

100GbE or 40GbE – which represents a compelling market opportunity?

Or

"100GbE - Not Your Father's Ethernet, and that's OK..."

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Ethernet's Continuing Broadening Use

- In the 22 years since the 1st 802.3 Standard (1985), Ethernet has continually evolved and been extended to be applicable for uses well beyond the thick, yellow cable in the enterprise
- 802.3 has continued to shepherd the standardization of these new Ethernet services & uses, and should continue to do so
 - Examples include:
 - 802.3ah – Ethernet in the First Mile
 - 802.3ap – Backplane Ethernet
 - 802.3av – 10Gb/s Ethernet Passive Optical Network
- Continued comments on the HSSG reflector that 10GE's market take-up has been anemic and by implication, not critically important to the network infrastructure
 - These statements are a bit misleading and ignoring the broadening role and position which high-speed Ethernet is playing

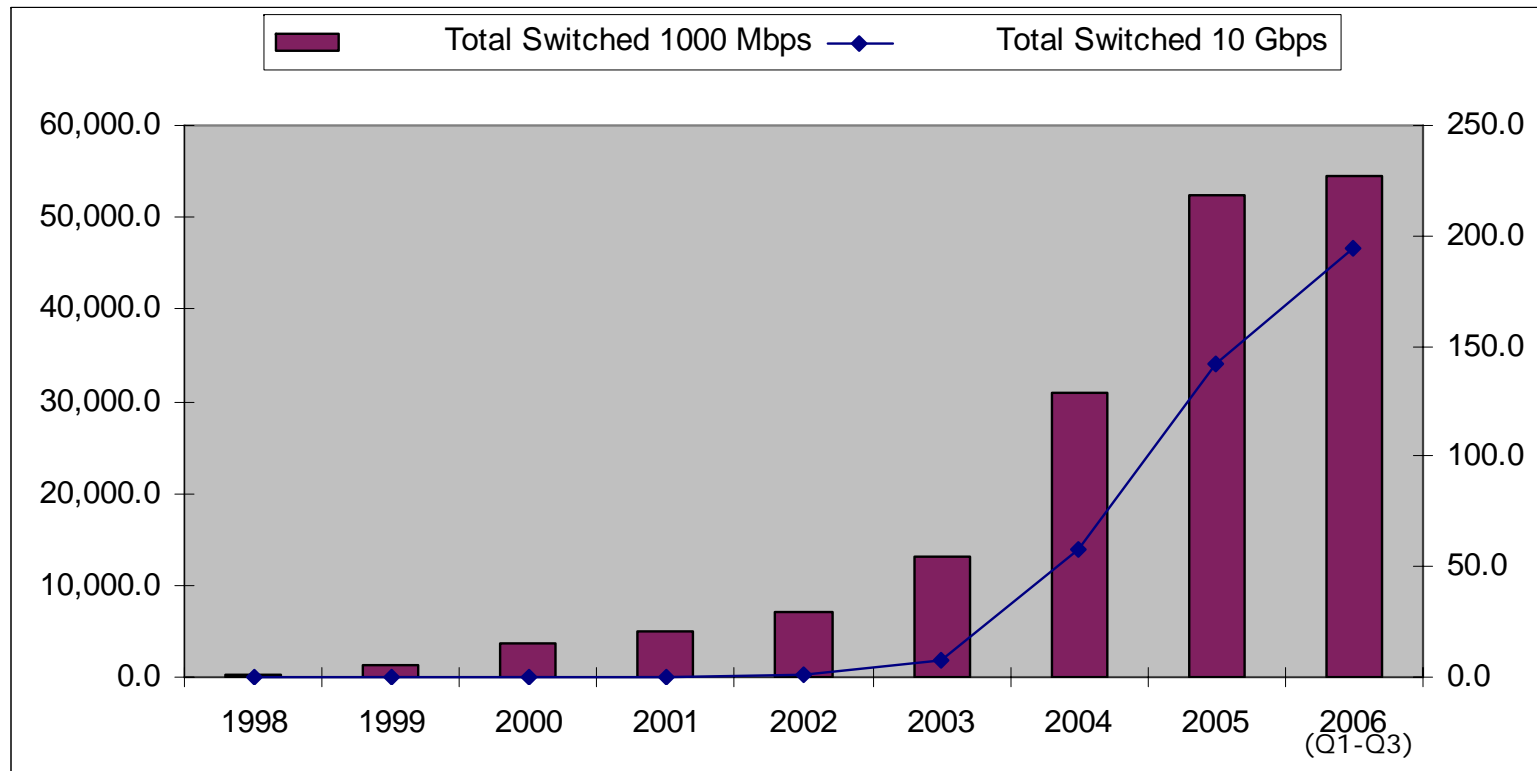
The Ethernet 'Ecosystem'

