learning	<u>CNET – 5G</u> <u>Predictions</u>
<u>CTAM – Bixby</u> Integration	Smart Cities	Vuzix Blade AR	IBM Watson & AI	<u>5G Hardware</u>
DISH & Google	<u>Waze in Fords &</u> <u>Toyota e-Palette</u>	<u>CBS – Future of VR</u> and AR	<u>CTAM – Digital</u> <u>Advertising</u>	<u>5G Panel</u>
Roku Voice Assistant	Xfinity Home Automation	<u>Wal-Mart Training in</u> <u>VR</u>	<u>DataCast</u>	Low-Latency of 5G
	50 Connected Devices by 2020	AR Wearables	Laundry Folding & Peloton Treadmill	<u>Forbes – Bytes Chat</u> <u>on 5G v. Broadband</u>
	<u>OCF</u> <u>OCF at CES</u>		LG ThinkQ AI Home	



USA Tel. 1.303.933.9494 Fax 1.303.948.7788 info@sandcherryassociates.com EUROPE Tel. +36.70.458.4858 Tel. (US direct) 1.303.933.9494 x715 europe@sandcherryassociates.com

Prepared by Sand Cherry Associates | Proprietary & Confidential | © 2018 Proprietary with All Rights Reserved

WWW.SANDCHERRYASSOCIATES.COM