The Cellular Connection

March 9th, 2021

Problem Statement

- The Satcom value chain is going through continuos disruption and Satellite Service Providers need to continually reinvent themselves to stay relevant.
- IoT is a hot topic and attracts the attention of SSP's as a new source of revenue.
- How do they fit in a world with LEO constellations and 5G on the way?

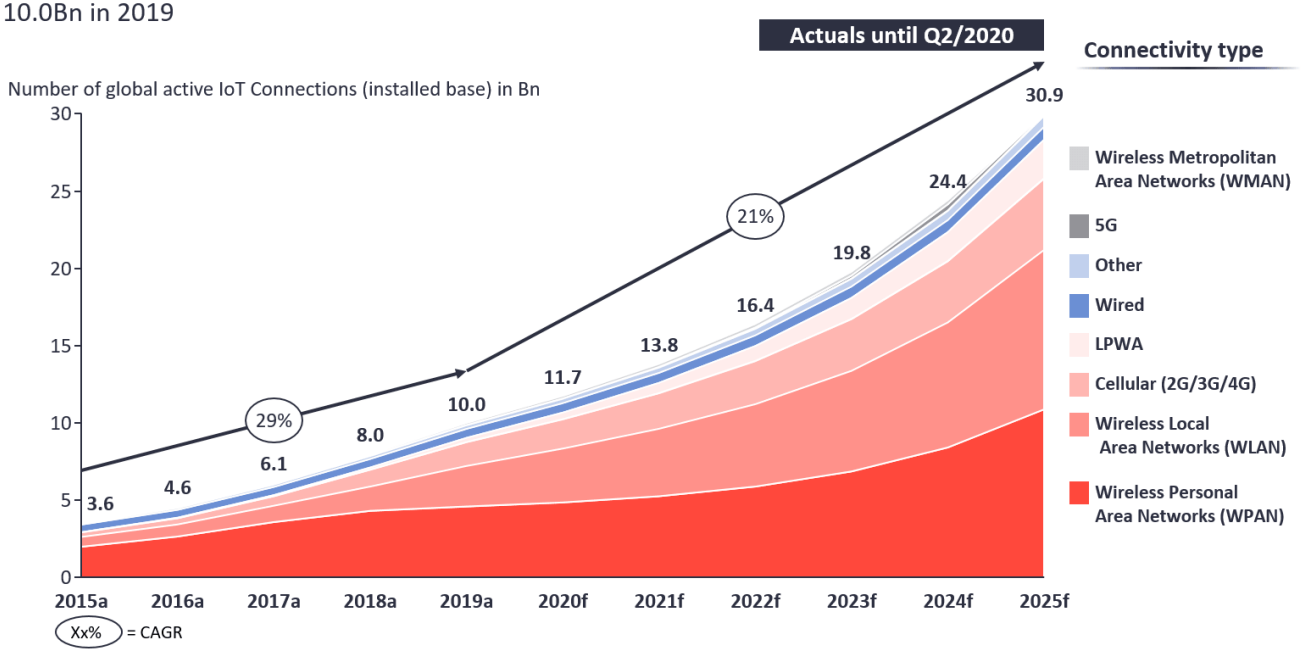
The Opportunity

IOT ANALYTICS

