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Qualcomm

Driving Digital Transformation

Elizabeth Migwalla,
Senior Director Government Affairs-MEA
Qualcomm International, Inc.

The R&D Engine

\$60+ Billion

in cumulative R&D*

130,000+

Granted patents / pending applications

345+

Cellular licensees

* Cumulative expenditures as of Q4 FY20 since 1985

Qualcomm Technologies

Low power and powerful computing processors

CPU, GPU, DSP, NSP

Multimedia

Video

Language

Voice UI

Display processing

Camera processing

Audio processing

AR / VR

Sensors

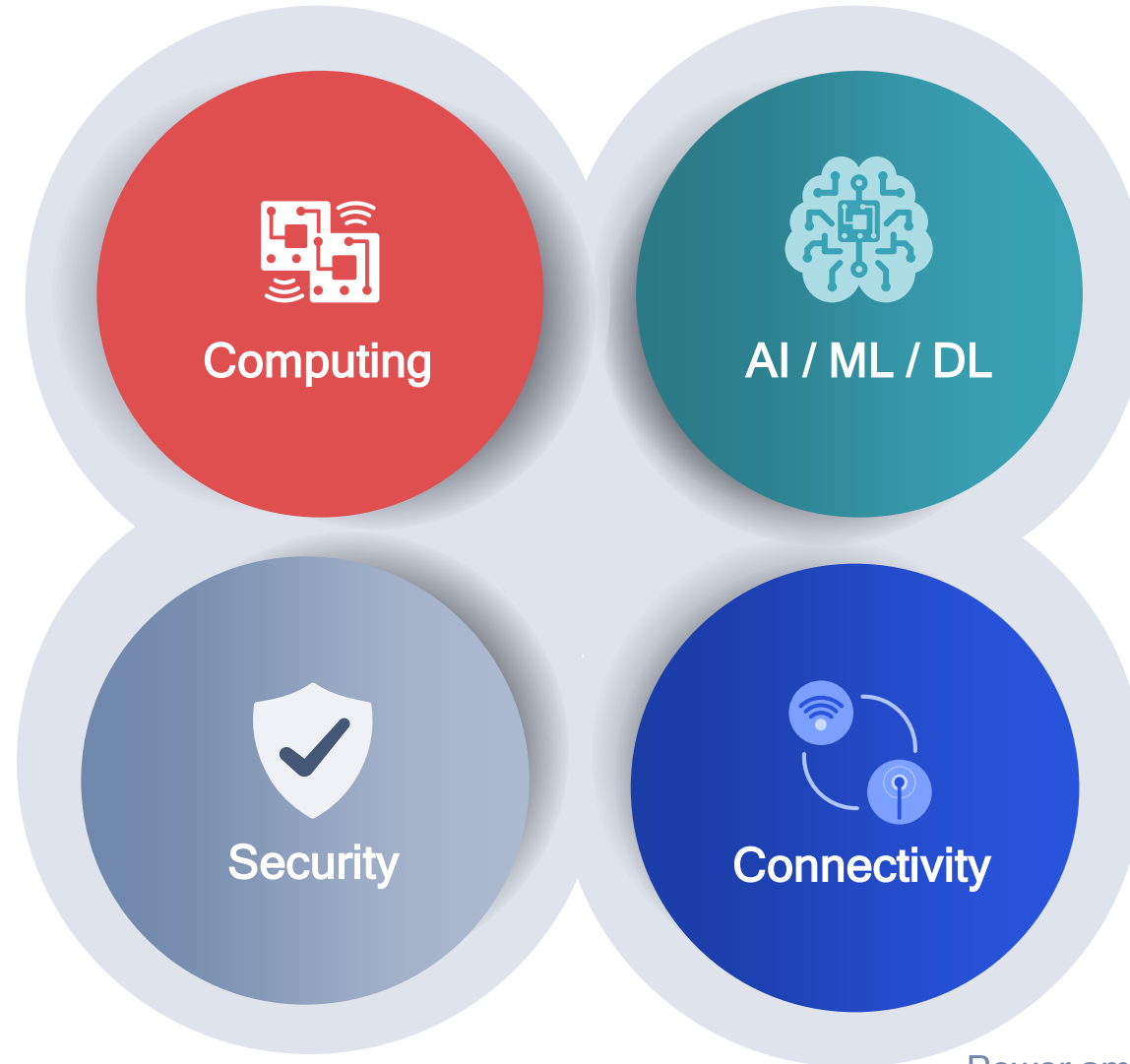
Other

Power management

Always on camera

Security

Fingerprint



AI / ML

Cognitive Computing

Qualcomm® AI Engine

Qualcomm® Hexagon™

Tensor Accelerator

CV-ISP

Depth sensor

Always on camera

Connectivity

2G, 3G, 4G, 5G

802.11 n / ac / ax

802.11ad

Bluetooth

802.15.4

C-V2X

Powerline

GNSS / Location

Peripherals (PCIe, USB.)

