Committee on Critical Infrastructure

Cyber Workforce: Strategies to Fill the Gap

NARUC Summer Policy Summit

Cyber Workforce: Strategies to fill the gap

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SVP & CIO, Technology Operations

NARUC Conference

Date: July 16, 2017

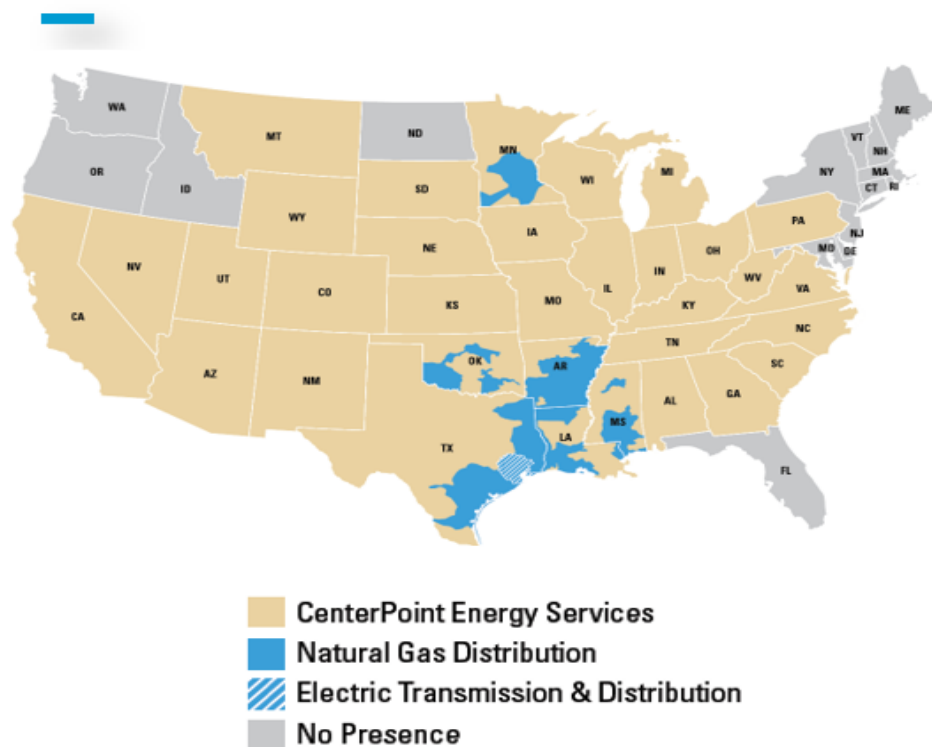**DELIVERING ENERGY, SERVICE AND VALUE**

CenterPoint Energy

Our Company

CenterPoint Energy: An Electric and Natural Gas Utility

Legend:
- CenterPoint Energy Services
- Natural Gas Distribution
- Electric Transmission & Distribution
- No Presence

[1] As of Dec. 31, 2015 per EEI and AGA

Electric Transmission & Distribution:

- Electric utility operations with ~2.4 million metered customers across ~5,000 square miles in and around Houston, Texas
- 19th largest U.S. investor-owned electric utility by customer base [1]
- 86,828,902 MWh delivered

Natural Gas Distribution:

- Regulated gas distribution jurisdictions in six states with ~3.4 million customers
- 6th largest U.S. gas distribution company by customer base [1]
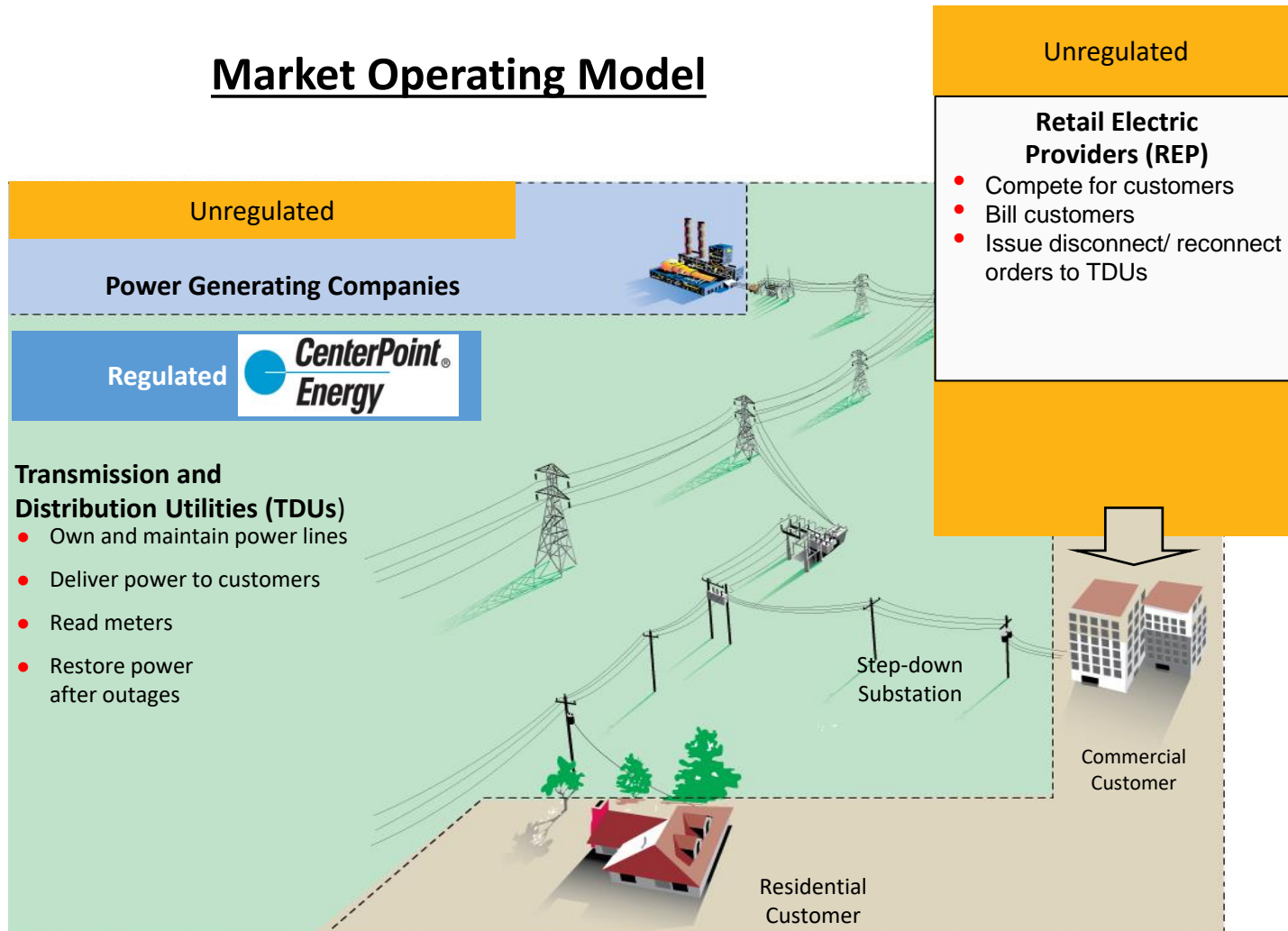- Delivered 411 Bcf of natural gas

Energy Services:

- Non-regulated competitive natural gas supply and related energy services serving ~33,000 commercial and industrial customers across 33 states
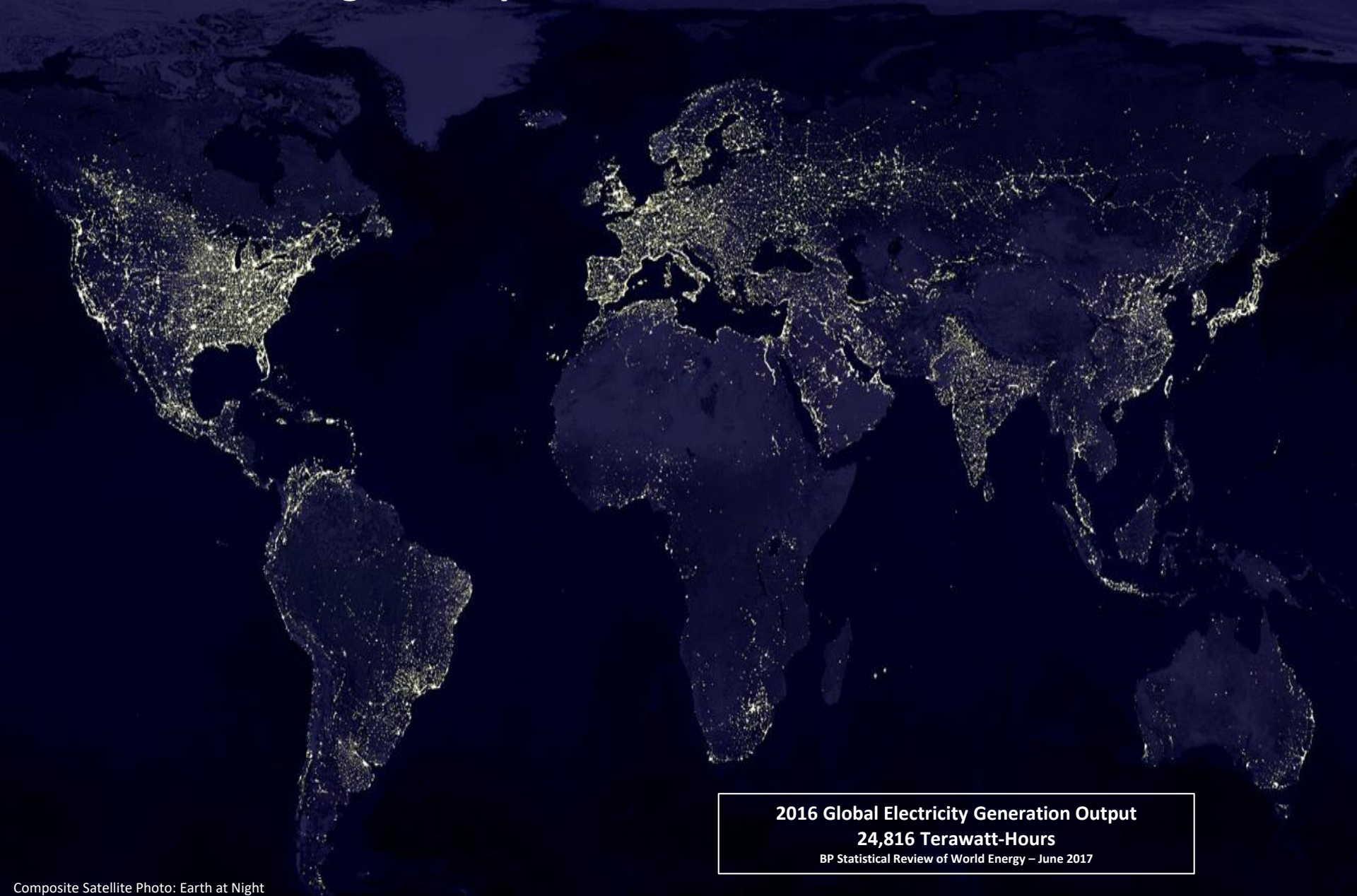- Delivered 777 BCF of natural gas

Texas Competitive Electric Market

Market Operating Model

Unregulated

Power Generating Companies

Regulated CenterPoint® Energy

Transmission and Distribution Utilities (TDUs)
- Own and maintain power lines
- Deliver power to customers
- Read meters
- Restore power after outages

Unregulated

Retail Electric Providers (REP)
- Compete for customers
- Bill customers
- Issue disconnect/ reconnect orders to TDUs

Step-down Substation

Commercial Customer

Residential Customer

4

Future? Challenges? Responsibilities?