- Refer you to the multiple presentations made to the HSSG which provides a detailed treatment and discussion of the importance and need for high-speed Ethernet's use within the overall network infrastructure
 - Examples:
 - http://www.ieee802.org/3/cfi/0706_1/CFI_01_0706.pdf
 - http://www.ieee802.org/3/hssg/public/nov06/goergen_02_1106.pdf
 - http://www.ieee802.org/3/hssg/public/jan07/barbieri_01_0107.pdf
- Multiple industry groups are working in concert to aid in the deployment of Ethernet in these new application areas
 - Examples:
 - ITU SG13/15 activities related to Ethernet in the transport
 - E.g. Ethernet OAM functions, Ethernet protection switching, Ethernet Service description & frame mapping,...
 - Metro Ethernet Forum (MEF)
 - Ethernet in the First Mile Alliance
- It's natural that with these expanding applications, that we evaluate, understand and embrace the changing Ethernet paradigm
 - It is changing – let's not naively assume the original model...

So the critical questions are?

- Q1: *Is 100GE 'Speed induced myopia'? or Addressing a critical aggregation need & expanding Ethernet's push into the network?*
- Q2: *Is 40GE mainly component vendors looking for R&D reuse? or Does it represent a viable business segment in 2010?*
- Q3: *Which can stand on it's own as evidenced via SG efforts?*
- Postulate that 100GE is critically important & will be successful in the environments of data center, internet exchange & network aggregation
 - High-speed Ethernet can & will deliver better cost/performance taking over from STM-64 & STM-256 POS interfaces
 - Similar aggregation requirements for large data center applications
- Multiple end users and equipment OEMs are on-record of having no interest with 40G "within the network"
 - Can 40G be deemed viable as a server-only interface? When is this interface required?

Correlation Between Speeds & Port Growth



Source: Cisco (barbieri_01_0107.pdf)

- Between 2003 and 2006, GbE growth and 10GE growth were correlated
 - A symbiotic relationship exists; trunking & aggregation and accelerates with lower rate copper interfaces
- 2007: 10GE growth being constrained by lack of a higher speed aggregation interface - 100G is that higher speed interface
(Sources: Sprint, Yahoo, EDS, Amazon, AMS-IX, Cox, NTT, Equinox)

100GbE – Broad & Fundamentally Enabling Potential

- The 100G MAN/IXC network infrastructure aggregation needs, shares similar requirements with aggregation uses within data centers applications across multiple industries
 - As demonstrated by numerous end-user presentations to the HSSG
- With both of these aggregation uses, it is of critical importance that 100GE efforts progress in order to ensure a robust & healthy overall network infrastructure environment
 - Continued acceleration of 1GE & 10GE server and network equipment deployments depend upon this need being filled
- So while 100GE is not host/desktop driven,
 - It is critically important for both robust growth of lower rate Ethernet interfaces in their traditional application areas, and;
 - It is a key next step for Ethernet's continued accession as a ubiquitous end-end protocol