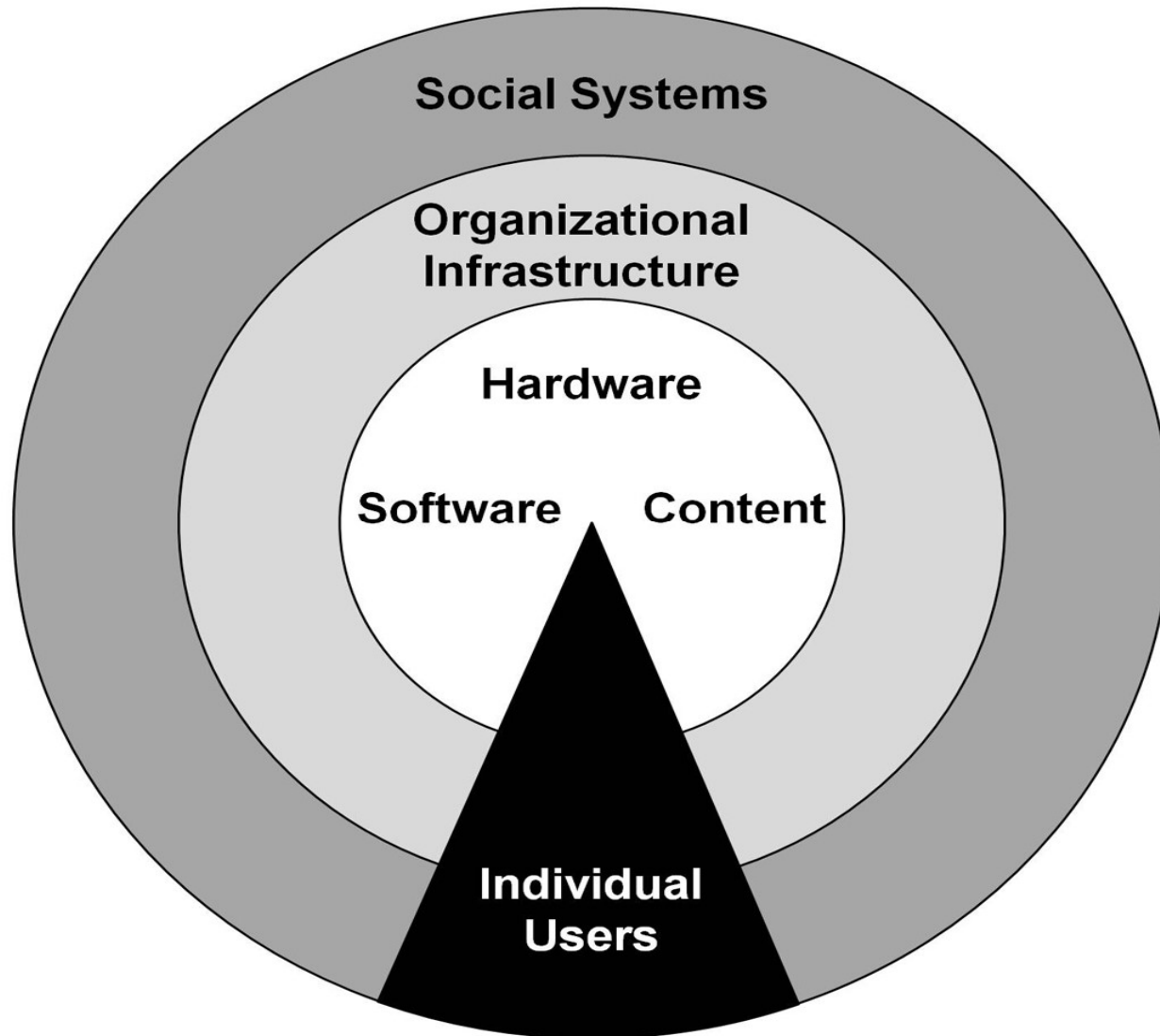


# 2019 Communication Technology Update

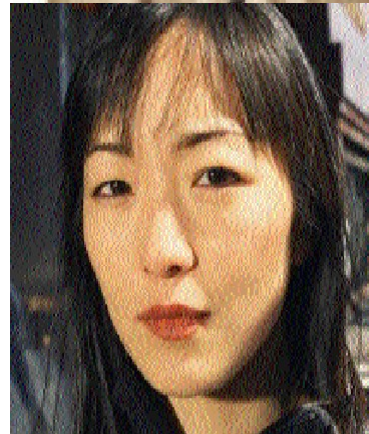
August E. Grant, J. Rion McKissick Professor of Journalism  
University of South Carolina

