

Technology Trend Topic: 5th Generation Wireless (5G) and the Internet of Things (IoT)

Publish Date

11/22/19

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ITC SMEs

5G: Allen Hill, Christian Williams, Lisa Chatman,
Sade Boyd

Network/Edge Computing: Jim Russo, Fred
Haines, Kevin Gallo, Jeff Smith

Cloud: John Radziszewski

Current ITC Vehicles: Enterprise Infrastructure Solutions (EIS) and
IT Category Schedule 517312 (132-53) Wireless Mobility Solutions. Alliant
2 GWAC & Connections II (cover infrastructure only)

Vehicles to Watch: 5G mods to SIN 517312, EIS, Alliant and
COMSATCOM

NAICS: 517312

Overview

In the 1980s, 1st generation wireless supported voice calls; 2G brought text; 2.5 and 2.75G introduced data; 3G increased data speed and enabled video calling and mobile internet; 4G brought video conferencing and 5G will exponentially increase the **speed** (up to 100x current levels), **responsiveness**, and **amount of data transmitted** over new networks.

-GovLoop

5G will disrupt the global mobile landscape and initiate unprecedented levels of human-device and device-device connectivity.

- GSA 5G Symposium

Communication will be instantaneous - **Digital Trends**

“Because it enables the IoT, 5G is one of the more important emerging technologies. Thanks to 5G’s flexibility, every level of government will use 5G as IoT enters the public sector.”

- Bill Zielinski

The IoT is about extending the power of the internet beyond computers and smartphones to a whole range of other “connected” things, used to gather information, send information back, or both. IoT allows businesses to be more connected to the world around them and to do more meaningful, higher-level work. - **General Dynamics**

Market Trends

NEAR TERM

ITC’s Top 10 Leading Edge Technology Initiative will ensure ITC continuously anticipates market changes, adapts to customer needs, and evolves at the pace of technology evolution.

2017: 3GPP (3rd Generation Partnership Project) released its first formal 5G standards

“Forward-thinking spectrum policy, modern infrastructure policy and market-based network regulation form the heart of our strategy for realizing the promise of the 5G future.”

-Chairman Pai, FCC

GSA will work with the Federal Mobility Group to address 5G Security, Acquisition Strategy and Pricing. - Allen Hill

LONG TERM

By 2025...

- 5G infrastructure spending will exceed \$326 billion - **Moor Insights & Strategy**
- 1.2 billion people will have 5G network access - **GovLoop**
- 5G will enable 21.5 billion IoT devices - **IoT Analytics**

By 2035, 5G will enable more than \$3.5 trillion in U.S. economic output and support 22 million jobs. - **EO on Spectrum Strategy**

Use Cases/Applications

“The low latency of 5G will offer a new generation of Virtual and Augmented reality applications.” - John Radziszewski

5G promises to open the world for smart cities, driverless cars, precision agriculture and a fully-realized IoT will revolutionize entire industries. 4G made the internet a visual medium, but 5G will make it tactile with virtual and augmented reality. Wireless communications could replace cable TV and revolutionize health care by enabling reliable remote health monitoring.

- **EO on Developing a Sustainable Spectrum Strategy for America’s Future**

- **GSA PBS and FAS wireless mobility** are exploring LTE and 5G within GSA-provided buildings
- **DoE** to host Verizon Business’ first 5G lab for testing gov’t tech
- **DHS**’“Moonshot” initiative investigates 5G deployments for Wireless Priority Service, 1st responder systems & CyberSecurity
- **Air Force’s** long term initiative to get 5G LTE to all of its bases and uses augmented and virtual reality - enabled by 5G- to modernize training
- **DoD** to experiment with “smart warehouses” for military services’ functions

IoT Use Cases: Pest control, beekeeping, wearables, virtual medical assistants, emergency response system, smart cities - **General Dynamics**

Risks/Challenges/Myths

“5G and Supply Chain Risk Management (SCRM) represent the next phase of mobile technology and network architectures. 5G impacts cyber security, change management, application integration, and the introduction of new products, software & services. These changes impact intellectual property, lifecycle management and security.” - Mike Vande Woude

Infrastructure Cost & Lack of readiness - **Gartner**

Surveillance - fears of potential espionage of foreign users through foreign equipment vendors - **The New Yorker**

Skepticism over 5G’s disruptive potential - **Harvard Business Review**

Marketing - 5G is often sold as a universal solution for all internet connectivity issues -**The New Yorker**

Spectrum Challenges - More Spectrum is needed due to higher demands on wireless networks - **EO on Spectrum Strategy**

“Integration of multiple frequency bands and devices into a seamless network infrastructure.” - Jim Russo

Other Concerns - Some cities reluctant to embrace 5G, fearing radiation and electromagnetic smog could have **adverse health effects and impact historical preservation** -GovLoop

What You Should Read NOW

1. [Way Beyond Wireless: Planning for 5G Bill Zielinski’s July ‘19 Blog Post](#)
2. [The FCC’s 5G FAST Plan](#) to facilitate 5G technology
3. [Executive Order-Developing a Sustainable Spectrum Strategy \(Oct ‘18\)](#)
4. [Executive Order-Securing Supply Chain \(May 2019\)](#)
5. [Executive Order - Protecting Data \(July 2019\)](#)
6. [Executive Order-America’s 5G Potential \(May 2019\)](#)
7. [GSA Guidance on Section 889: New Supply Chain Security FAR Rule](#)

Upcoming Technology Trends Topics

SaaS vs IaaS vs PaaS

Natural Language Processing (NLP)

Robotic Process Automation (RPA)

Published Technology Trends Topics

Artificial Intelligence (AI) - Published 9/30/19