Insights that empower you to understand IoT markets

Global Number of Connected IoT Devices

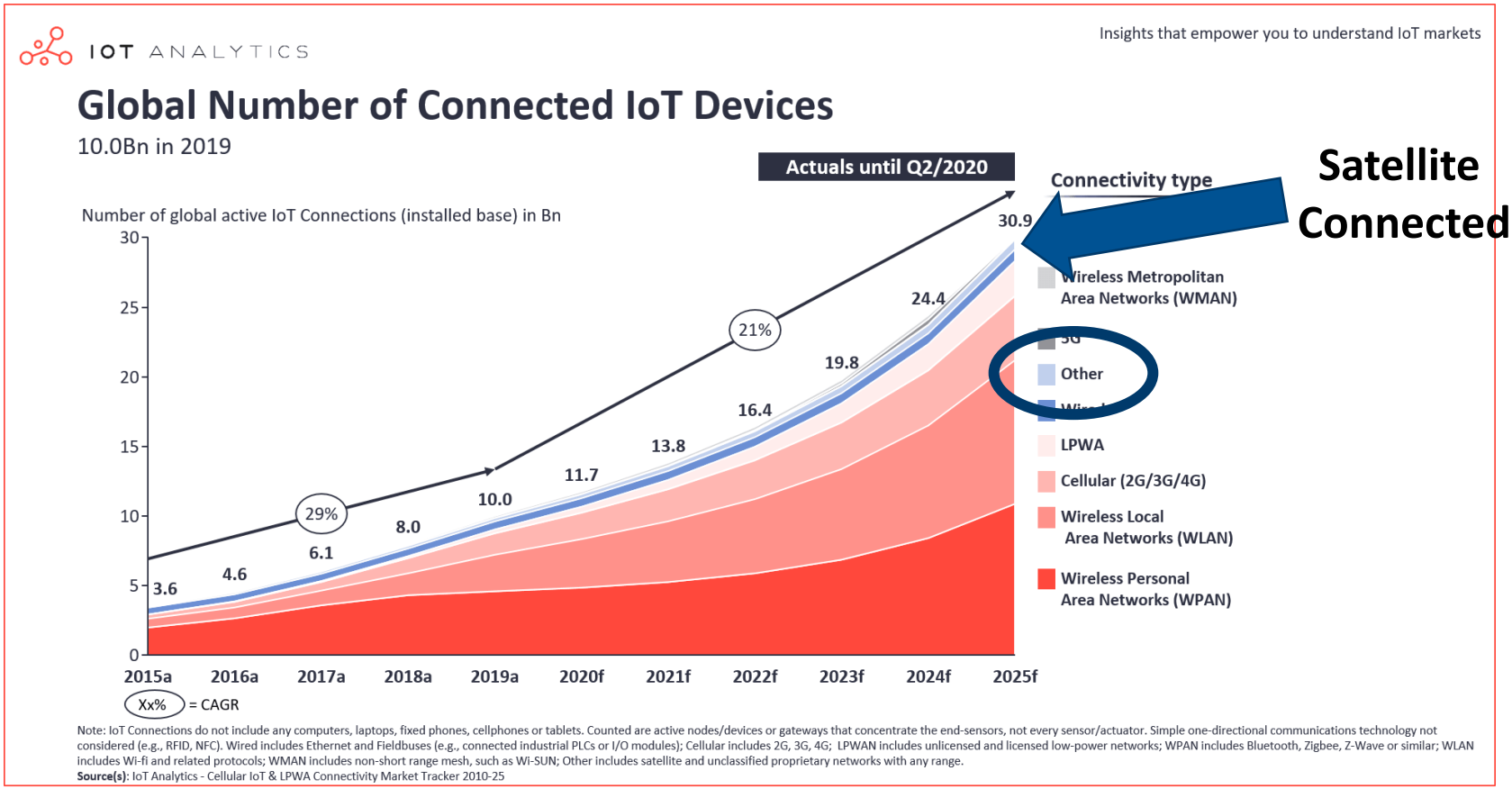
10.0Bn in 2019



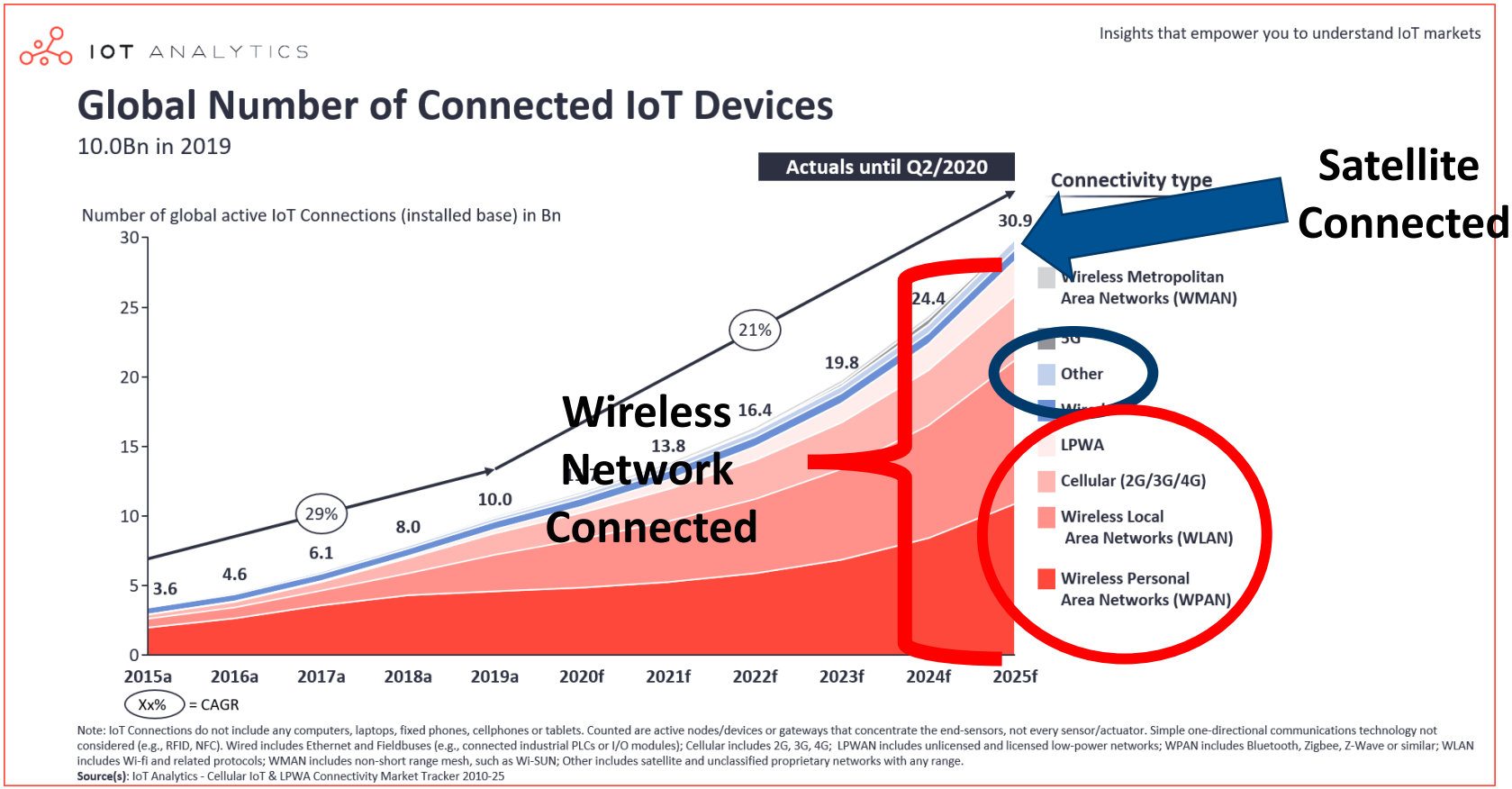
Note: IoT Connections do not include any computers, laptops, fixed phones, cellphones or tablets. Counted are active nodes/devices or gateways that concentrate the end-sensors, not every sensor/actuator. Simple one-directional communications technology not considered (e.g., RFID, NFC). Wired includes Ethernet and Fieldbuses (e.g., connected industrial PLCs or I/O modules); Cellular includes 2G, 3G, 4G; LPWAN includes unlicensed and licensed low-power networks; WPAN includes Bluetooth, Zigbee, Z-Wave or similar; WLAN includes Wi-fi and related protocols; WMAN includes non-short range mesh, such as Wi-SUN; Other includes satellite and unclassified proprietary networks with any range.

Source(s): IoT Analytics - Cellular IoT & LPWA Connectivity Market Tracker 2010-25