TFI Technology Conference, January 24-25, 2019, Austin, Texas

# Communication Technology Ecosystem



# Focus on Users

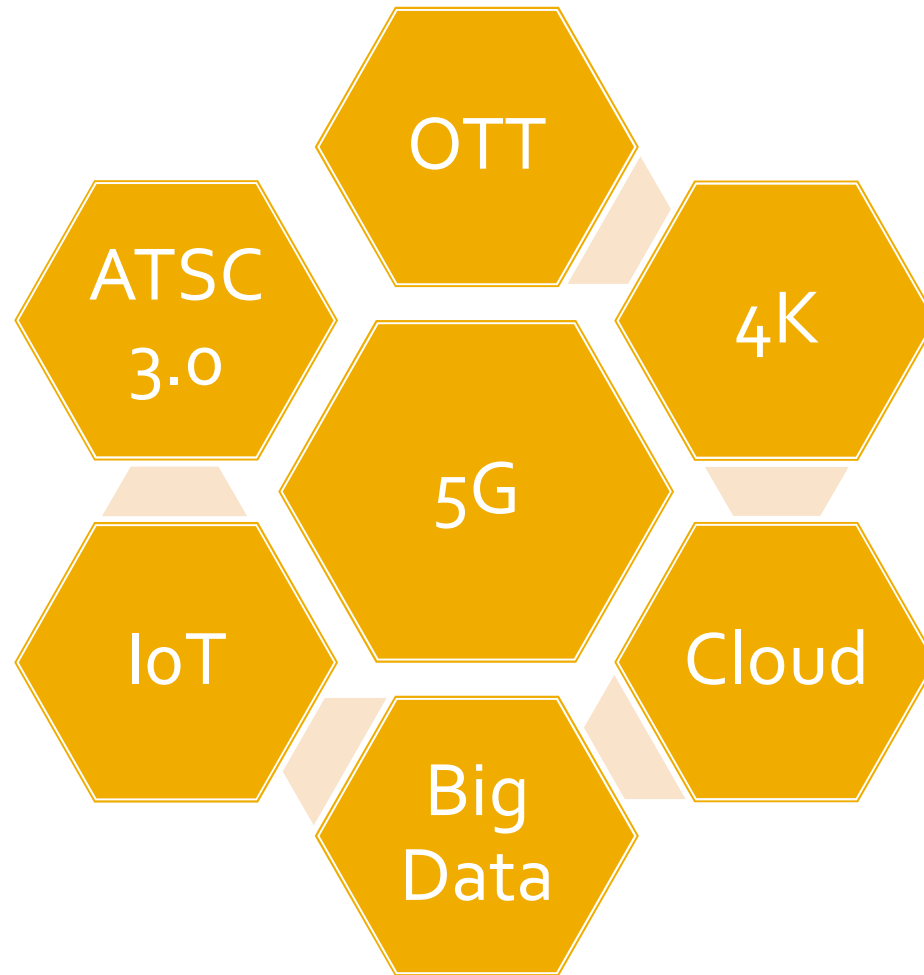


**Most Powerful Force in Human  
Behavior**

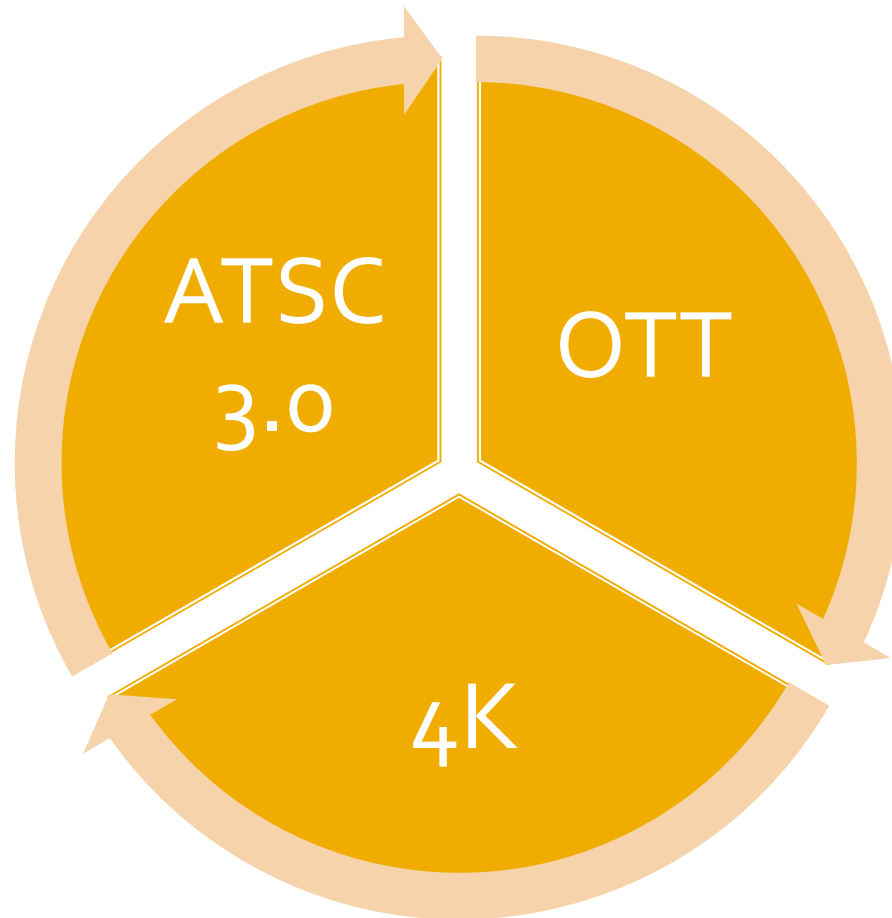
**Habit**



# Everything is Connected



# Let's Start with TV...



4K w/ HDR



# ATSC 3.0

- Delivery of 4K
- Up to 120 fps
- HDR
- Enhanced audio
- Mobile television
- Need for bandwidth
- Broadcast transition
- Targeted Advertising





# ATSC 3.0 Challenges

- Incompatible with current TV
  - Separate transmission channel needed
  - User awareness
- 
- BUT great revenue opportunities with digital services and targeted advertising

# OTT

- Established services



