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Day 1

Sep 12-14, 2022 |Paris, France

The Success Story of Wi-Fi 6E and the Path to Wi-Fi 7: Updates & Ongoing Activities

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This is not a Wi-Fi vs Cellular Debate

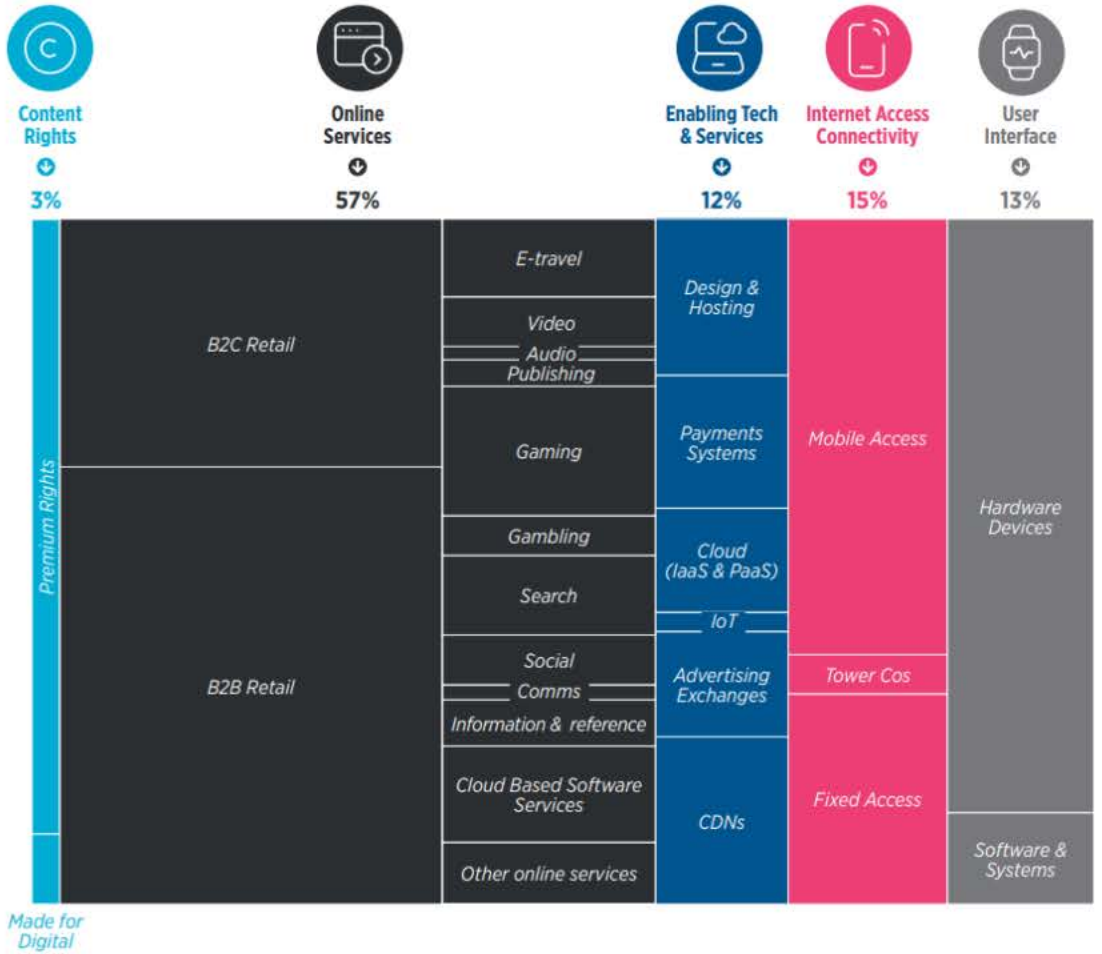
- According to the GSMA's The Internet Value Chain 2022, revenue from the cellular industry made up just 9% of all internet related revenue
- The group that the GSMA attempts to marginalize as the "Wi-Fi industry" includes both Wi-Fi manufacturers, and most of the larger internet ecosystem.
- The GSMA's own data elucidates the #1 reason WHY the rest of industry supports more spectrum for Wi-Fi....

Overall Valuation

Using the framework described above, we have quantified the overall size of the internet value chain based on the 2020 revenues of each of the subsegments[4]. Based on this approach, the total revenue of the internet value chain in 2020 was $6.7 trillion globally. As can be seen in Figure 5, the online services segment generates over half of this revenue, user interface 14%, internet access connectivity 15%, and enabling technology and content rights generate the remainder. In the following sections we look at the scope, size and dynamics of each segment.