RF

Power amp

LNAs

Acoustic filters

Antenna Tuner

RF switches

Envelope Tracker

5G



Private 5G network

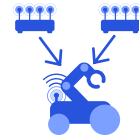
- Unique network ID
- Integrated and independent architectures
- Seamless fallback to public networks



Spectrum

With NR-U, 5G NR will support:

- Licensed spectrum
- Shared spectrum
- Unlicensed spectrum



URLLC

- Low latency
- Ultra-reliability
- CoMP multi-TRP
- Service multiplexing
- Enhanced mobility



TSN

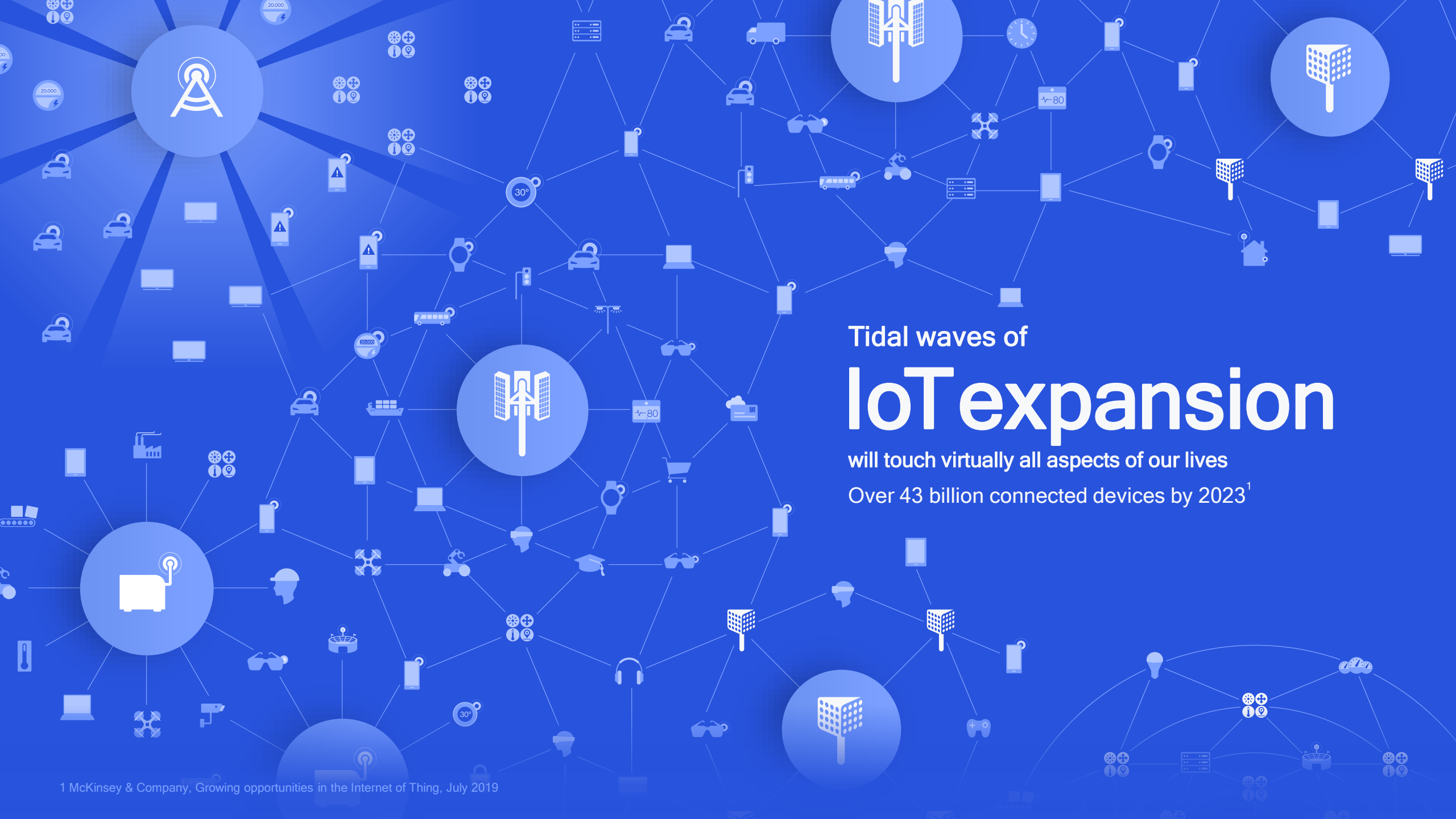
- Ethernet over 5G
- Deterministic networking
- Device time synch.



