IEEE 802.3 NEA AD HOC

WHY BEYOND 400GbE NOW?

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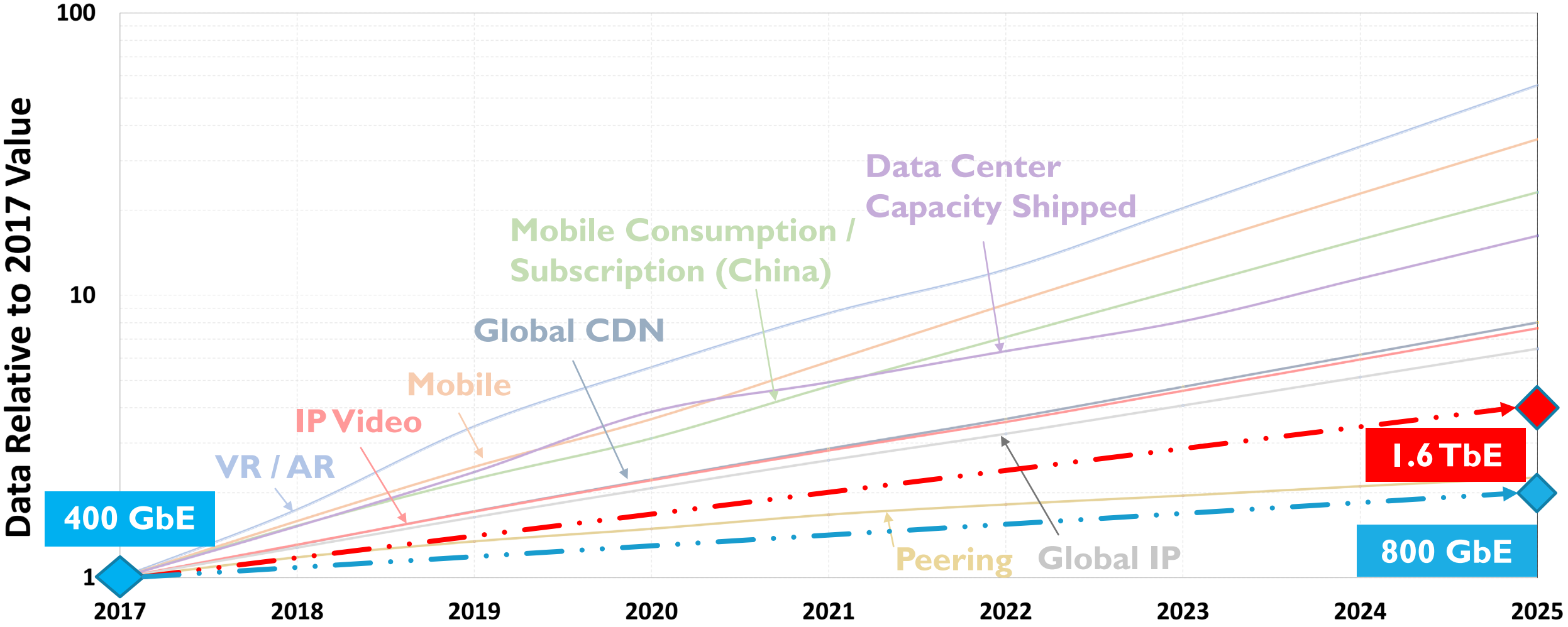
WHY NOW?

- Completion of Ethernet Bandwidth Assessment, Part II
- Industry moving forward
  - Forecasted deployment of 400 GbE
  - Industry activities looking Beyond 400GbE
  - Bandwidth intensive applications
    - Hyperscale data centers
    - Artificial Intelligence
    - 5G Deployment
- Current pandemic & stay at home scenarios highlighting and stressing the importance of networking in our lives and world
  - Bandwidth Preservation underway
    - Netflix reduces quality of video to reduce its traffic by 25% https://bit.ly/2VM8IWJ
    - Akamai plans to slow down video game downloads at peak times https://zd.net/3aLWodj

BWA2: EXTENDED FORECAST: 2022 – 2025 (ASSUMING CONSISTENT CAGRs)



OBSERVATIONS

- BWA2: 800 GbE / 1.6 TbE, if completed by 2025, still lagging most studied application areas
- Why will 40 GbE be different than 400 GbE?
  - Within 2 years of 1 million 40GbE ports shipping per year – 1 million 100GbE ports shipped per year
  - What's after 400 GbE?
- Completing a standard by 2025 doesn't mean high-volume product (First year 1M Ports shipped) is available in 2025
- Delaying start of "Beyond 400GbE" Study Group will exacerbate the observed lag between the next Ethernet rate and industry need

SO MANY QUESTIONS…

- Data Rate – question for study group
- Identify key application spaces –
- Identify target PHYs
- Discuss potential technologies
- Build consensus
- This will take time
  - Study Groups can exist for up to 1 year
  - No repeats of 2006 HSSG

THE EXPONENTIAL FACTOR

"The greatest shortcoming of the human race is our inability to understand the exponential function."

Albert Bartlett – American Scholar