

Why 6GHz Wi-Fi Matters for India?

Nadeem Akhtar
Arista Networks

Wi-Fi 6 and Beyond

- Wi-Fi 6, based on the IEEE802.11ax standard, introduced a host of features to improve system performance and spectral efficiency
 - OFDMA
 - 8-stream MIMO
 - Spatial Reuse
 - Target Wake Time
- Widespread adoption of Wi-Fi 6 at the global level
- Wi-Fi 7, based on the IEEE802.11be standard, will include new features to further improve the spectral efficiency and increase throughput
 - Multi-link operation (MLO)
 - 16-stream MIMO
 - 320 MHz channels
 - 4096-QAM
- Wi-Fi 7 products expected to hit the market by 2023

Why 6GHz Wi-Fi?

Wi-Fi 6E (802.11ax in 6GHz) ensures legacy-free operation

- 6GHz Wi-Fi will not have to carry the burden of older protocols (11b/g/n/ac)
- Higher spectral efficiency

6GHz does not have radar interference

- No need for Dynamic Frequency Selection (DFS) for radar avoidance
- Less disruptive to clients

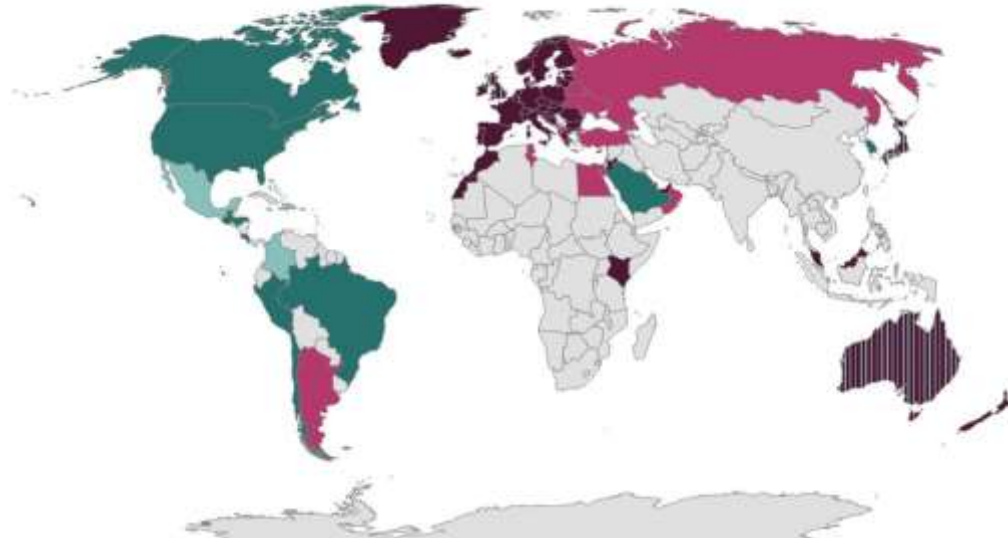
Contiguous spectrum enables wider channels

- Up to 160 MHz for Wi-Fi 6E and up to 320 MHz for Wi-Fi 7
- Higher throughput and lower latency