Positioning

- Network & device based
- Industrial IoT requirements

5G NR supports many industrial IoT use cases today;
3GPP Rel-16 brings additional capabilities



Tidal waves of IoT expansion

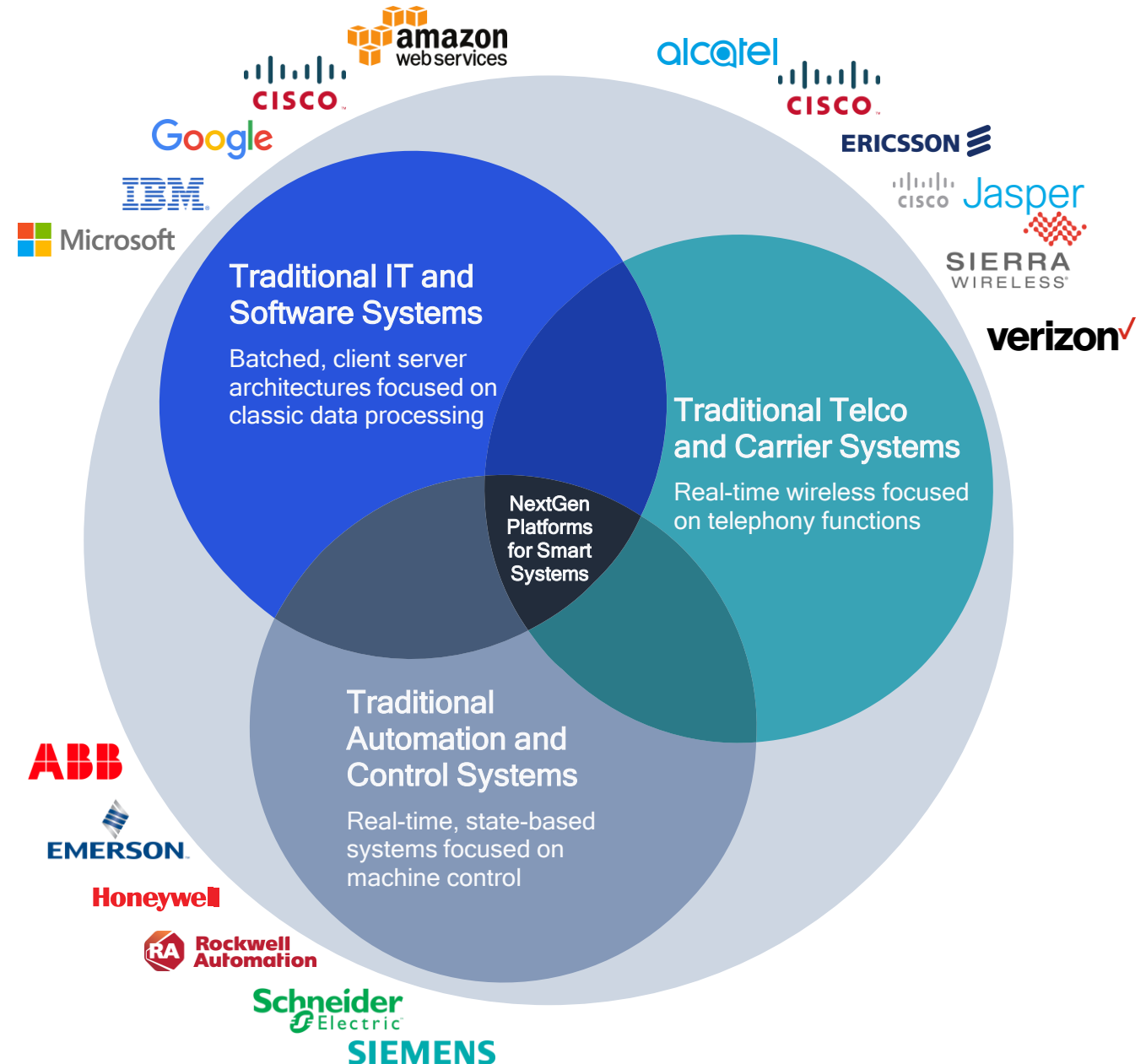
will touch virtually all aspects of our lives