2016 Global Electricity Generation Output
24,816 Terawatt-Hours
BP Statistical Review of World Energy – June 2017

Composite Satellite Photo: Earth at Night

Internet of Things (IoT)
Connected Devices: Global Heat Map

~50B by 2020
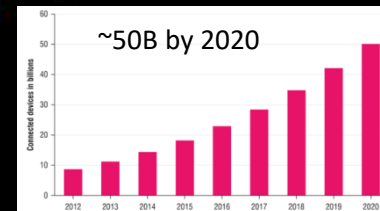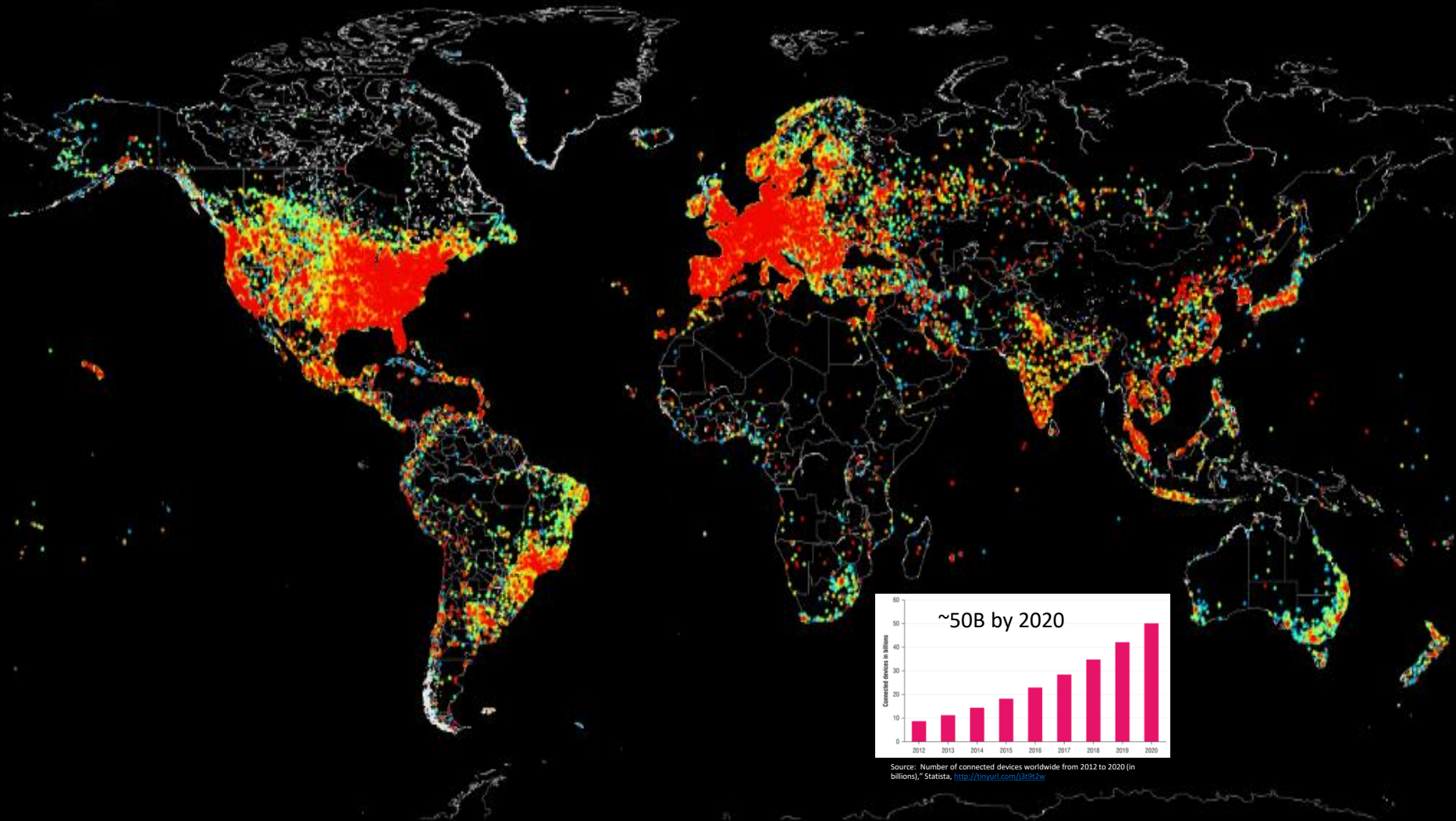
Source: Number of connected devices worldwide from 2012 to 2020 (in
billions)," Statista, http://tinyurl.com/j3t9t2w