- Proposed services

- Warner Media
- Disney
- Comcast

And lots more....



Cord cutters vs.  
Cord hoarders

# Next waves in TV

- 8K
  - Primary a display technology
  - Will be used extensively in digital signage
  - Challenge for networking
- Frame rate
- HDR

# Audio Technologies

- Consolidation in distribution
  - Sirius/XM buying Pandora
  - Iheartmedia emerging from bankruptcy
    - Liberty Media as suitor?
- Audio remains ubiquitous

# Video Games

Good news, bad news



# Video Games: Good News

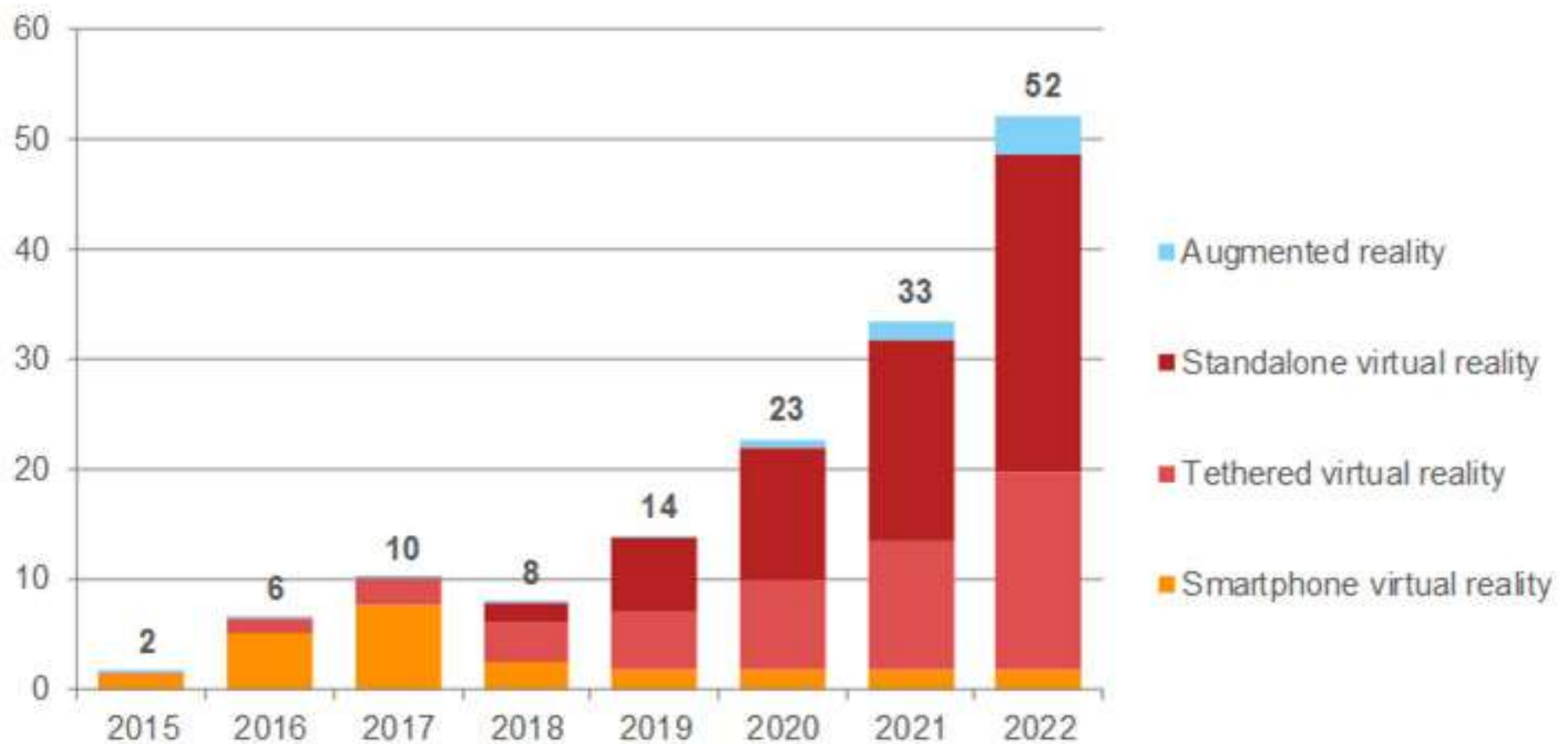
- 2018 revenues:  
\$43.4 billion

# Video Game Revenue sources

- Game purchase
- Subscription/in-game purchase
- Advertising
- (Hardware)