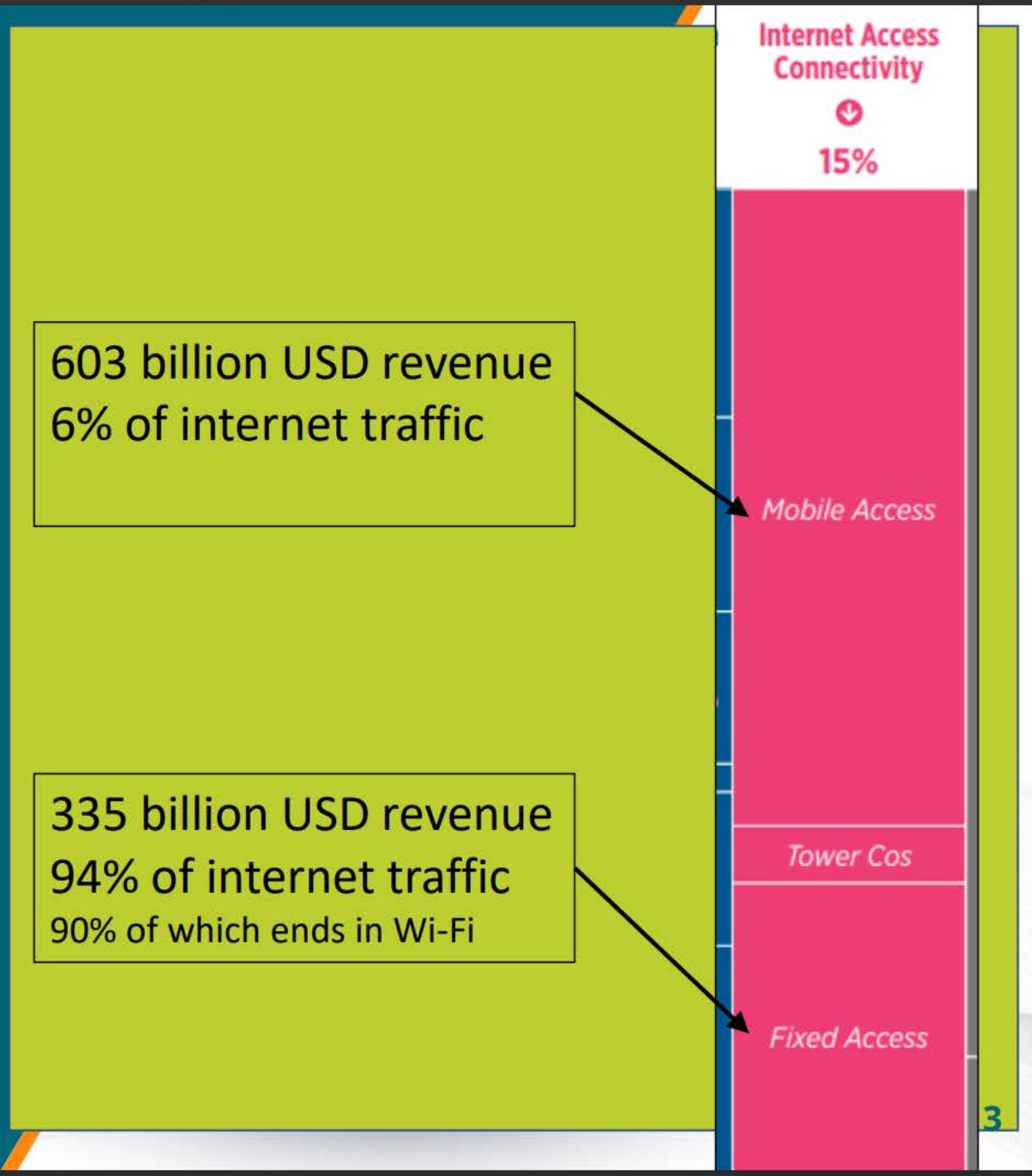
Figure 5.

Internet value chain valuation 2020



Mobile bits cost 28X more than wired bits

- There is no model where additional mid-band spectrum allows the mobile industry architecture to compete with fiber and the next generation of DOCSIS
- So what are they up too?

