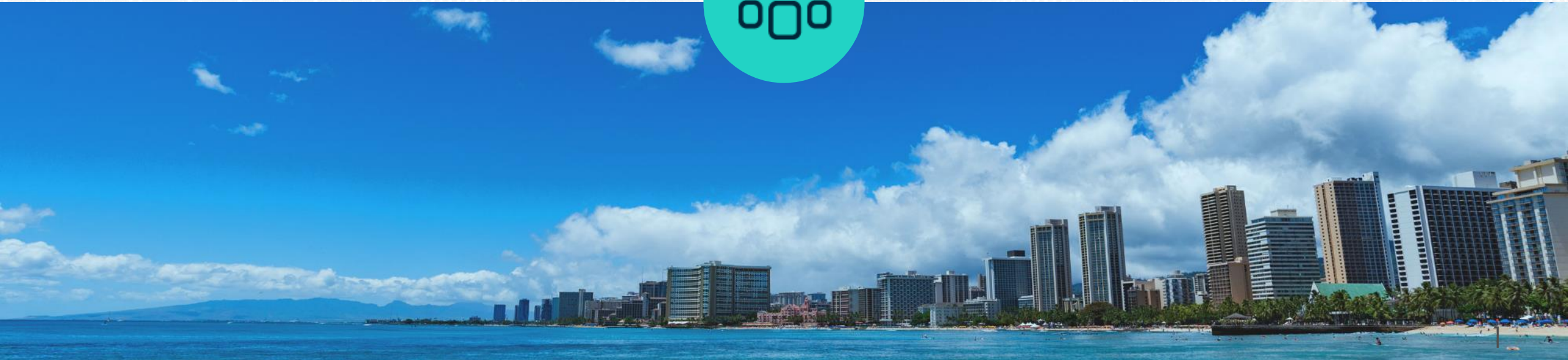


# 2020 Vison

Not So Clear and Partly Cloudy



# Future of the Internet

## IoT and Big Data

- IoT
  - Digital Assistants
    - Alexa, Google and Siri
  - Home Automation
    - Nest
    - Ring
    - Kasa
  - Sensors
    - Agriculture
    - Livestock
    - Aviation
- Big Data
  - Ability to monetize or mobilize data will be key
  - ETL process combined with AI and ML are changing the game

# Future of the Internet cont.

## AI/ML and AR

- Artificial Intelligence and Machine learning
  - Marketing personalization
  - Fraud Detection
  - Financial Trading
  - Cybersecurity
  - Healthcare
  - Physical Security
- Augmented Reality
  - Wayfair/IKEA – furniture app
  - Warby Parker – Eye Glasses
  - Hyundai – AR user Manual
  - Land Rover – External view of surroundings
  - Education – bringing text to life



# Main Drivers for adoption

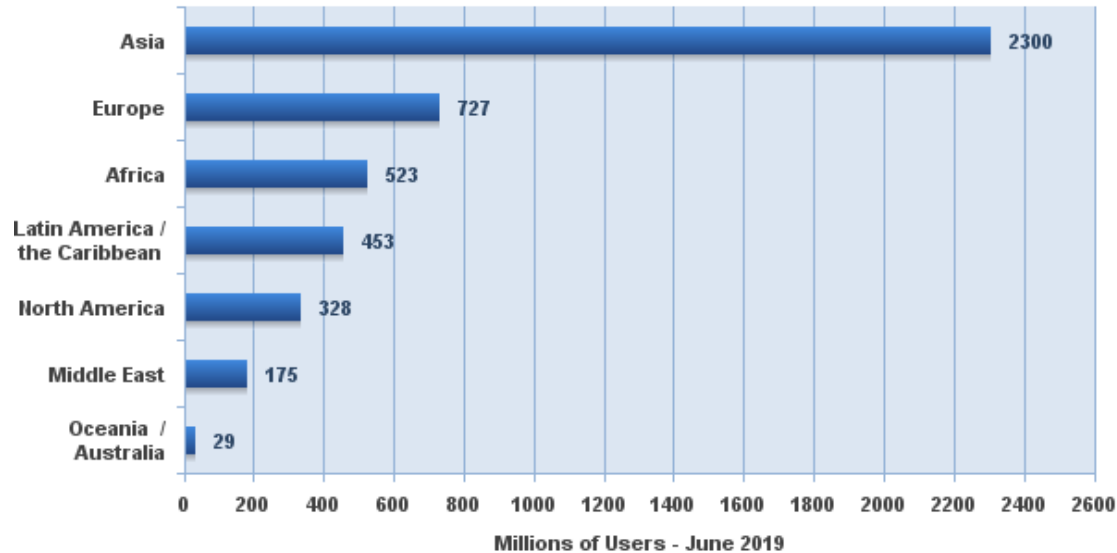
- 3 C's
  - Connectivity
  - Compute power
  - Consumerization