# Video Games: Bad News

Millions of units



# A closer look...



# Virtual Environments

- Virtual Reality
- Augmented Reality
- 360° video

# Virtual Reality



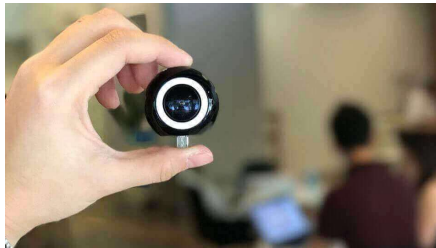


# Augmented Reality



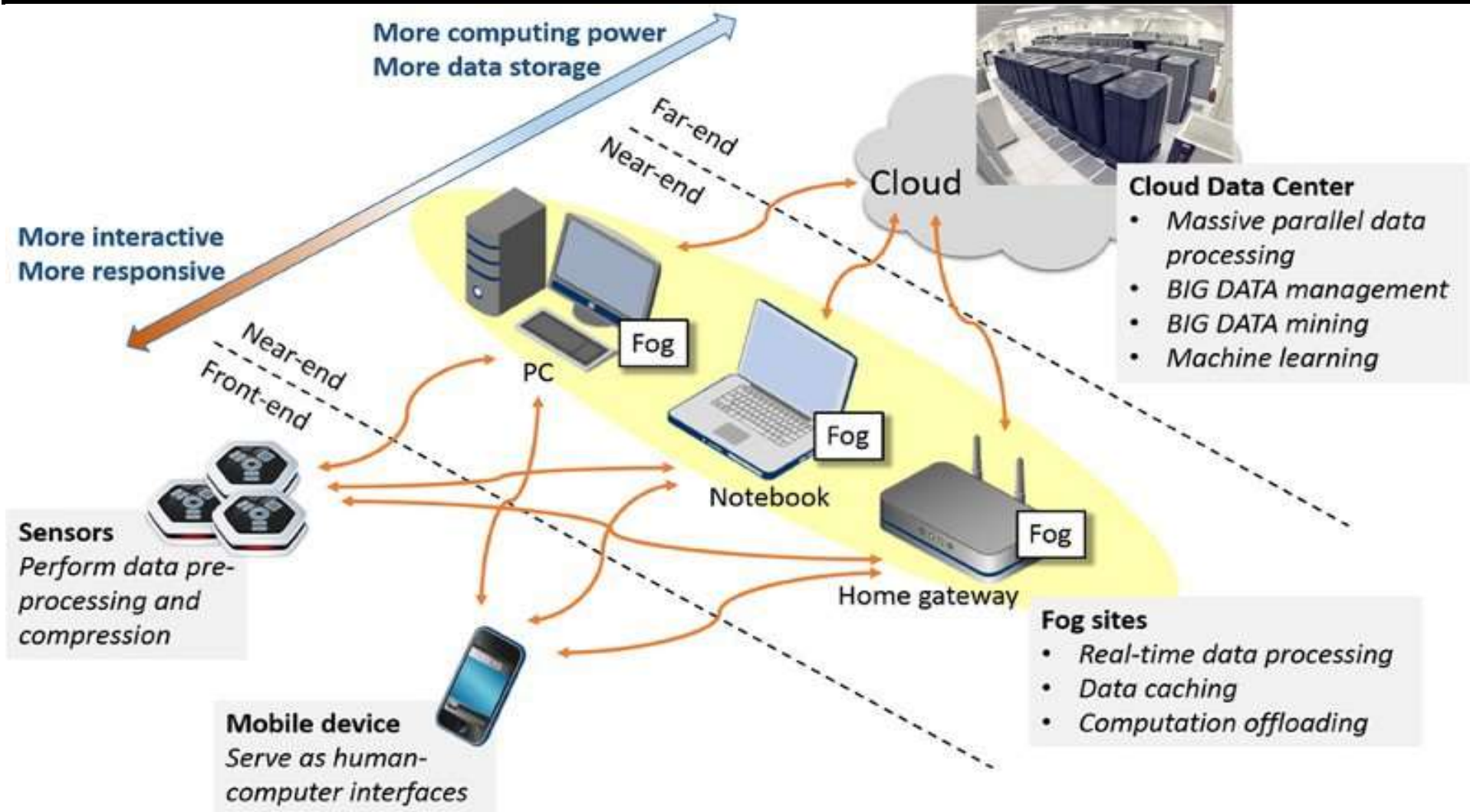
Remember Pokémon Go?