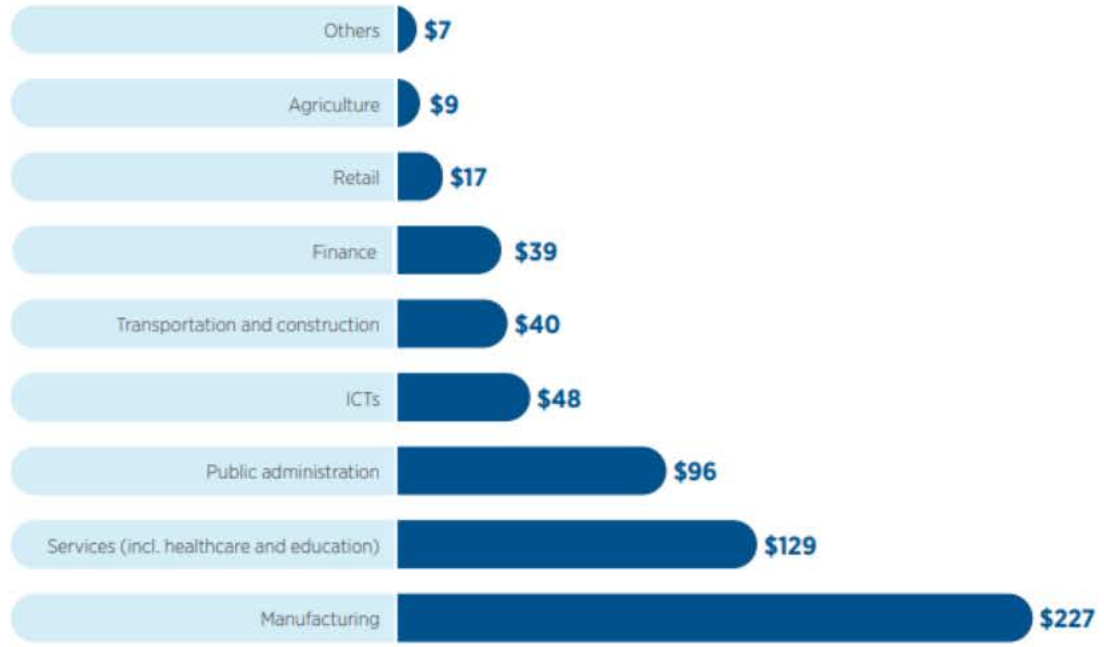


There is not enough spectrum for 5G and Wi-Fi to compete for the same use-cases.

- The GSMA is arguing that without access to 6GHz, GDP creation will be impacted. This is obviously hyperbole.
- What they are actually describing is the wireless component of industry 4.0
- 95% of the traffic growth will likely happen with other technologies .

The Socio-Economic Benefits of Mid-Band 5G Services

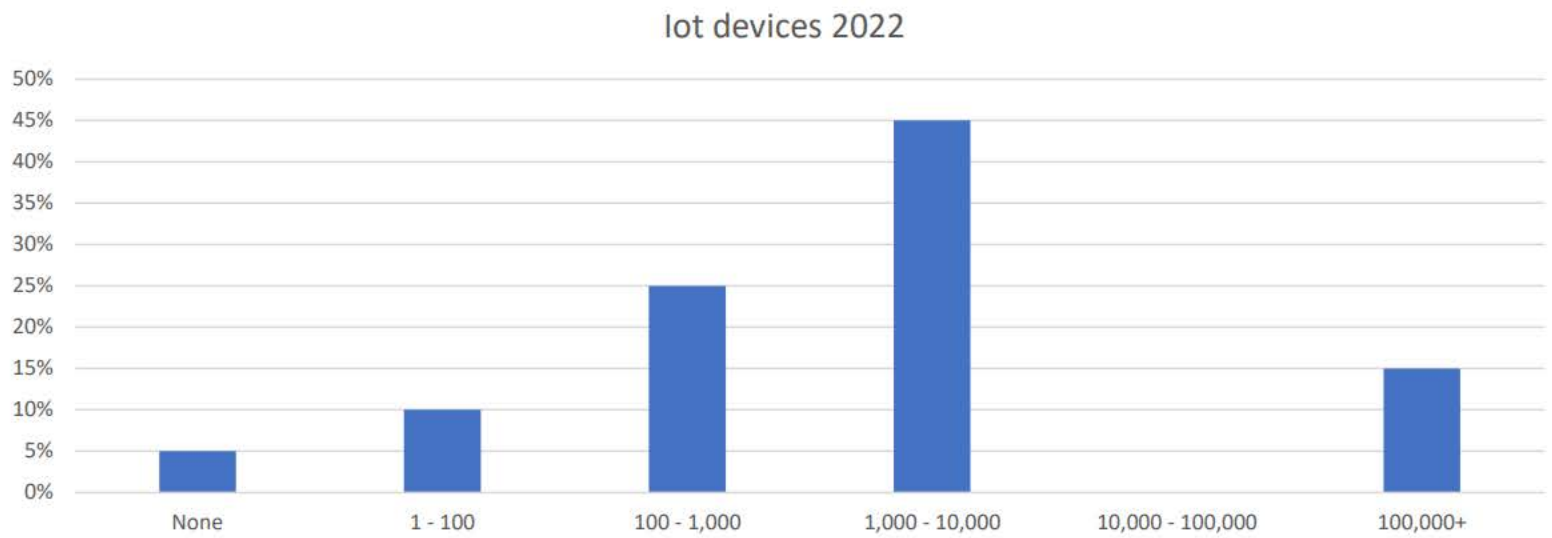
Figure 9: Estimated global contribution of mid-band 5G spectrum to GDP by sector, 2030
($ Billion)