Link aggregation

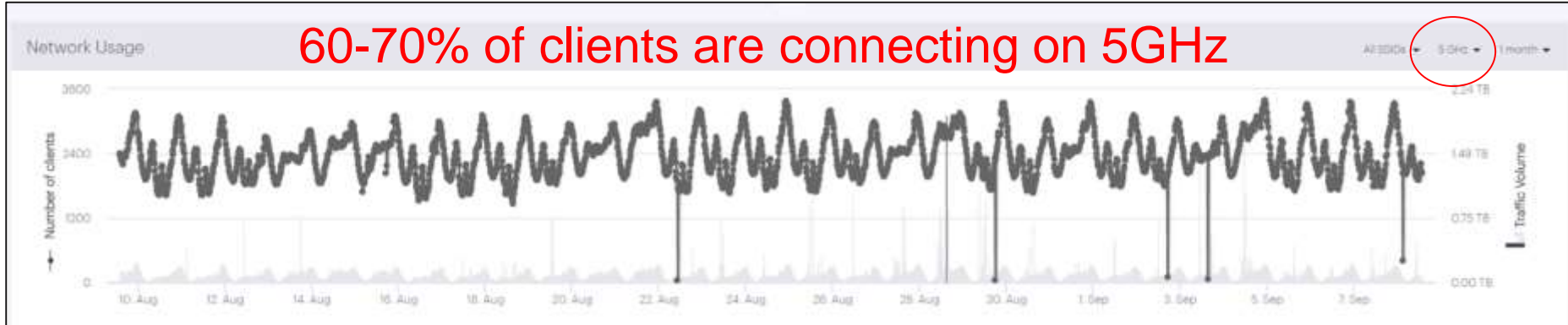
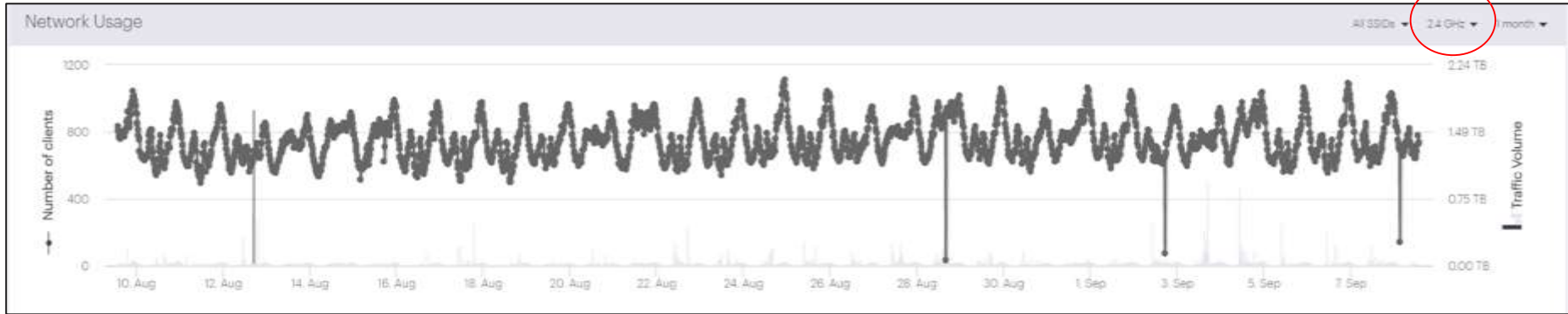
- MLO enables simultaneous transmission on multiple radio links
- Higher throughput and lower latency

Global 6GHz Adoption

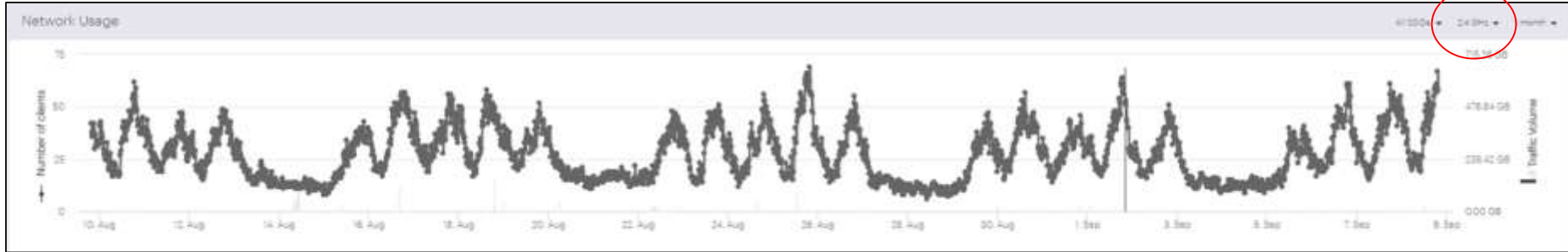


Source: [Wi-Fi Alliance](#)

Indian Scenario (University Campus)



Indian Scenario (Corporate Office)

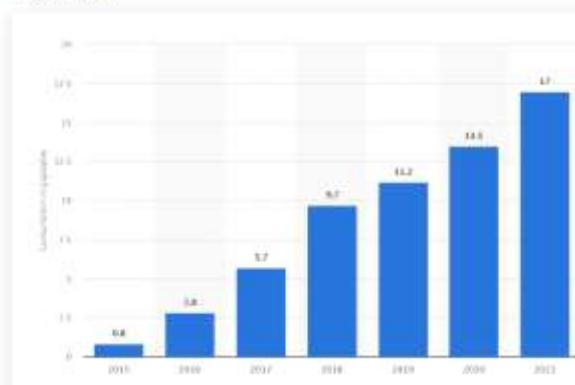


80-90% of clients are connecting on 5GHz

6GHz Wi-Fi for India

- 5GHz uptake in India is very high across all verticals
 - Significantly high percentage even in a university scenario where users are mostly students
 - Public Wi-Fi networks also have significant 5GHz usage
- With more 5GHz use, congestion is also increasing
 - In some cases, we have seen customers switching to 20MHz to reduce co-channel interference
- Wi-Fi 6 client population is growing rapidly
 - In networks which support Wi-Fi 5 only, we see significant population of Wi-Fi 6 capable clients (as high as 25%)
- WFH is here to stay
 - Demand for more capacity in home Wi-Fi networks, especially in multi-dwelling units

Average data consumption per user per month in India
(in gigabytes)



Source: Statista

More spectrum is critical to meet the current and emerging requirements

Way Forward



It's time to light up the 6GHz band with millions of Wi-Fi devices