# Connectivity around the world

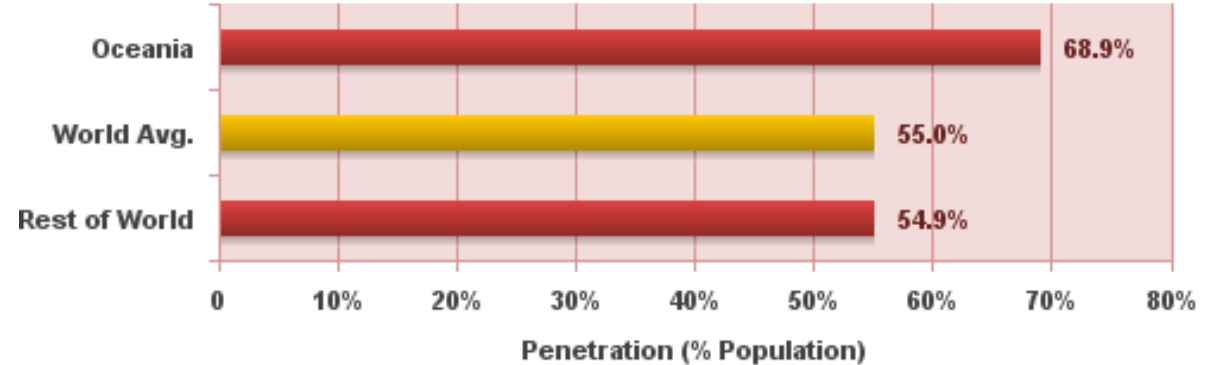
Why I believe we are at the tipping point

### Internet Users in the World by Geographic Regions - Mid-Year 2019



Source: Internet World Stats - [www.internetworldstats.com/stats.htm](http://www.internetworldstats.com/stats.htm)  
Basis: 4,536,248,808 Internet users estimated in June 30, 2019  
Copyright © 2019, Miniwatts Marketing Group

### Internet Penetration in Oceania / Australia June 30, 2018



Source: Internet World Stats - [www.internetworldstats.com](http://www.internetworldstats.com)  
28,439,277 Internet users in Oceania estimated in June 2018  
Copyright © 2018, Miniwatts Marketing Group

# Connectivity Solutions

- Distributed Antenna Systems
  - 5G ready
  - Multi-carrier
  - Rock solid backing by fiber
- SD-WAN
  - Commoditizing connectivity
  - Changing the dynamic of what is possible
- Managed Wifi
- Collaboration Services
- Network as a Service
  - Monitoring
  - Management
  - Support
  - Scaling
  - Perfect for business of all sizes

**A wireless network supported from the inside, out**

CBTS wireless network engineers will custom design, install, and support an in-building wireless solution that is 5G ready, fiber-based, multi-carrier, and supported 24x7x365.

**5G ready**  
DASaaS can support all frequencies from 150MHz to 2700MHz on one hardware layer, making the addition of carriers, public safety frequencies, and new technologies like 5G easy with little to no adjustment to installed hardware.

**Fiber based**  
DASaaS uses a fiber backhaul that makes the system more affordable and easier to install with less disruption to regular day-to-day business.

**Multi-carrier**  
DASaaS can support one, some or all of the cellular and public safety frequencies in use today from the moment of installation. Even if you initially launch with one wireless carrier, adding carriers and frequencies in the future is simple.

**Supported 24x7x365**  
After installation, CBTS experts provide ongoing support services, including:

- Management of cellular carrier relationships and support
- Monitor and maintenance of DAS system 24x7x365 to ensure superior service
- Deliver of DAS performance reports on a regular basis