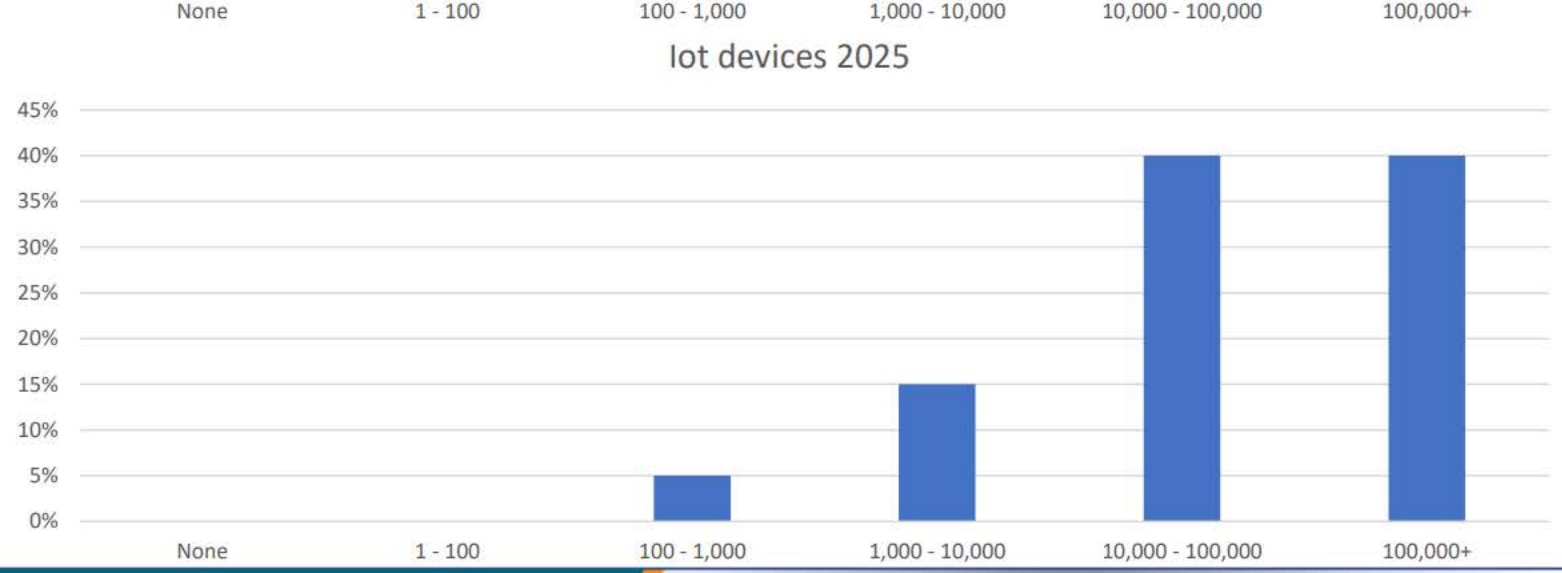
Source: GSMA Intelligence

Customer expectation of IoT device evolution

2022

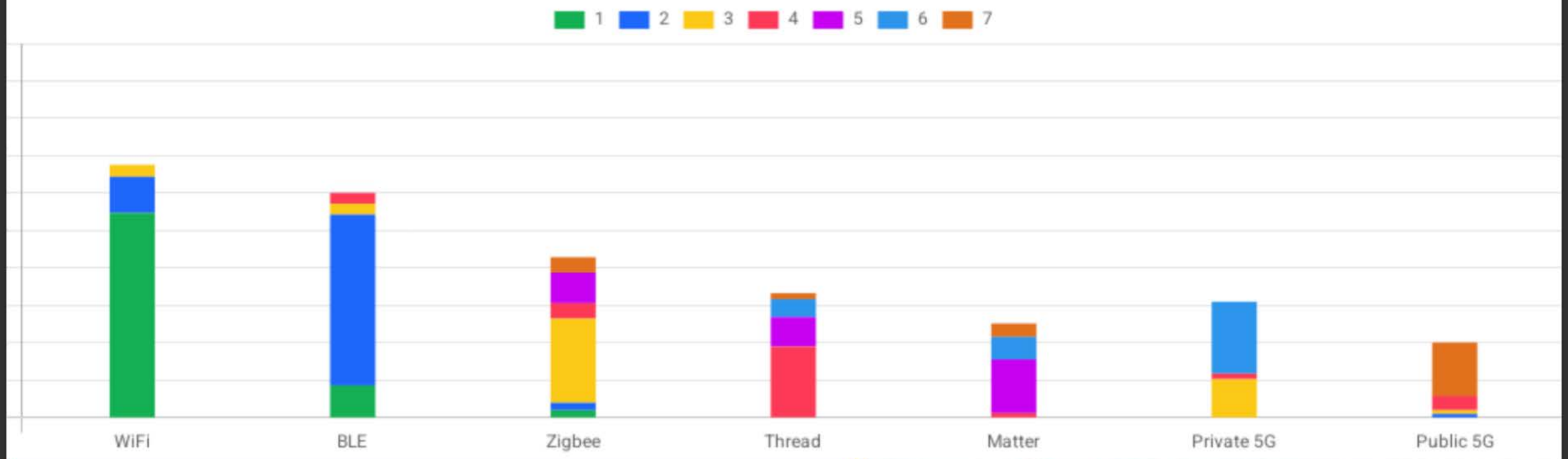


2025



IoT wireless technology ranking

Wi-Fi & BLE most important in enterprise evironments



Cisco's position

- **Given that more than 90% of wireless internet capacity is delivered by Wi-Fi and other unlicensed technologies, it is fair and reasonable to allocate 60% of new mid-band capacity spectrum to technologies that let enterprise customers and consumers deploy their own networks.**

GSMA's position

- **Despite less than 8% of wireless internet capacity being delivered by MNOs, it is fair and reasonable to allocate and auction 75% of new mid-band capacity spectrum for macro-cellular deployments for the future expansion of 5G.**

Questions?

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Wi-Fi 6E

Dr. Ravi Pendse
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Current and Future Uses

Robotics

Student dorms

Football stadium

Digital Education Studio

Network Infrastructure

- Strong history of successful, open technologies
  - TCP/IP
  - Internet
  - Ethernet (802.3)
  - Wi-Fi (802.11)
- Success due to
  - Low regulatory overhead
  - Constantly updated standards
  - Provider has control
- This creates
  - A foundation for discovery
  - A robust marketplace

Wi-Fi 6E

- Highly functional for U-M operational and research needs
  - Robotics partnerships interested in Wi-Fi 6E vs. cellular 5G
  - More spectrum capacity (wider channel bandwidths)
    - Faster and improved density for large lecture halls, residential areas
  - Low latency and efficient spectrum management due to greenfield 802.11ax environment
  - Improving location information with novel protocol development
- International support
  - Seeking worldwide adoption of 1200 MHz of 6 GHz spectrum
  - Best support for 320 MHz WiFi 7 channels
  - Benefits us all
- Future
  - Standard power for outdoor use

Wi-Fi and Cellular

- Value
  - Cellular
    - Excellent exterior coverage
  - WiFi
    - Excellent interior coverage
    - Low incremental cost per device
    - Cellular offload
- Expecting continued success of both with coexistence of 802.11 and 3GPP standards, radios, and clients
- Wi-Fi 7 and 320 MHz channel bandwidth makes 1200 MHz of spectrum even more critical for future innovation

The University of Michigan depends on strong, constantly evolving WiFi and cellular.

UNIVERSITY OF MICHIGAN

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