



Department of Management

Understanding the measuring and characteristics of quantitative data on Internet traffic: The socio-technical view

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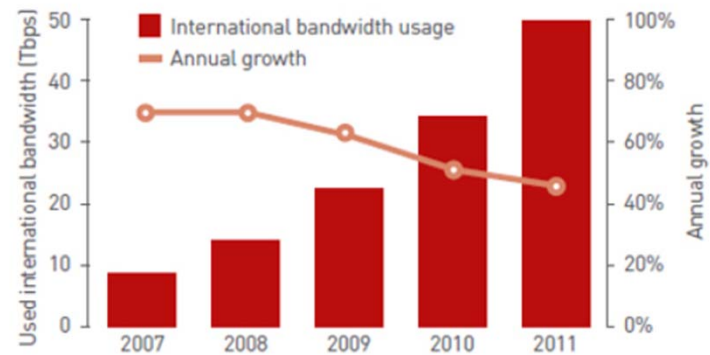
USA vs. Europe

- ◆ Main differences in business models for peering and transit, issues of the regulators and consumers view on net neutrality and service pricing
- ◆ Sustainability of the model and how competition is layout in those part of the world (comparison with Asia, Latin America and Africa)
- ◆ Various scenarios where regulation and business conflicts have taken different policy approaches

Transit vs. internet exchanges

- ◆ Highlight the view of the incumbents and current pricing decline
- ◆ Transit (major operators – business going down)
- ◆ Internet exchanges pricing going down
- ◆ Different players the 30/70 rule

Figure 1: European international bandwidth usage, 2007-2011



European internet exchanges

- Monitoring from other resources
- Qualitative approach
- Quantitative approach
- OECD (2012)
- Relevance
- Models
- Traffic
- Private peering

Figure 4: Median 10GigE IP transit prices in Europe, Q2 2009 to Q2 2012

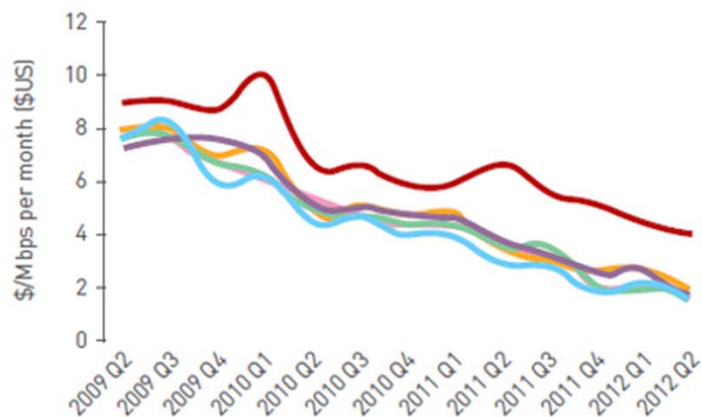


Figure 4: Median 10GigE IP transit prices in Europe, Q2 2009 to Q2 2012

Europe hosts a vibrant IP transit market, attracting international buyers from Africa, the ME and Asia. Not only have price declines accelerated in the region in the past year, but prices have become increasingly uniform among major hubs in western, northern, eastern and southern Europe.

Median 10GigE IP transit prices in these markets lay between \$1.5 and \$2/Mbps in Q2 2012, while prices in secondary markets such as Belgrade, Istanbul and Moscow ranged from \$4 to \$6/Mbps.

The \$1.67/Mbps median monthly price for 10GigE ports in London fell 40% per year compounded annually from Q2 2009 to Q2 2012. The lowest 10Gbps price quoted in London was \$1/Mbps for a 10GigE port.

Comparisons with other data sources: internet traffic as observed in Internet Exchanges versus Cisco's total estimates

European internet Traffic Estimations 2012 (PB / month)	Total internet traffic in Europe	Of which is real-time entertainment
Traffic in European IX (LSE estimates 2012)	3,594 (30% of Cisco total estimates)	1,258 (29% of Cisco total estimates)
Cisco VNI total traffic estimates (2012)	11,930	4,358

Policy relevance and others

- ◆ Cogent case (regulatory intervention)
- ◆ Information asymmetry
- ◆ Regulation (other paradigms)
- ◆ Structure
- ◆ Pricing (peering vs. transit)
- ◆ Strategic options (status quo pro, lateral transformation, move to services, integration)

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