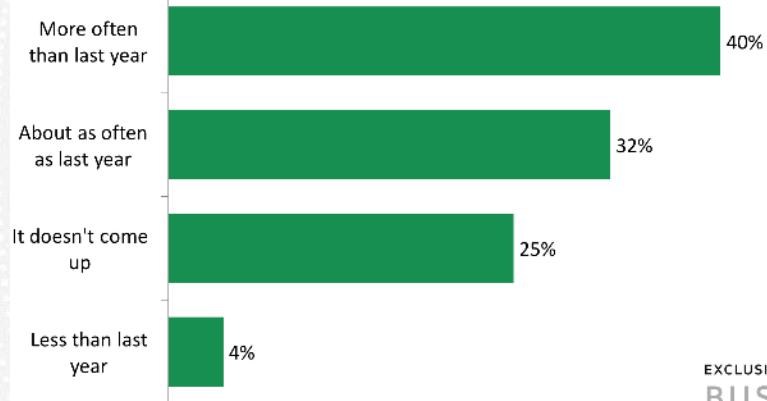
**Webex Teams**

Cisco® Webex Teams is an easy-to-use collaboration solution that keeps people and teamwork connected anytime, anywhere. Webex Teams™ brings together messaging, file sharing, video meetings, whiteboarding, calling, and other tools you use to streamline teamwork, collaborate with partners outside your organization, and produce results faster.

# Life on the Edge

## Edge Computing Becoming A More Sought-After Part Of IoT Solutions

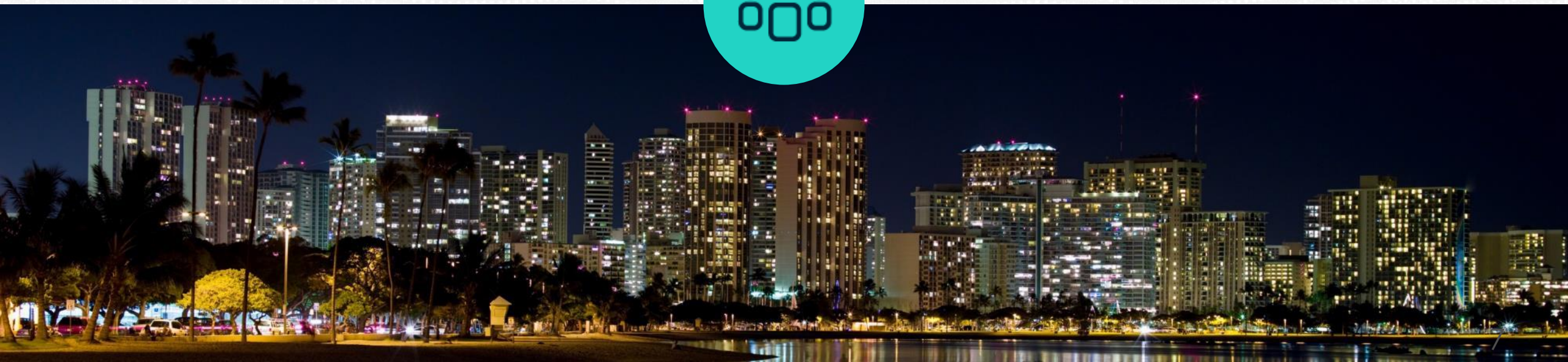
Q: Does edge computing — processing data from devices where it's created rather than in the cloud — come up more with your customers than it did last year?



EXCLUSIVE DATA FROM  
BUSINESS  
INSIDER  
INTELLIGENCE

Source: Business Insider Global IoT Executive Survey, n=85 IoT providers, 2017

- Security Issues
- Access Issues
- Transmission Efficiency



# Bridging the gaps



## Network

- Core
- Edge
- Wireless
- Software Defined



## Compute

- Converged Infrastructure
- Hyper Converged Infrastructure
- Composable Infrastructure
- Mission critical compute
- High performance compute



## Data Management

- Backup & Recovery
- Disaster Recovery
- Software Defined
- Virtualization



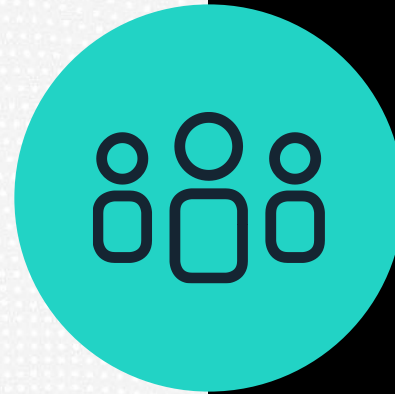
## Security

- Next-Gen Defenses
- Secure Mobility
- Application Delivery & Security
- Endpoint Security
- Security Assessments, Gap Analysis, and Penetration Testing
- Regulatory Compliance
- Physical Security



# Digital Life

- Digital Assistants
  - Preference is driven by choice of ecosystem
  - Not there yet but for simple tasks it works
- Home Automation
  - Schedules
  - Lights
  - Cooking
  - Washing clothes
- Home Security
  - Cameras
  - Sensors
  - Alerts
- Health and wellbeing
  - Smart Watches
  - Scales



Thank you

cbts

Hawaiian Telcom