

Everywhere there's signs.....

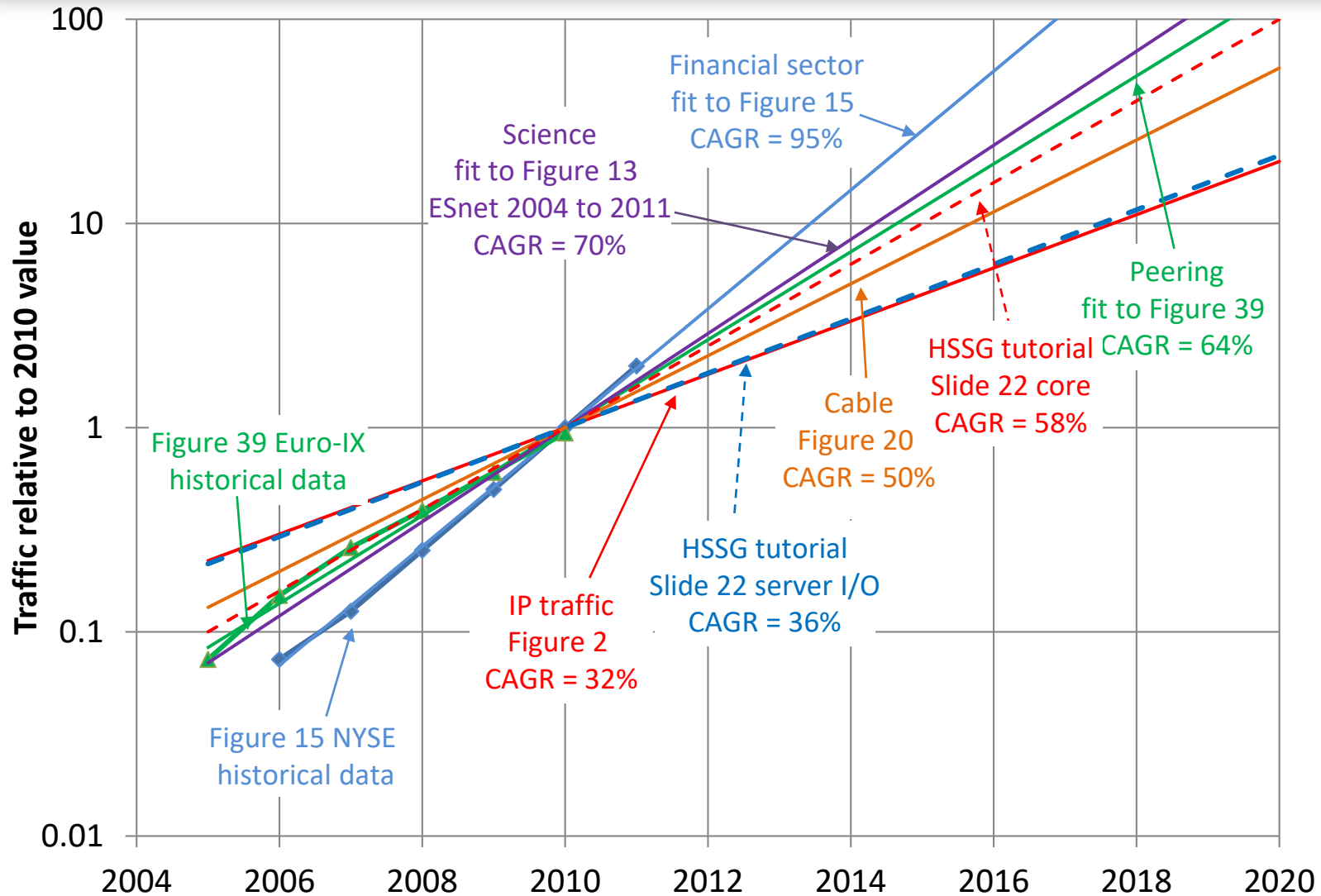
IEEE 802.3 NG-ECDC Ad Hoc  
Ft. Worth, TX, USA  
Sept 15, 2016

# Introduction

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- Jan 2011- Jul 12, the IEEE 802.3 Bandwidth Assessment Ad hoc did a study of industry bandwidth needs
  - [http://www.ieee802.org/3/ad\\_hoc/bwa/BWA\\_Report.pdf](http://www.ieee802.org/3/ad_hoc/bwa/BWA_Report.pdf)
  - Used to justify formation of “Higher Speed Ethernet” Ad Hoc and subsequently 400GbE Study Group / IEEE 802.3bs Task Force
- From 400GbE CFI Summary
  - Bandwidth – exponential growth continues!
  - New bandwidth generating applications constantly being introduced

# 2012 “BWA” Growth Rate Trends



# Recent Discussions

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- “Metro Data Center Interconnect”
  - [http://www.ieee802.org/3/ad\\_hoc/ngrates/public/16\\_07/booth\\_ecdc\\_01\\_0716.pdf](http://www.ieee802.org/3/ad_hoc/ngrates/public/16_07/booth_ecdc_01_0716.pdf)
  - Mega-DC moving to V2.0 Region
- 5G
  - IEEE 802 EC 5G / IMT-2020 Standing Committee Report, focus on IEEE 802 Access Network (wireless)
    - Noted threat – specifications may come too late or under perform
  - Field Trial announcement “20Gb/s per user” -  
<http://telecom.economictimes.indiatimes.com/news/vodafone-huawei-achieve-20gbps-speed-in-5g-trail/5331846410>  
Gb/s / 20 Gb/s
    - What will this mean to supporting wired infrastructure?

# Re-visiting Cisco VNI\*

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- Some interesting global forecasts
  - Mobile data traffic (2015 – 2020)
    - 8x growth – 53% CAGR
    - 30.6 Exabytes/ month (up from 3.7 Exabytes)
    - Avg mobile connection 3326 megabytes / month (up from 495 megabytes)
    - Video 75% of global mobile data traffic (up from 55%)
  - Smart Phones (2015 – 2020)
    - 5.6 billion (up from 3.0 billion)
    - Average 10.5GB / month (up from 2.0GB)
- Clearly something is up and Ethernet needs to be prepared.

\*Source: <http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>

# Summary

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- Signs are showing up ....
- 200GbE / 400GbE Extended Reach Optics
  - Seek more data (trends, bw, usage models)
    - Mega-DC moving to V2.0 Region
    - 5G
  - IMO - Demonstrating broad market potential with one or more solutions that people feel are technically and economically feasible is key to consensus building for successful CFIs