Over 43 billion connected devices by 2023¹

IoT is highly fragmented and distributed challenge

IoT is a team sport

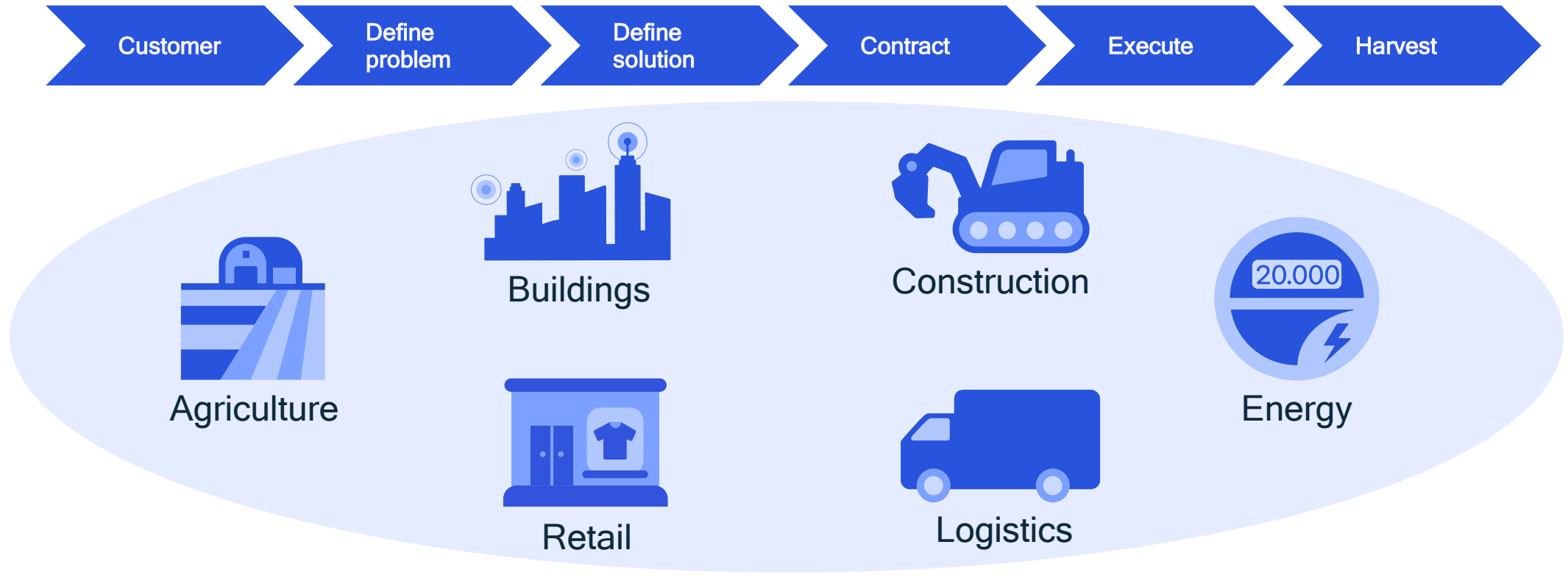
- Need to have core ecosystem of partners forming a pseudo consortium across various regions





IoT is fueling the digital transformation of the enterprise

We're collaborating with companies that are pioneering digital transformation



Qualcomm Technologies is the trusted engine for digital transformation

system design expertise | leading technology portfolio | end-to-end solutions | industry relationships



Our IoT business focuses on a segment, application or device

Smart Connected Spaces

Smart Spaces are the building blocks for Smart Communities

Smart Verticals



Smart Spaces



Smart Transportation



Smart Campuses



Smart Infrastructure



Smart Manufacturing



Smart Safety and Security



Smart Agriculture



Smart Shops



Smart Stations



Smart Malls



Smart Display



Smart Experiences



Smart Buildings



Smart Stations



Smart Operators



Smart Traffic



Smart Crowd Management



Smart Schools



Smart Universities



Smart Stadiums



Smart Malls



Smart Roads



Smart Hospitals



Smart Borders



Smart Airports



Smart Ports



Smart Utilities (Power / Water)



Smart Grid



Smart Factory



Smart Logistics



Smart Warehousing



Asset Management



Smart Cameras



Smart Surveillance



Smart Access



Smart Livestock



Smart Farming



Smart Horticulture





Smart Spaces

Driving Digital Transformation Today for a Better Tomorrow





Thank you

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