Source: https://www.shodan.io

Cyber Security Competencies

Focus, Objective and Validation

Validate: 3rd Party Drill

Awareness of threats & vulnerabilities. Detect and respond

Validate: Red Team / Blue Team

Awareness of threats & vulnerabilities. Detect and respond

Validate: Audit & Management Plans

Compliant with applicable laws, regulations, & standards

Evaluate Threats and Risks. Develop & Deliver Mitigations

Validate: 3rd Party Evaluation

Prevent disruption of core business services and other critical functions

Validate: 3rd Party Testing

Prevent unauthorized access and mitigate exfiltration

Validate: 3rd Party Testing

Incident Response

Threat Analysis, Strategy & Governance

Core Services

Situational Awareness

Compliance

Sensitive Information

The Cyber Workforce

Richard Suttie, Co-Director, UAPI
Center for Homeland Defense and Security

Multi-Dimensional Life Cycle Challenge

- **Who**
  - **Are they?**
- **Where**
  - **Where are they?**
- **What**
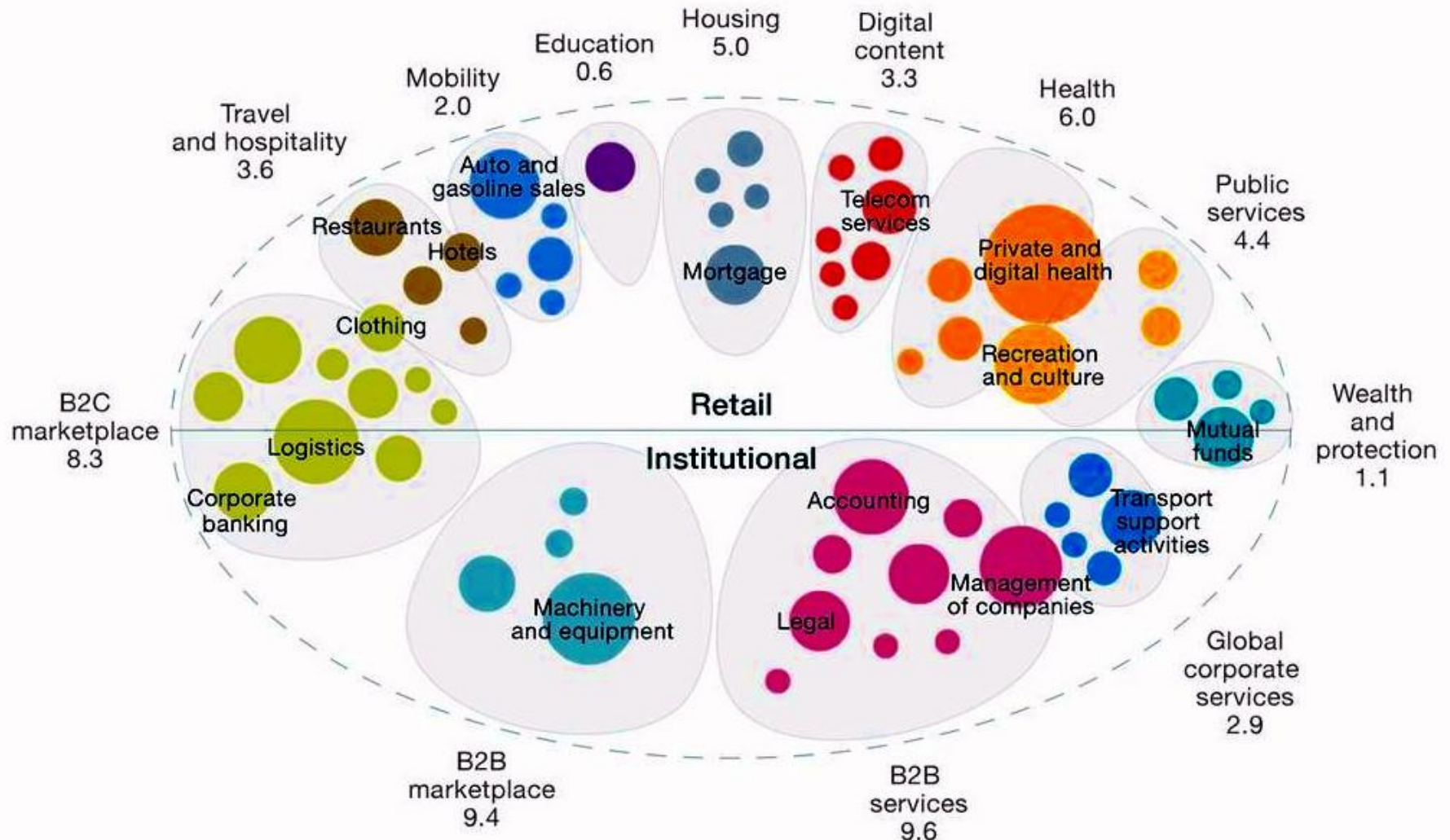 - **What do they want? …need?**
- **How**
  - **Do you get them? … develop them? …retain them?**

THE ADVENT OF DIGITAL ECOSYSTEMS

WORKFORCE CHARACTERISTICS

- One in three security professionals lack effective intelligence to detect and action cyber threats, according to a new survey from threat intelligence platform

- In addition 24 percent believe they are at least one year behind the average threat actor, with half of this sample admitting they are trailing by two to five years.

CYBER WORKFORCE STATS

- 65% of large US companies have a CISO position today – 100% by 2021

- Cybersecurity job postings in the US are up 74% over the past 5 years.

- There were 1 milion cybersecurity job openings in 2016

- There is expected to be 3.5 million cybersecurity jobs needed in 2021

SALARIES 2016

- Lead Software Engineer $233k
- Chief Security Officer $225k
- Global Information Security Director $200k
- Chief Information Security Officers $192K
- Director of Security $178k

- *Source: Dice – IT Job Board*

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