# 360° Video



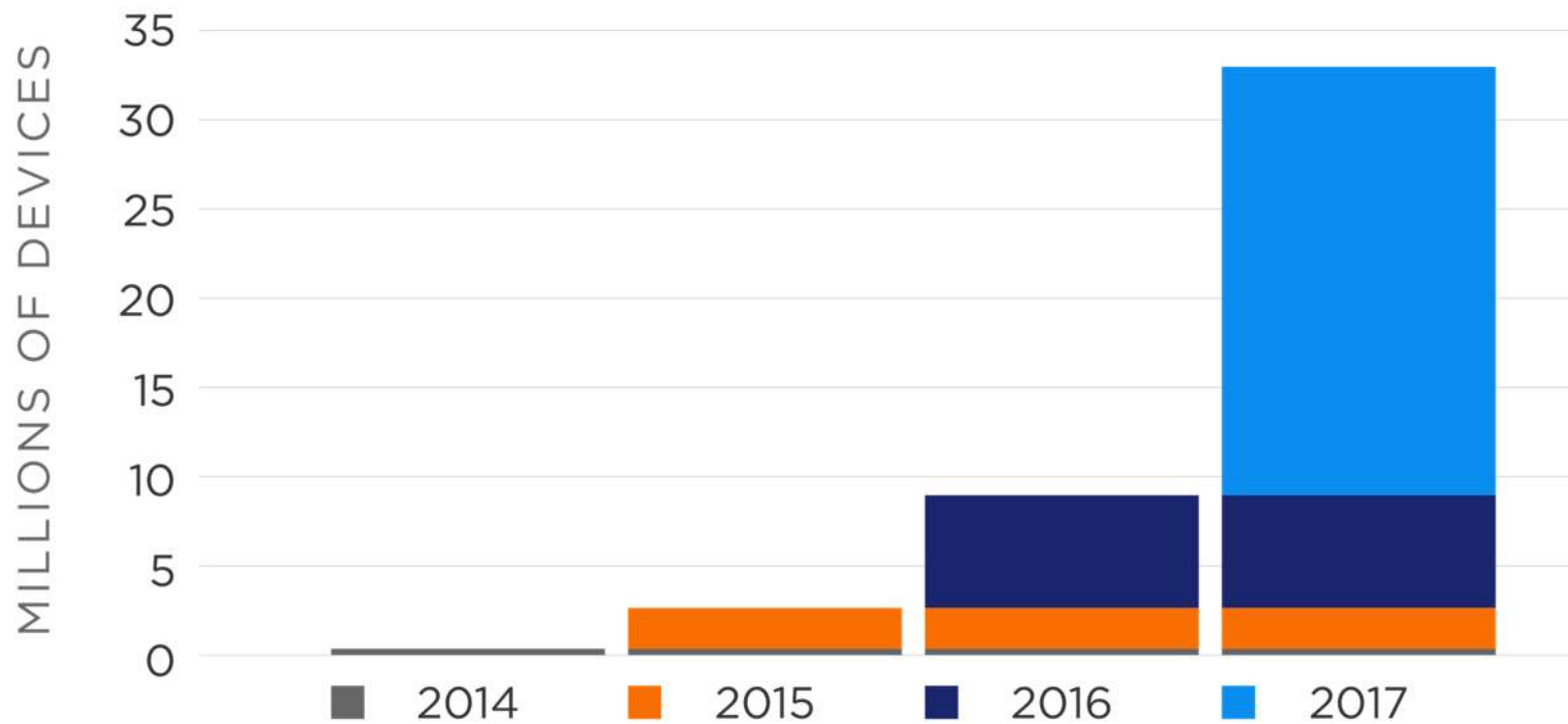


# Cloud vs. Edge Computing



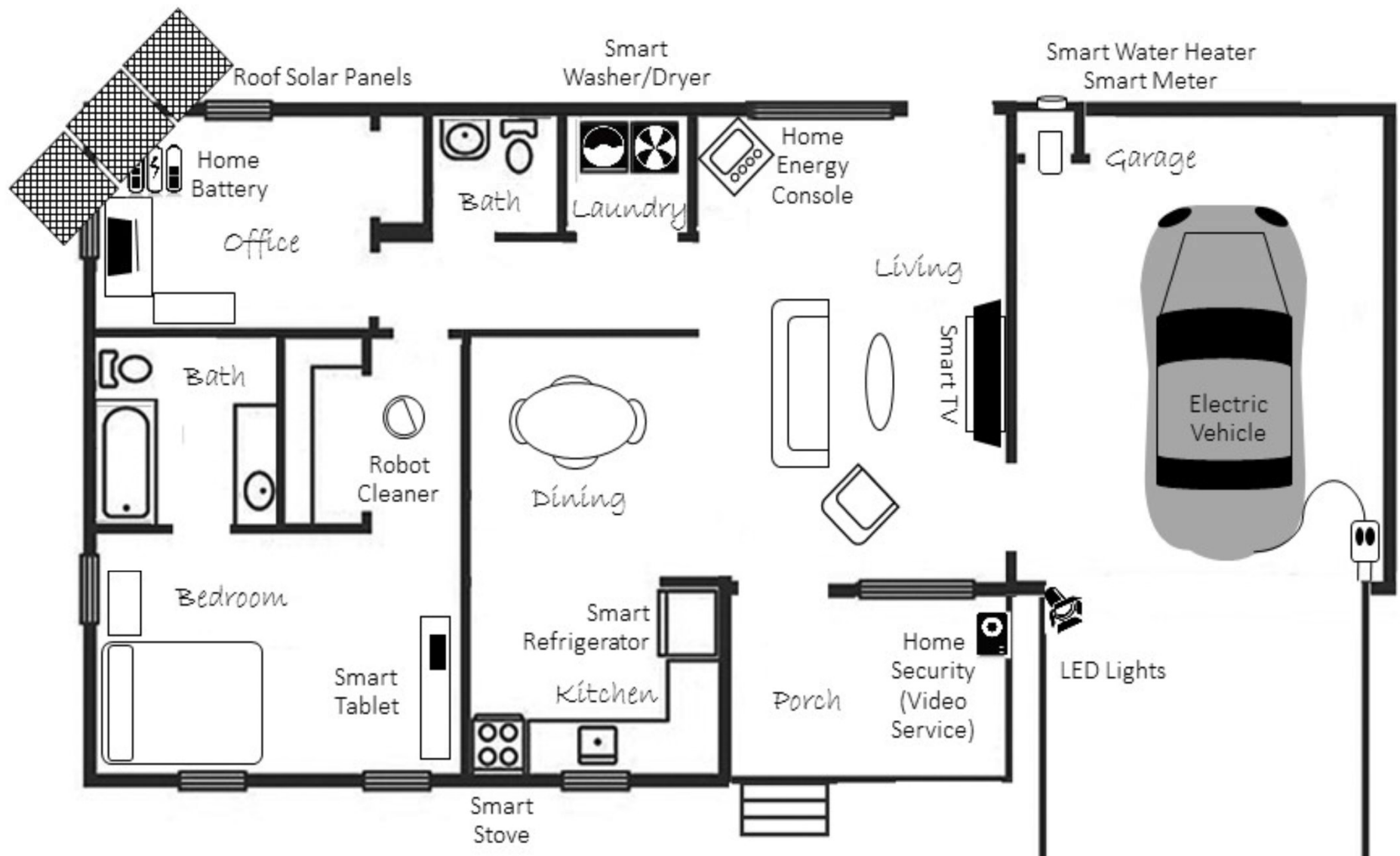
Source: Hackernoon.com

# Personal Assistant Adoption



VoiceLabs Analysis combined with research from CIRP, KPCB and InfoScout