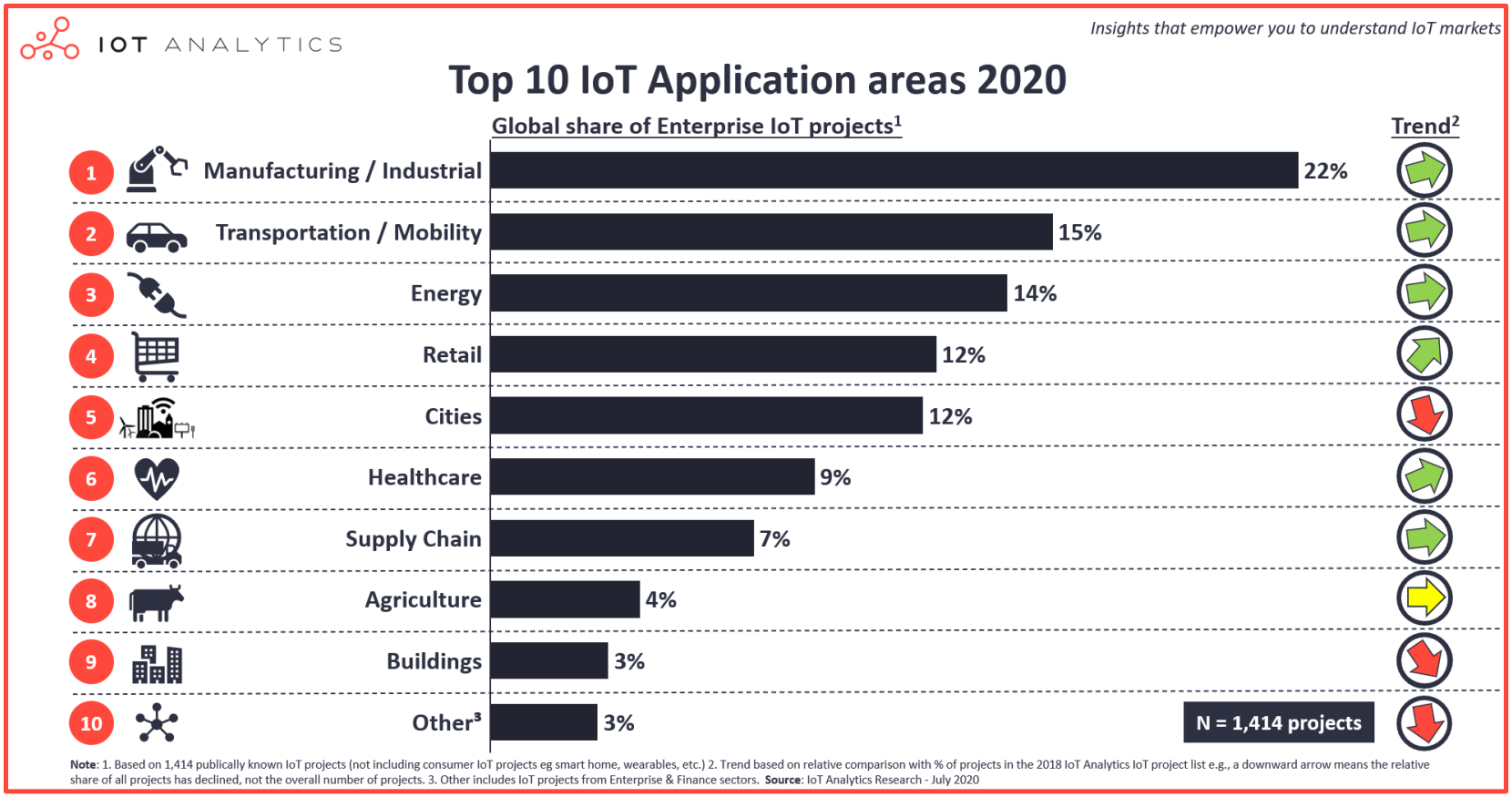
The Opportunity



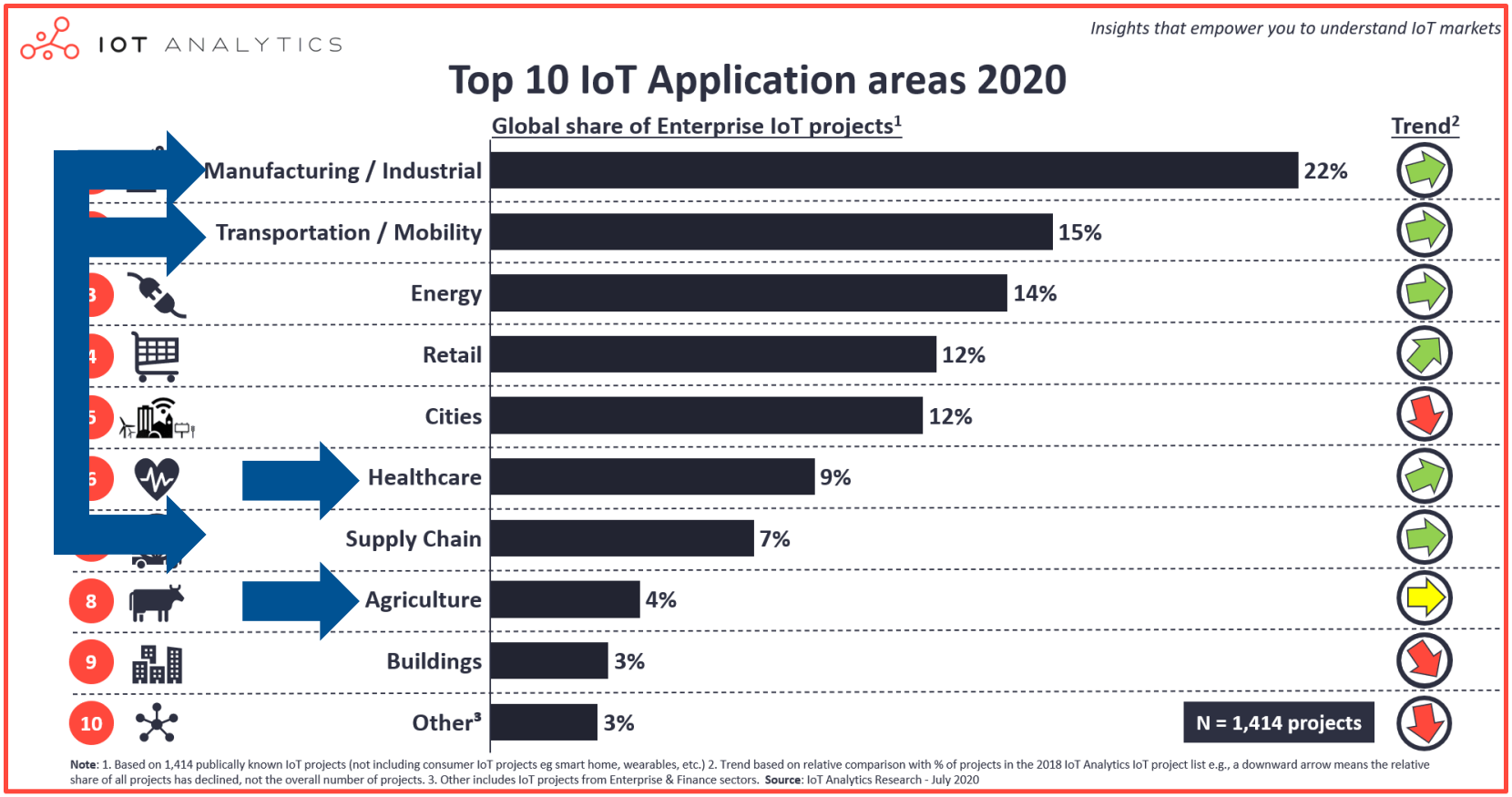
The Opportunity



Vertical Markets

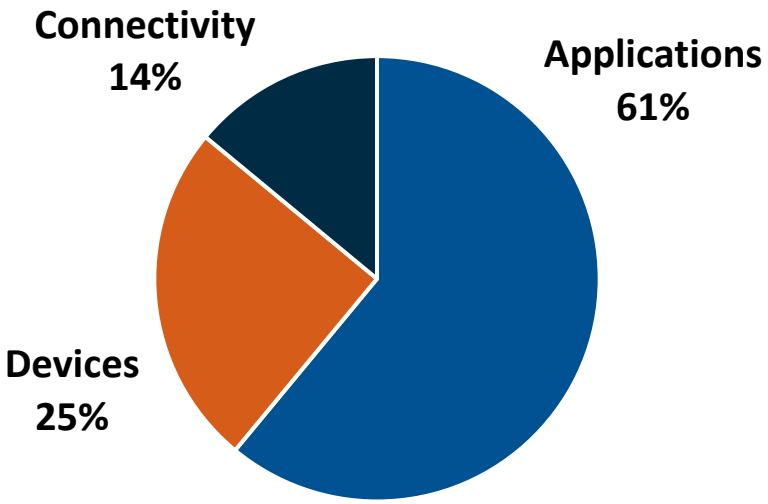


Vertical Markets



Moving Beyond Connectivity

2025 IoT Revenue Breakdown



Source: Analysis Mason

1. Selling connectivity is easy but limited revenue potential with minimal differentiation.
2. Maximize the IoT opportunity by bundling capacity with hardware and applications.
3. Act as connectivity supplier to application providers who resell a bundled service.

Satellite Service Providers Core Competencies Include Integration and Partnership

Connectivity Revenue Models

Conventional Monthly subscriptions are not well suited to IoT applications.

Two alternative models:

1. Long term prepaid – SIM card + 3 years service
   - Minimizes billing and admin overhead for the customer
   - High yield ($/Mbps) for the provider

2. Outcome based – Capacity is paid for as part of business outcomes.
   - Aligning with customer value defends against commoditization

Comtech EF Data

1. Leader in cellular backhaul
   - Working with our existing customer base to address IoT opportunities in emerging markets.
2. Integrated Edge Compute
   - IoT Gateway, NB-IoT base station
3. Header and Payload Compression
   - Small packets with high overhead are very comressable
   - Gains of over 40% have been seen in the field

IoT - The Cellular Connection

- IoT as an extension of cellular backhaul –
  - Low cost IoT devices and connectivity
  - IoT specific commercial offers
- Bundle connectivity with applications and devices
  - Inhouse development skills
  - Vertical specific offers
  - Vertical specific partnerships

We are working with our Service Provider and MNO customers to find new opportunities using cellular based IoT services.

Market-Leading Bandwidth Efficiency & Link Optimization

COMTECH EF DATA™