# IoT=Smart Houses



# Personal Assistants

- Google Home and Amazon Alexa





# eHealth



*Sources: Doctors on Demand*



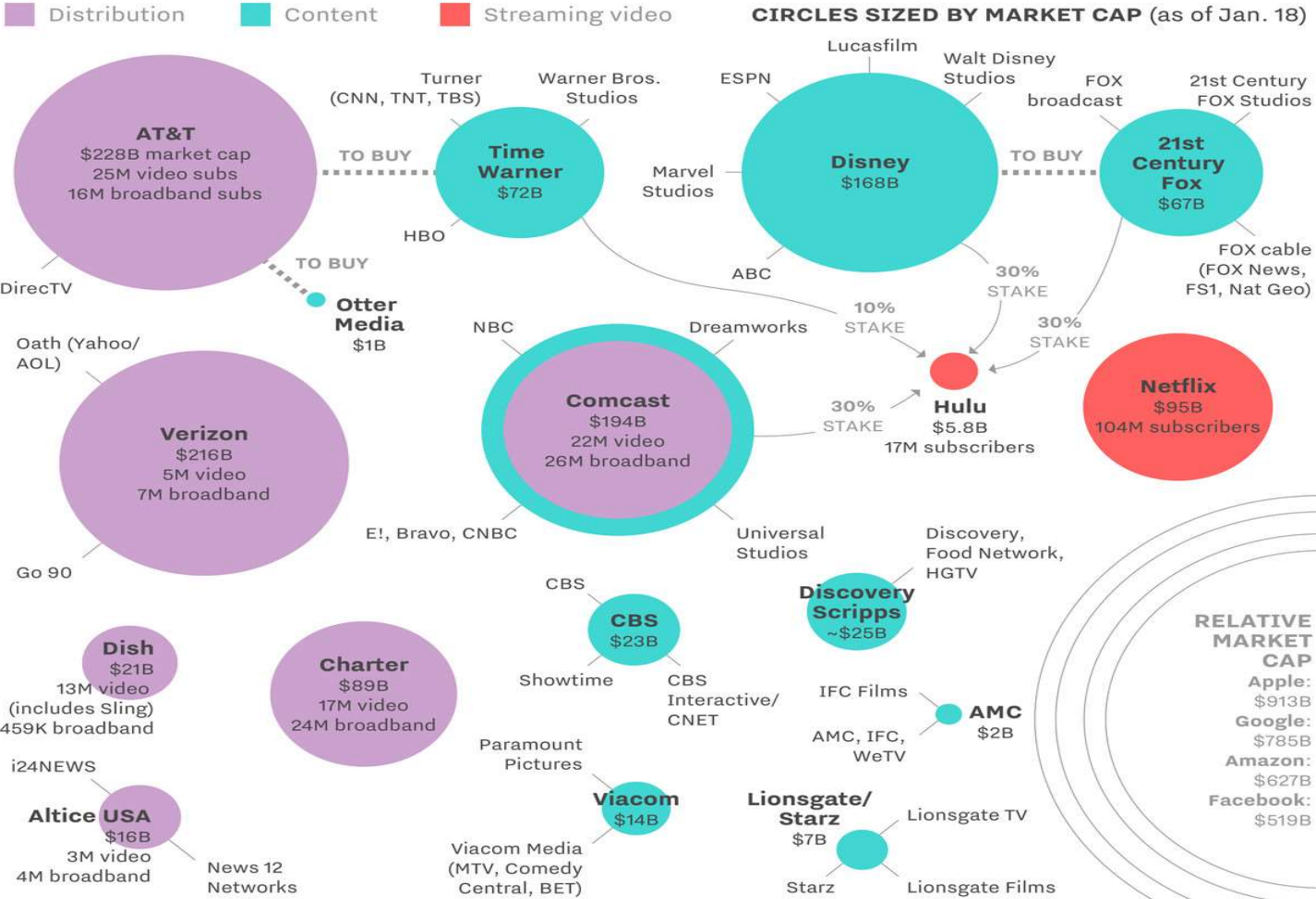
Fitbit

# eHealth Issues

- HIPAA
- Insurance
  - Payment
  - Reporting
- Prevention vs. treatment
- Network
  - LAN vs. WAN

# Today's Media Landscape

# Media landscape



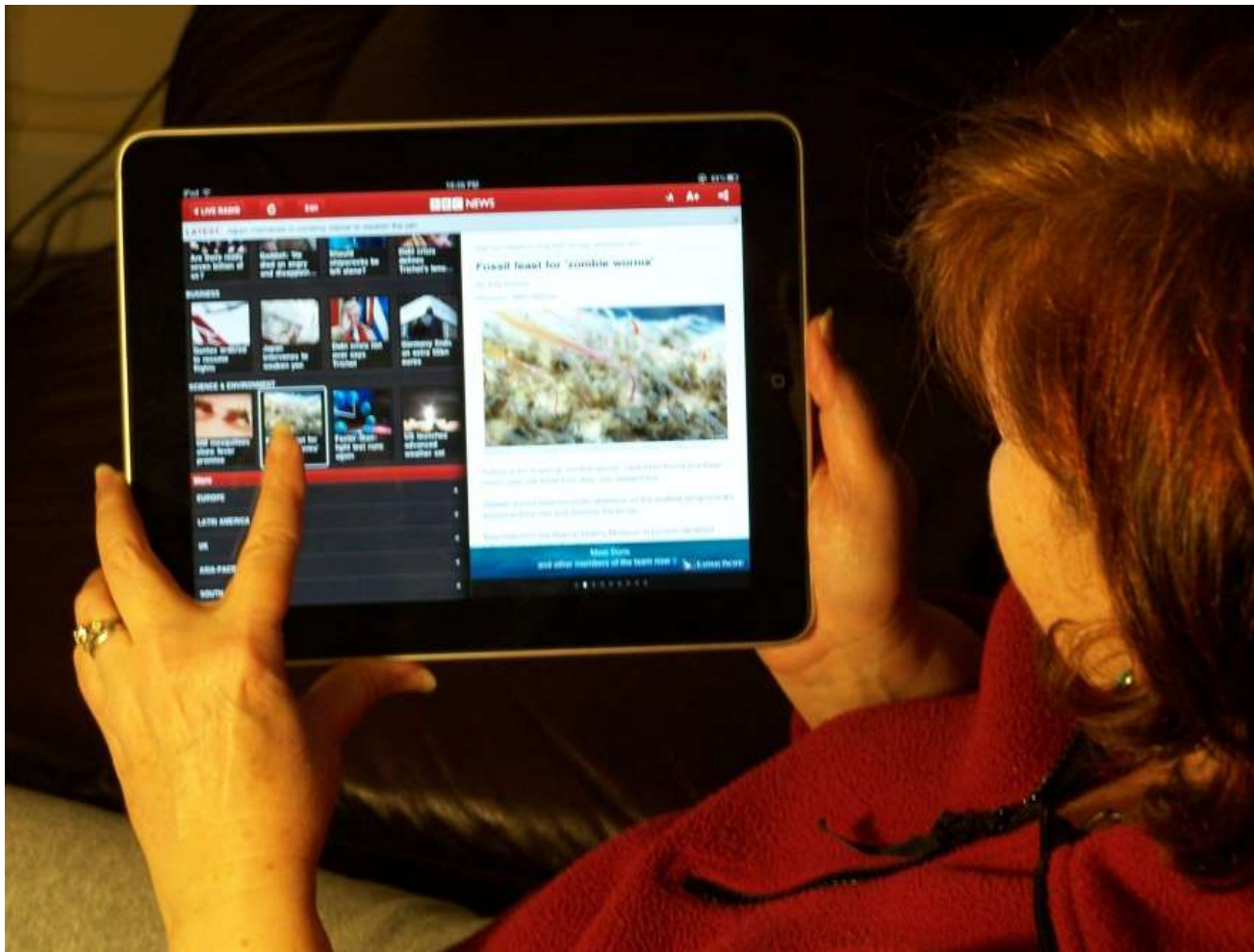
Note: Cox (~4M video, ~5M broadband) not listed since valuation was unavailable.  
Source: the companies, news reports, Leichtman Research Group (cable/internet subs)

**recode**

# Consolidation in Media

- Complete
  - AT&T acquires Time Warner
  - Disney acquires part of 21<sup>st</sup> Century Fox
- Pending
  - Nextstar purchase of Tribune
  - CBS and Viacom

# More Connectivity for Mobile Devices





# Autonomous Vehicles

Eventually, commuting time will become media time

Short term:  
Autos fully  
networked w/  
assistive tech



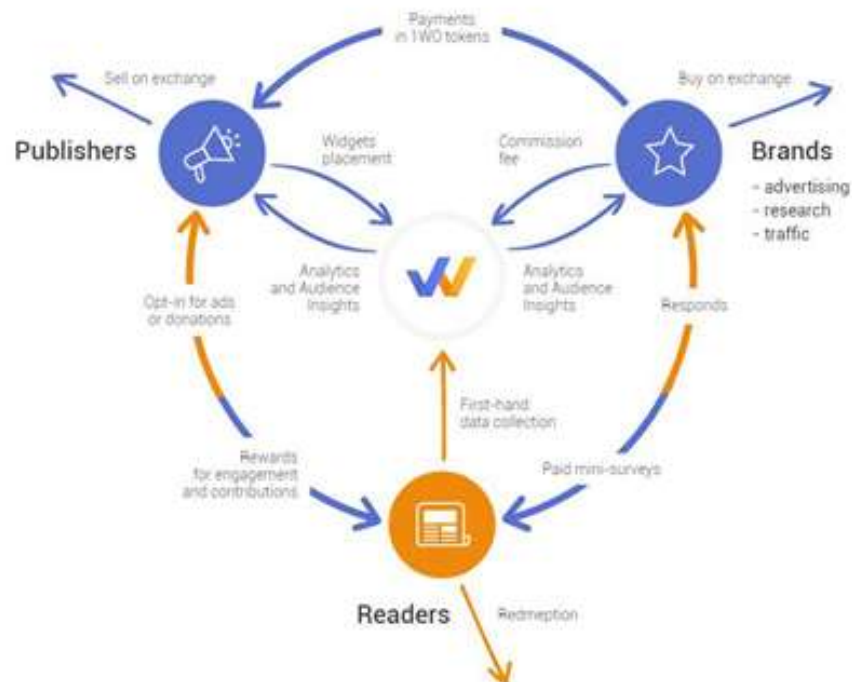
Source: Mercedes Benz

# Blockchain and Cryptocurrency

## ■ Example:



1World Tokens (aka Media Coins) – ICO in 2017



Reward Readers **Engagement**

Increase **Advertisement** streams

New revenue: **Research & more**

AI





# Regulatory Issues

- Privacy
  - GDPR (General Data Protection Regulations)
- Antitrust
- Equity and subsidy

# Social Media

Social media are at a tipping point:

- Privacy
- Increased costs
- Decline in use
- Increase in hypertargeting
- Critical mass

# 5G Implications

- Next generation competition for cable
- More bandwidth
- Ubiquitous
- Enables
  - OTT
  - Mobile access
  - New revenue streams for telcos

# Things to watch in 2019

- 5G
- OTT
- IoT
- Privacy

# It still comes back to content...

- Television
- Magazines
  - Comparable to OTT services
- Newspapers
  - Comparable to Cable TV or Telephone
  - Added bonus—local advertising sales force
- Opportunity to enhance ARPU

# Thank you!

More Info:

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